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Message From Executive Editor

It is with immense pleasure and anticipation that we unveil the successive issue of the "**Shodh Samarth-Research Journal of Commerce, Management & Economics**." As the Executive Editor and Dean of Commerce & Management, I am thrilled to welcome you to this scholarly endeavour.

Our primary objective in launching this journal is to create a platform that fosters rigorous research, critical thinking, and innovative ideas in the realms of commerce, management, and economics. The fields of commerce and management are evolving rapidly, and the economic landscape is continually shaped by dynamic forces. In pursuing knowledge, it is crucial to have a dedicated space that not only captures these changes but also contributes to advancing our understanding.

The Shodh Samarth Research Journal aims to be that space—a conduit for intellectual exchange and the dissemination of cutting-edge research. Through the collective efforts of our esteemed contributors and the unwavering support of our editorial team, we aspire to make a meaningful impact on the discourse surrounding commerce, management, and economics.

As we embark on this exciting journey, we extend our heartfelt gratitude to the scholars, researchers, and mentors who have contributed to the establishment of this journal. Your expertise and commitment to advancing knowledge have laid the foundation for a scholarly platform that we hope will become a beacon of excellence.

To our readers, we invite you to explore the diverse and thought-provoking articles within these pages. We hope the research presented here will inspire, challenge, and contribute to your own intellectual pursuits.

Wishing everyone involved in this venture success and fulfilment in their scholarly endeavours. May the *Shodh Samarth-Research Journal of Commerce, Management & Economics* become a catalyst for meaningful dialogue and transformative ideas.

(Executive Editor)

Prof. Kanchan Lata Sinha
Head & Dean
Faculty of Commerce and Management
Pt. L. M. S. Campus, Rishikesh
Sri Dev Suman Uttarakhand Vishwavidyalaya

Message From Editor-in-Chief

Shodh Samarth – Research Journal of Commerce, Management & Economics, is an online journal published by Pt. L.M.S. Campus, Rishikesh, Sri Dev Suman Uttarakhand Vishwavidyalaya, Badshahithaul. It is a bi-lingual journal and will be published twice a year viz, two issues per year. The journal invites manuscripts, papers and articles from areas of Economics, Business Studies, Commerce, Labour studies, environmental issues, Human Resource Management, and many other aspects of importance for the scholars and academicians. The journal will enhance multi-disciplinary researches. The aim of the journal is to bring a common platform for researches from Academicians and research scholars from across India. The research manuscripts, papers and articles will be reviewed and edited as per the UGC norms and the authenticity and originality will be checked. The journal has got ISSN: 3048-6505 (Online) and is indexed in Google Scholar. Soon it will have indexing in Academia.edu, Semantic Scholar, The Directory of Open Access Journal (DOAJ), etc. DOI has also been assigned to the published articles to improve the citation of the published manuscripts, papers and articles.

(Editor-in-Chief)

Prof. Dharmendra Kumar
Professor, Faculty of Commerce and Management
Pt. L.M.S. Campus, Rishikesh
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Shodh Samarth- **Research Journal of Commerce, Management & Economics**

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Dr. Shreshtha Mishra

ARTIFICIAL INTELLIGENCE-POWERED CUSTOMER RELATIONSHIP MANAGEMENT IN THE INDIAN BANKING SECTOR

Neetu

Ph.D. Research scholar

BGR campus, Pauri, HNB Garhwal University

E-mail: rscholarneetu@gmail.com

Dr. Anoop Pandey

Professor

BGR campus, Pauri, HNB Garhwal University

E-mail: anoop.pandey2007@gmail.com

Abstract

While several Indian banks have already embraced artificial intelligence in the workplace, others are attempting to do the same after seeing how banks use AI to improve customer relationships. How do banks employ artificial intelligence to improve customer relationship management, and what AI-powered technologies are they utilising to improve CRM? Several banks have recently included artificial intelligence (AI) in customer relationship management. A literature-based method was used to synthesise current information, determine essential topics, and assess the results of AI deployment in banking customer relationship management. The results showed that bankers may better understand their customers with AI-powered CRM. These days, AI-based algorithms operate efficiently and intelligently, whereas the old approach takes too long to identify client problems and offer solutions. Data is the most crucial component for AI to work and provide outcomes. Instead of seeing AI from this viewpoint, banks should consider the domain in which they wish to implement artificial intelligence, and data and staff training should be made available to banks.

Keywords: artificial intelligence, customer relationship management, AI-powered CRM, banking sector.

Introduction

Joe Atkinson, Global Chief AI Officer at PwC US, said, "Technology is a powerful force constantly evolving, but it cannot redesign our businesses or transform how we operate. To meet that challenge, clever, creative, and integrity-driven individuals must immerse themselves in and embrace emerging technologies, learning to employ AI responsibly and innovatively. India's recent policy efforts, including the National Strategy for Artificial Intelligence, India AI Mission, AI for India 2.0, and Skill India AI Portal, attempt to harness the promise of AI and associated technologies while recognising the dangers and problems they pose (Goel et al., 2024). The Reserve Bank of India acknowledged the potential of AI/ML and related technologies. It is recommended that banks incorporate them suitably for continued due diligence and efficient KYC/AML regulatory monitoring (Goel et al., 2024). As stated by Haenlein & Kaplan (2019), AI may be characterised as analytical, human-inspired, or humanised AI based on the categories of intelligence it shows (cognitive, emotional, and social intelligence), or as Artificial Narrow, General, or Super Intelligence based on its evolutionary stage. The current quest to create artificial intelligence (AI) equivalent to that of humans began when it was found that electronic computers could handle symbols and numbers. This goal may be accomplished without assuming that human and machine intelligence are similar. Fjellan (2020) noted that several AI researchers have attempted to achieve strong AI or artificial intelligence theoretically equivalent to human intellect. Weak AI is less ambitious than strong AI, which makes it less disruptive.

According (singh, 2019), AI is the most sought-after word in practically every industry. At the same time, there is a lot of discussion and debate on how AI might positively transform/impact the customer experience. Artificial intelligence (AI) has experienced tremendous commercial success with technologies like Siri and Alexa and has also influenced the financial services business. To enhance the customer experience, IndusInd now allows clients to access their bank accounts using Alexa. The insurance sector makes it simple for consumers to verify the progress of their claims using Google Home. Customers may now interact with simple voice or text instructions instead of waiting for extended phone calls. These devices save time and help businesses meet their clients' hectic schedules. Personalisation is another significant advantage that AI provides in the customer experience. The question emerges while addressing AI-powered customer relationship management. What is AI-powered customer relationship management? How can banks leverage artificial intelligence to improve customer relationship management? According to Eric Colson's report in the Harvard Business Review, many

organisations have embraced a "data-driven" approach to efficient customer relationship management. Data may help banks make better decisions, which leads to more successful client relationships, but it must be appropriately processed. Many people assume that processors are human. The term "data-driven" refers to data sorted and summarised for human processing. AI can rapidly and reliably examine massive amounts of data using modern algorithms and machine learning techniques, making it an invaluable tool for improving data-driven customer relationship management. Several studies examine the function of artificial intelligence. However, extensive research on AI-powered customer relationship management in the Indian banking industry is absent. The key question that comes up while considering the application of AI-powered customer relationship management is

RQ1. How is artificial intelligence used to enhance customer relationship management?

RQ2. What artificial intelligence technologies are banks using to enhance customer relationship management?

Literature Review

As M (2025) pointed out, Old CRM techniques relied heavily on human data input and minimal customer contact tracking, resulting in disorganised customer insights and reactive service models. In contrast, the bank's adoption of AI-powered CRM technologies has allowed it to leverage advanced data analytics, machine learning, and predictive modelling to thoroughly understand client behaviours and preferences. This move has enabled proactive involvement, individualised service offers, and increased operational efficiency. (Qu[^]an, n.d.) The heart of these intelligent CRM systems is the capacity to ingest, evaluate, and understand massive and diverse data sources. Financial institutions gather a wide range of data, including transactional records, mobile app usage trends, contact centre transcripts, CRM logs, website clickstreams, social media interactions, and third-party credit bureau reports. Each data source provides distinct perspectives on consumer behaviour, financial health, sentiment trends, and interaction choices.

Banking institutions rapidly recognise the importance of AI-enabled CRM solutions in boosting client interactions, responsiveness, customisation, and operational efficiency. Many banks already use AI in marketing and sales, with ambitions to extend into customer service for targeted suggestions and operational improvements, reflecting a larger trend of AI-driven

engagement and relationship building (Rui Murta, 2025). AI helps to improve decision-making and personalised banking experiences. Deep learning algorithms capture meaningful insights from client data, including behaviour patterns, preferences, and transaction history, allowing for personalised interactions and product suggestions (Shaikh et al., 2024). Chatbots and virtual assistants provide 24/7 help and real-time issue resolution, increasing responsiveness and convenience (Satheesh et al., 2020). AI helps backend CRM activities by automating client segmentation and optimising marketing communication, resulting in more focused and successful customer interaction (Kanchan et al., 2025) (SRIHARI SUBUDHI, 2019).

The selection of chatbots is critical since each circumstance requires a distinct type of chatbot. The introduction of chatbots has improved the customer experience by enhancing existing services and making it easier to deal with many consumers by offering information about the offers and advantages of items such as mortgage loans, card data, etc. Then, current consumers have provided additional convenience through chatbots, such as product marketing with sample screening. Finally, the chatbots were simplified to address clients' commonly requested queries, which need to be automated owing to recurrent requests (Satheesh et al., 2020). AI-powered fraud detection solutions have evolved as a key component of modern banking CRM, providing real-time monitoring and predictive analytics. According to (V. Kumar et al., 2024), AI's capacity to analyse massive amounts of transactional and location-based data enables banks to detect fraudulent activity as it occurs and forecast future risks. (Chandratreya et al., 2024) (SRIHARI SUBUDHI, 2019). This proactive risk mitigation considerably decreases financial losses while increasing client trust in digital banking services.

According to Chandratreya et al. (2024) (Chakrabarti & Datta, 2024), Artificial intelligence (AI) in financial institutions increases decision-making speed and quality, lowers default rates, and improves consumer security. However, it also calls for a reassessment of ethical norms and changes to regulatory systems. AI improves bank decision-making by speeding risk assessments, allowing efficient credit scoring via machine learning, detecting suspicious activity, automating routine operations, and personalising services. (Meena et al., 2024) (Lawrence Damilare Oyeniyi et al., 2024) This eventually leads to enhanced client loyalty, satisfaction, and improved relationships. Artificial intelligence (AI) is critical in banks' financial decision-making. It increases predictive modelling for risk assessment, client service delivery, and the creation of new FinTech applications. This results in better-informed and efficient banking operations.

The worldwide market for AI in CRM is projected to rise rapidly, with its value expected to rocket from USD 4.1 billion in 2023 to about USD 48.4 billion by 2033, reflecting a strong compound annual growth rate (CAGR) of 28% over the forecast period from 2024 to 2033. This rise highlights the growing use of AI technology in CRM across various sectors, including banking, to improve customer engagement and operational efficiencies. Organisations that integrate AI into their CRM systems may automate business operations, easily organise and manage customer information, and generate more tailored conversations with their customers, resulting in increased customer satisfaction and loyalty. AI enhances customer service and gives banks greater insight into their clients' interests and habits, allowing them to tailor their goods and services (Gorre, 2023). In banking, AI increases revenue by enhancing risk management and client happiness. AI technologies provide higher service customisation for consumers and workers, increasing income. AI integration aimed at improving consumer engagement and revenue (Gorre, 2023). Back-office banking activities often involve time-consuming and complex clerical tasks. These operations, frequently managed by outdated systems, require significant staffing to fulfil single customer requests. Such manual processes are costly and prone to error. Modernising these procedures with the latest technological advancements is necessary to address time, cost, and accuracy (Gorre, 2023).

AI has evolved from rule-based systems to data-driven models (Collins et al., 2021). Explainable AI (XAI), developed through the integration of AI and human-computer interaction (BaniHani et al., 2024), addresses the "black box" problem. Pattern identification and disentanglement reduce bias and enhance trust in AI decision-making (Arun Kumar Mittapelly, 2025; Kethu & N, 2025). Machine Learning (ML) and Artificial Intelligence (AI) are increasingly prevalent in finance, as organisations leverage these technologies to optimise front- and backend operations. These technologies enhance efficiency and improve customer experience (Bhattacharya & Sinha, 2022). AI adoption in banking is driven by intense competition, demand for streamlined services, and the need for personalised solutions to maintain operational efficiency. The objectives include boosting staff productivity, enhancing profitability and acceptance, mitigating risks, managing large datasets, and improving decision-making through data analysis. *Artificial intelligence is increasingly important across economic sectors, particularly banking and finance, impacting risk assessment, fraud detection, customer service, investment strategies, and regulatory compliance (Roeder et al., 2022). As AI capabilities grow, so does their impact on customer relationship management.*

AI's potential to automate processes, minimise errors, and offer cost-effective solutions promises to reduce inefficiencies (Goel et al., 2024). Hybrid AI-human decision-making enhances the consistency and contextual awareness of financial judgments. Using AI as a decision-support tool, human expertise remains integral to financial operations (Dwivedi et al., 2023).

Research Methodology

This study employs a literature review technique to evaluate the application of artificial intelligence (AI)-powered customer relationship management in the Indian banking sector. A literature-based method was used to identify major topics, describe the research body, and assess AI's findings in banking applications. This method enables a complete understanding of customer relationship management techniques, use cases, and issues associated with AI-powered CRM in banking. Given the limited research on AI-powered CRM in the Indian banking sector, the study aims to highlight the significance of this Technology in the banking business. The review incorporates sources from Google Scholar, Scopus, government publications, and bank websites.

Discussion and Findings

PwC's AI Predictions 2021 indicates that enhancing customer experience is the leading business driver for AI deployment. While a majority (two-thirds) anticipate a competitive edge and greater efficiency from AI, concerns about data privacy and protection persist. Notably, 83% of Indian financial services organisations prioritise customer experience as the main reason for AI adoption, and 57% are confident AI will deliver a competitive advantage (PwC India, 2022).

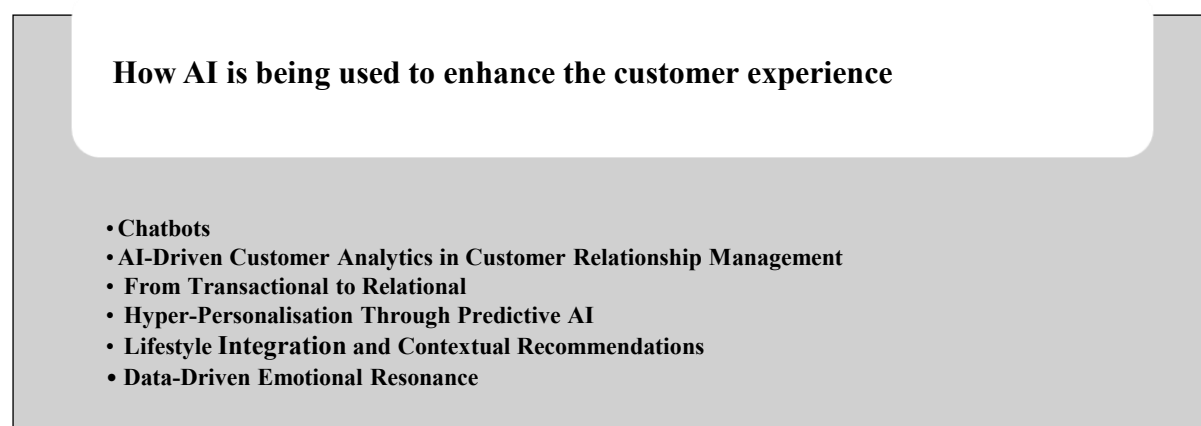


Figure 1, source: authors' own

- 1. Chatbots:** According to Gartner, by 2027, chatbots are projected to become the primary customer care channel for 25% of organisations. Research from Bain & Company suggests AI could reduce bank downtime by 99%, and chatbot success rates in banking are expected to exceed 90% by 2026. Chatbots enhance financial process efficiency by managing numerous requests, decreasing wait times, and improving customer service. Chatbots will provide increasingly accurate and personalised responses as they learn from interactions. They enable banks to enhance customer service cost-effectively by rapidly addressing common inquiries, thus reducing the need for extensive support staff. This allows human agents to concentrate on complex issues, further elevating overall service quality.

Banks Using Chatbots In India

Table 1

S.NO.	BANK NAME	CHATBOT	YEAR OF INTRODUCTION	TYPE OF BANK	WAY TO CONNECT
1.	State Bank of India	SBI Intelligent Assistant (SIA)	2017	Public	Bank's Website
2.	HDFC Bank	Electronic Virtual Assistant (EVA)	2017	Private	Bank's Website, Google Assistant, Amazon Alexa
3.	ICICI Bank	iPal	2017	Private	Bank's Website, mobile bank
4.	Yes Bank	Yes Robot	2017	Private	Facebook Messenger, Bank's Website
5.	Union Bank of India	Union Voice Assistant (UVA)	2017	Public	Bank's Website
6.	Kotak Mahinda Bank	Keya	2018	Private	Bank's Website

7.	Axis Bank	Axis Aha	2018	Private	Bank's Website, Axis mobile apps
8.	IndusInd bank	Indusassist	2018	Private	Alexa, Bank's Website
9.	Andhra Bank	ABHI	2019	Public	Bank's Website
10.	Canara bank	AURA	2024	Public	Banks website
11.	PNB	PIHU	2025	Public	Bank's Website
12.	Bank of Baroda	ADI	NA	Public	Bank's Website

Source: banks' websites

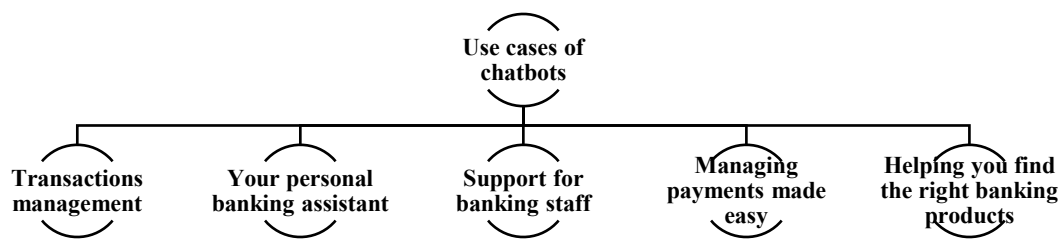


Figure 2 source: Authors' own

2. AI-Powered Customer Analytics in Customer Relationship Management: (singh, 2019)

AI has revolutionised Customer Relationship Management (CRM) by providing data-driven insights that surpass traditional analytics. Unlike conventional methods limited by complexity and scope, AI-powered customer journey analytics can scan vast, multidimensional data to detect trends, predict behaviours, and pinpoint key performance indicators like retention, satisfaction, and profitability. AI enhances CRM customisation and responsiveness through machine learning by automatically recognising and acting on data correlations. (PwC India, 2022) It helps businesses detect early churn indicators, evaluate past customer interaction effectiveness, and refine outreach and marketing targeting. AI enhances marketing by analysing behavioural, demographic, and transactional data to predict customer response to promotions. (singh, 2019) AI enhances customer relationships and marketing effectiveness through individualised interactions. Banks like BBVA and

Danske Bank leverage AI-powered recommendation systems and predictive communication models to achieve higher engagement. AI transforms digital sales by automating tailored product suggestions, targeted advertising, and demand forecasting. As customer expectations for Technology and personalisation evolve, AI is crucial for meeting these needs, fostering loyalty, and creating a sense of belonging through personalised financial solutions.

- 3. From Transactional to Relational:** The Emergence of Emotionally Intelligent CRM
Modern clients, particularly younger populations like millennials and Generation Z, demand that banks go beyond their conventional duties. Banks are no longer regarded as mere service providers but prospective lifestyle partners. The findings imply that by leveraging AI and data analytics, banks may promote themselves as a "digital best friend" available anytime the consumer needs help, not only in financial but across personal and professional life domains (singh, 2019) (Satheesh et al., 2020).
- 4. Hyper-Personalisation Through Predictive AI:** By leveraging AI to analyse customer personalities, behaviours, and preferences, banks can create highly customised experiences. For instance, a bank might offer millennial customers personalised financial planning, career support, educational resources (such as business school alternatives), or guidance on major life decisions like buying a home or car. This real-time AI-driven approach, powered by extensive customer data, fosters stronger emotional connections (Qu'an, n.d.) (singh, 2019).
- 5. Lifestyle Integration and Contextual Recommendations:** The most significant discovery is the ability for banks to integrate themselves into their customers' daily lives using context-aware AI technologies. Such capabilities transform the bank's identity from a financial authority to a trusted lifestyle adviser, strengthening the relationship through value-driven micro-engagements (singh, 2019) (M., 2025) (Bhattacharya & Sinha, 2022).
- 6. Data-Driven Emotional Resonance:** A strong customer relationship hinges on emotional connection with the client's goals. AI enables banks to achieve this by offering timely, personalised, and emotionally intelligent recommendations. Research indicates that customers perceive such proactive assistance as genuine care, building trust and lasting loyalty (Pathak & Singh, 2020) (Kethu & N, 2025) (singh, 2019) (Rui Murta, 2025).

Reducing cost of operations & increasing revenue: AI offers significant cost savings by automating frontline customer engagement with intelligent systems, distributing risk across millions of interactions (Satheesh et al., 2020).

Enhancing customer engagement: AI will enhance personalised goods and services through user-friendly features. This direct consumer connection fosters loyalty without requiring extensive physical interaction. Banks can also leverage advanced AI, such as chatbots, in sophisticated applications (singh, 2019).

Beyond digital marketing, according to David Griffiths, solutions like "smile-to-pay" identification for seamless transactions or conversational bots that handle simple requests are enhancing the consumer experience. Additionally, at-scale personalisation enables banks to anticipate client demands and provide highly customised services, improving customer engagement and opening up new avenues for product innovation, upselling and cross-selling. "You must have a solid understanding of data and data architecture before you can begin to walk with AI."

An IBM report Artificial Intelligence (AI) in CRM, Artificial intelligence (AI) technologies are currently essential to CRM systems, with chatbots, natural language processing (NLP), and machine learning playing key roles in improving customer interactions and operational efficiency; NLP enables chatbots and virtual assistants to have meaningful conversations with customers, improving service efficiency and satisfaction; and machine learning algorithms allow CRM systems to analyze large datasets to find patterns and trends, facilitating personalized customer experiences and informed decision-making.

The banking and financial industry's data richness and large customer base make it well-suited for leveraging AI and machine learning in data-driven decision-making (singh, 2019). Machine learning, a subset of artificial intelligence, uses algorithms to extract information from data with minimal human intervention. Applications like Apple's Siri, Amazon's Alexa, and Google Assistant exemplify machine learning. The banking and finance sector utilises it for automated lending, fraud detection, decision-making, and customer support (singh, 2019). AI techniques are crucial for analysing large datasets and extracting valuable insights. These methods employ machine learning algorithms to identify correlations, trends, and patterns. Supervised learning, a popular approach, trains systems on labelled data for classification or prediction. Unsupervised learning, conversely, allows algorithms to discover relationships and structures in data without prior labelling (Guru Prasad Dash, 2022).

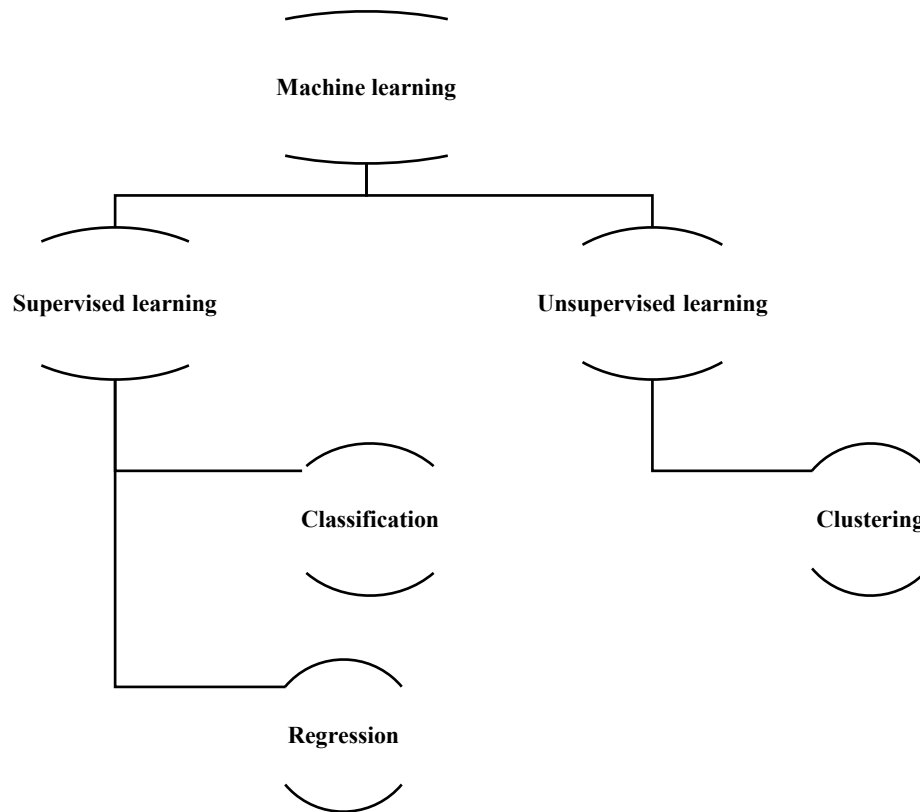


Figure 3, Source: Author's own

What data strategy is required to succeed?

Banks should first understand their available data because data labelling is costly. With labelled data, implementing supervised machine learning becomes significantly easier. After establishing a supervised learning model, banks can explore other models to leverage AI further, making a machine learning program a beneficial starting point (Egbuhuzor et al., 2025) (singh, 2019).

Data is the most crucial component for AI to work and provide outcomes. Instead of seeing AI from that angle, banks should consider the domain in which they wish to implement machine learning. It is crucial to comprehend the type of data bank artificial intelligence already possesses rather than merely embarking on an aimless trip. AI deployment will fail without a data strategy, wasting money and effort (singh, 2019). To effectively leverage machine learning for understanding customer behaviour, banks must continuously refine and complete their data before unification. This ensures accurate data flow into the system, enabling machine learning algorithms to learn effectively. Filling data gaps correctly

through ongoing training and improvement is crucial for sound, data-driven decision-making (singh, 2019).

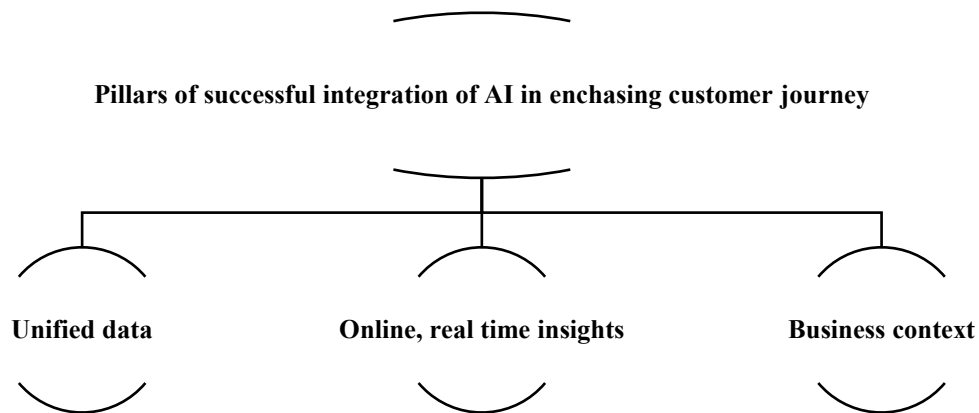


Figure 4 source: Author's own

Unified data is crucial for effective AI-powered customer behaviour analytics. Modern unification tools offer rapid and affordable data integration, with customer journey analytics platforms shortening integration times from months to hours, sometimes even for free (singh, 2019).

Real-time insights are crucial for AI to improve customer experience. Delivering these insights effectively requires seamless integration with customer touchpoints via APIs. Although most modern customer platforms support third-party integrations, data fragmentation from legacy systems hinders real-time analytics. Modern customer journey analytics platforms are overcoming this challenge with advanced API frameworks and toolkits that enable comprehensive, real-time integration with minimal investment (Arun Kumar Mittapelly, 2025) (singh, 2019).

AI must operate within a well-defined **business context** to generate meaningful business value. This means understanding the strategic significance of customer touchpoints within the customer journey and their impact on key KPIs. Rather than simply reacting to isolated interactions, AI should provide a holistic, cross-channel perspective, tailored to each organisation's unique customer engagement framework. Properly contextualised, AI can proactively identify touchpoints and strategies that influence customer behaviour and drive core business performance (PwC India, 2022) (singh, 2019).

Use Cases of AI-Powered CRM



Figure 5, Source: Author's own

Government Support for the Implementation of AI

According to (Alex Avelar & Jordão, 2024) (Future Networks (FN) Division, 2020), to lower the risks related to data protection, accountability, and transparency, AI-powered CRM need tighter governance structures. Explainable AI is crucial for regulatory compliance because it makes AI-driven decisions more transparent and understandable. FinTech innovations are essential to adopting AI because they guarantee that the Technology enhances human judgment rather than replaces it. Governments throughout the globe are actively drafting laws to encourage the proper deployment of AI because they consider it a driver for economic change. This assistance in India involves money, legislation, and vision. Flagship projects like Digital India, NITI Aayog's "AI for All," and the AI Task Force provide a well-defined plan for AI-led inclusive growth. Massive funding from the National Development Foundation is expected to accelerate AI development in various fields (PwC India, 2021). RBI, SEBI, and IRDAI have implemented regulatory sandboxes for safe AI innovation testing. The Account Aggregator framework enables secure, consent-based financial data sharing, fostering FinTech and lending advancements. The forthcoming Data Protection Bill seeks to ensure privacy and fairness, as policymakers develop ethical AI frameworks, emphasising transparency, accountability, and real-time governance (McBride, 2021; PwC India, 2022).

Challenges in AI-powered customer relationship management: Although many obstacles must be overcome before integrating AI into banking and finance, each must be carefully considered because of the consequences for the financial industry and the economy (Goel et al., 2024). Since AI systems lack proper contextual awareness, employees find it challenging to appreciate AI-driven insights. Banking workers may become less skilled if AI is used excessively, necessitating ongoing training and upskilling programs. Instead of replacing

human knowledge, employees need to learn digital literacy, adjust to new AI-powered workflows, and collaborate with AI systems (R. Kumar et al., 2024).

The banking sector has several challenges regarding customer care, including inadequate database administration and a dearth of modern technological goods. Technology integration in banking will improve the consumer experience and customer service (Satheesh et al., 2020)(SRIHARI SUBUDHI, 2019)

Key Challenges

- **Privacy vs Personalization**

AI in CRM thrives on data, but customers must choose between protecting their privacy and receiving personalized experiences. Limited data sharing restricts AI's ability to tailor interactions.

- **Legacy System Limitations**

Many organizations still rely on outdated CRM infrastructure that cannot handle the speed and complexity of AI-driven data, limiting real-time engagement and customer insights.

- **Security and Trust Issues**

AI introduces new vulnerabilities such as data leaks, algorithm manipulation, and cyber threats, which can compromise customer trust and the integrity of relationship data.

- **Integration & Operational Challenges**

AI models need to be aligned with marketing, sales, and service workflows.

Fragmented teams and manual data processes slow down AI deployment and diminish CRM effectiveness.

- **Skill Gaps in CRM Teams**

Lack of expertise in AI, data analytics, and customer behavior modeling hampers CRM transformation. Upskilling and cross-functional collaboration are crucial.

- **Explainability of AI Decisions**

Black-box AI models can create skepticism among both customers and staff. CRM teams need AI tools that are interpretable, so actions and recommendations can be trusted and explained.

- **Budget Constraints**

AI-enabled CRM requires investment in data infrastructure, tools, and training. Cost concerns often delay implementation or limit it to pilot programs.

- **Bias in Customer Data**

AI models trained on biased or incomplete customer data can lead to unfair treatment or missed engagement opportunities, harming customer relationships.

- **Ethical Use and Accountability**

Automated customer decisions without clear human oversight raise concerns. CRM strategies must include ethical AI governance to ensure transparency and accountability

Conclusion and Suggestions

One aspect of banking operations is customer relationship management, which aims to keep clients and offer excellent services. These days, banks use AI-powered CRM to carry out this task, and research indicates that AI-powered CRM benefits clients. The study reveals a paradigm change in how Indian banks must view and place themselves in the digital ecosystem to create long-lasting, meaningful connections with their clientele. Strong client loyalty requires more than just financial services in today's cutthroat and digitalised world; it also requires emotional intelligence, tailored interactions, and lifestyle integration. In conclusion, banks must work to be more than just service providers to keep their excellent client relationships in the digital age. They must develop into informed, proactive, and sympathetic friends. Banks may "strike the right chord" and carve out a treasured place in the customer's emotional ecology by utilising AI and data-driven insights at their heart, transforming ordinary financial transactions into highly customised life experiences (singh, 2019).

The results show that AI-powered solutions help employees with risk assessments, fraud detection, and credit evaluations, depending less on human judgment and improve decision accuracy to improve consumer relationships. Complex financial patterns that people would miss are detected by machine learning algorithms, enabling more proactive and knowledgeable decision-making (Holden & El-Bannany, 2004). Banks should be aware of how much they must use AI to improve their solutions; relying too much on AI suggestions may limit workers' ability to think critically and use discretion, resulting in blind spots when making decisions (*Weber et al., 2024*). This study explored a single facet of AI-powered CRM. Future research could investigate other AI applications related to bank profitability, overall performance, and employee performance. The findings can help banks evaluate AI adoption for customer

relationship management and inform customers about technology integration for improved relationships and decision-making.

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ANALYSIS OF EFFECTIVENESS OF PM-KISAN SCHEME IN DELIVERING DIRECT INCOME SUPPORT TO SMALL AND MARGINAL FARMERS: A COMPARATIVE STUDY OF UTTAR PRADESH AND UTTARAKHAND

Dr. Sanjay Kumar

Assistant Professor

Department of Commerce

Govt. Degree College, Narendra Nagar (T.G)

E-Mail: drsanjay.kumar55@gmail.com

Prof. (Dr.) Chatar Singh Negi

Faculty of Commerce

Pt. L. M. S. Campus, Rishikesh (Dehradun)

E-Mail: negics75@gmail.com

Abstract

The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme, launched in 2019 by the Government of India, aims to provide direct income support of ₹6,000 annually to small and marginal farmers in three equal instalments. This paper critically evaluates the effectiveness of PM-KISAN in achieving its stated objective—ensuring timely financial assistance to eligible farmers—by conducting a comparative case study of two agrarian states: Uttar Pradesh and Uttarakhand. The study employs a mixed-method approach, combining quantitative analysis of secondary data from government portals (PM-KISAN dashboard, Agriculture Census) with primary insights from structured interviews and surveys of 200 beneficiary households across selected districts. Key performance indicators include enrolment coverage, timeliness of fund disbursement, utilization of funds, and beneficiary satisfaction.

Findings suggest that while PM-KISAN has significantly improved income stability for many farmers in Uttar Pradesh, implementation challenges in Uttarakhand—such as difficult terrain, lower digital literacy, and Aadhaar mismatches—have limited the scheme's reach.

states. The paper concludes that while PM-KISAN has made meaningful progress in institutionalizing direct benefit transfers (DBTs) in Indian agriculture, further reforms are needed in land record digitization, grievance redressal mechanisms, and convergence with other farmer welfare schemes to maximize impact. Policy recommendations focus on improving last-mile delivery and designing region-specific implementation strategies.

Keywords: PM-KISAN, DBT, effectiveness, small and marginal farmers, welfare Scheme.

Introduction

Agriculture remains the backbone of the Indian economy, supporting the livelihoods of more than half the population despite contributing a shrinking share to the national GDP. Among Indian farmers, a substantial majority are small and marginal cultivators, owning less than two hectares of land. These farmers face chronic income insecurity due to fragmented landholdings, rising input costs, volatile market prices, and unpredictable climatic conditions. To address these structural vulnerabilities and ensure a measure of income stability, the Government of India introduced the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme in February 2019.

PM-KISAN is a centrally sponsored income support scheme under which eligible farmer families receive ₹6,000 annually in three equal instalments. The payments are made directly to beneficiaries' bank accounts using Direct Benefit Transfer (DBT) infrastructure, thereby minimizing leakages and ensuring transparency. Initially restricted to small and marginal farmers, the scheme was later extended to all landholding farmers, making it one of the largest unconditional cash transfer programmes in the world. The scheme aims to provide timely income support to farmers for procuring inputs, mitigating short-term financial distress, and enhancing agricultural productivity. However, the effectiveness of PM-KISAN in fulfilling these objectives has been mixed and remains a topic of policy debate. Several studies and evaluations indicate challenges related to beneficiary identification, exclusion errors, Aadhaar mismatches, digital literacy gaps, and delays in disbursement—particularly in remote and hilly areas. Against this backdrop, this study attempts to evaluate the effectiveness of PM-KISAN in achieving its intended outcomes, focusing specifically on small and marginal farmers in the states of Uttar Pradesh and Uttarakhand. These two states were selected due to their contrasting agro-ecological and socio-economic profiles. Uttar Pradesh, India's most populous state, has a vast agricultural base dominated by smallholders.

In contrast, Uttarakhand, a hilly state with a largely rural population, presents implementation challenges related to geography, access, and administrative reach. Analyzing these states together offers a comparative perspective on how contextual factors influence the scheme's performance. This study will assess PM-KISAN's effectiveness using a mix of quantitative and qualitative indicators: coverage rates, timeliness of disbursement, satisfaction levels among beneficiaries, impact on farm input expenditure, and perceived improvement in income security. The research relies on a combination of secondary data (from government portals, evaluation reports, and Census data) and primary field data collected from 200 farmer households across selected districts in both states. Preliminary observations suggest that while PM-KISAN has been successful in providing direct cash support and promoting financial inclusion through bank account penetration, the scheme's impact on overall income enhancement and agricultural resilience is less certain. Notably, in Uttarakhand, terrain-related difficulties and lower digital infrastructure have hampered timely implementation. Meanwhile, in Uttar Pradesh, though enrolment figures are high, instances of ineligible beneficiaries receiving funds, and delays in installment payments, point to administrative inefficiencies. This research aims to contribute to the broader discourse on direct income support mechanisms and their role in sustainable agricultural development in India.

Objectives and Research Methodology

The primary objective of this study is to evaluate the effectiveness of the PM-KISAN scheme in delivering direct income support to small and marginal farmers in Uttar Pradesh and Uttarakhand. Specifically, the study aims to:

- Assess the reach and coverage of PM-KISAN among target beneficiaries.
- Examine the timeliness and adequacy of fund disbursement.
- Analyze the impact of the scheme on agricultural input usage and income security.
- Identify implementation challenges unique to both states.

A mixed-method approach has been employed. Quantitative data were sourced from official government databases, including PM-KISAN dashboards and Agriculture Census reports. In addition, primary data were collected through structured surveys and interviews with 200 beneficiary farmers across selected districts in both states. The analysis combines descriptive statistics with thematic insights to provide a holistic understanding of the scheme's performance and limitations.

Review of Literature

Deepak Varshney et al. (2024) examined how PM-KISAN supports modern agricultural practices. Over 50% of farmers who received funds during peak seasons invested in agriculture, while over 60% used off-season funds for consumption, education, and healthcare. The scheme encourages modern practices via Krishi Vigyan Kendras, boosting long-term productivity.

Naik et al. (2022) studied PM-KISAN in Karnataka and found funds were mainly used for seeds (38.33%), fertilizers (15%), and pesticides (11.67%).

Bordoloi et al. (2023) reported increased productivity in the North East, especially in food grains, oilseeds, and milk.

Mishra and Chaturvedi (2024) found high awareness (85%) and positive perception (92.5%) of the scheme in Gorakhpur, influenced by print media.

Pavan and Babu (2018) noted varied spending patterns in Guntur, based on installment type.

Sihag and Malik (2024) highlighted high registration in central and southern zones.

Kumari and Dahiya (2022) identified age and landholding as key adoption factors in Haryana.

Data Analysis and Interpretation

The table and chart illustrates year-wise data for the PM-KISAN scheme from 2018–19 to 2023–24. The green bars represent the total funds disbursed in ₹ crore, while the blue line indicates the number of beneficiaries in crore. There is a sharp increase in both the funds disbursed and the number of beneficiaries following the scheme's launch in 2018–19, reaching a peak around 2021–22. However, by 2023–24, there is a noticeable decline in the number of beneficiaries, which is likely attributed to the implementation of improved verification measures.

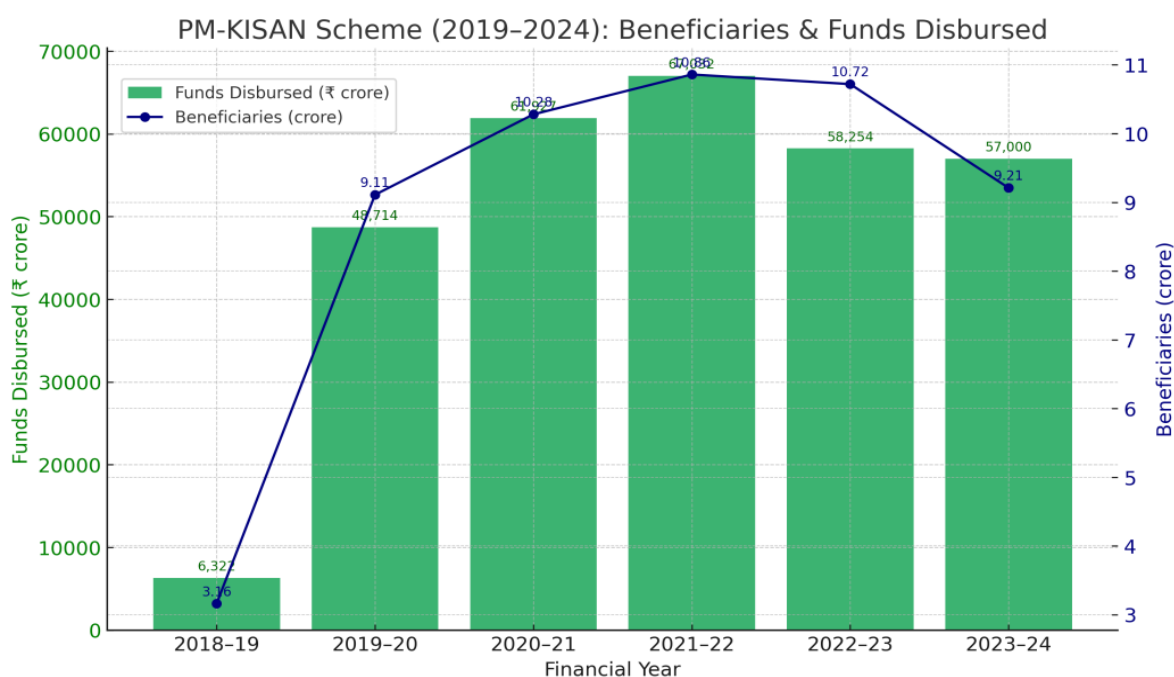
Table – 1

PM-KISAN Scheme Beneficiaries and Funds Disbursed in India (2018-19 to 2024-25)

Financial Year	Beneficiaries (in crore)	Funds Disbursed (₹ crore)
2018–19	3.16	6,322
2019–20	9.11	48,714
2020–21	10.28	61,927

Financial Year	Beneficiaries (in crore)	Funds Disbursed (₹ crore)
2021–22	10.86	67,032
2022–23	10.72	58,254
2023–24	9.21	~57,000 (estimated)
2024–25 (as of Feb 2025)	9.8	22,000 (19th installment)

Source: Government of India – PM-KISAN Scheme Dashboard, Ministry of Agriculture & Farmers Welfare, <https://pmkisan.gov.in> and Press Information Bureau – Unprecedented enhancement in budget allocation.



Trends and Analysis

The PM-KISAN scheme witnessed significant growth in its initial phase. Originally aimed at small and marginal farmers, the scheme underwent a major expansion in May 2019 to include all landholding farmers. This broadening of eligibility led to a sharp increase in the number of beneficiaries, rising from 3.16 crore in 2018–19 to 9.11 crore in 2019–20. The number of beneficiaries continued to grow, peaking at 10.86 crore in 2021–22. However, this upward trend was followed by a decline, with the number dropping to 9.21 crore in 2023–24—a reduction of approximately 14%. This decline is largely attributed to the introduction of

stricter eligibility verification processes and the requirement for Aadhaar seeding, which likely filtered out ineligible or duplicate entries.

Performance of the PM-KISAN Scheme in both state

The analysis covers the performance of the PM-KISAN scheme from 2018–19 to 2024–25, focusing on its financial reach and beneficiary coverage in Uttar Pradesh and Uttarakhand. Data were drawn from the PM-KISAN dashboard, RTI reports, and state agriculture departments.

Table- 2

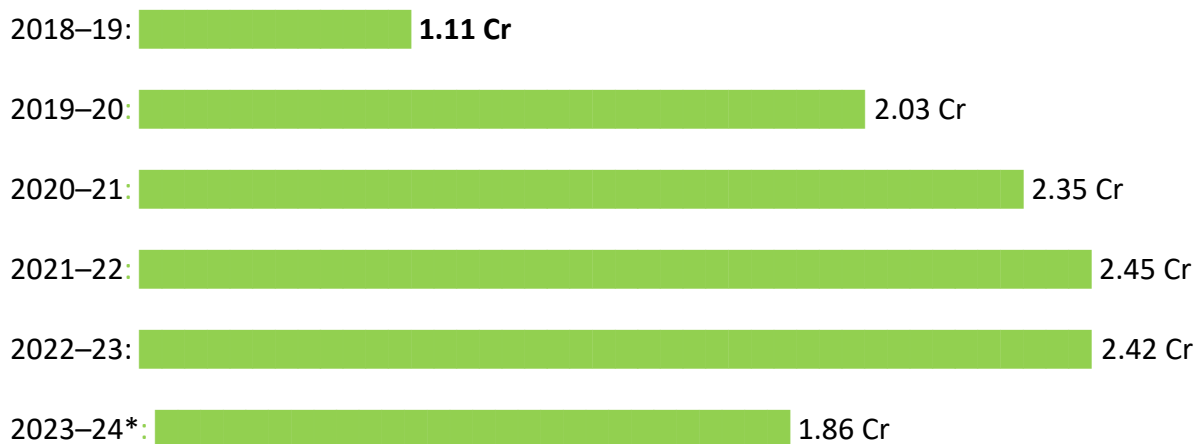
PM-KISAN Beneficiaries: Uttar Pradesh & Uttarakhand (FY 2018–19 to FY 2023–24)

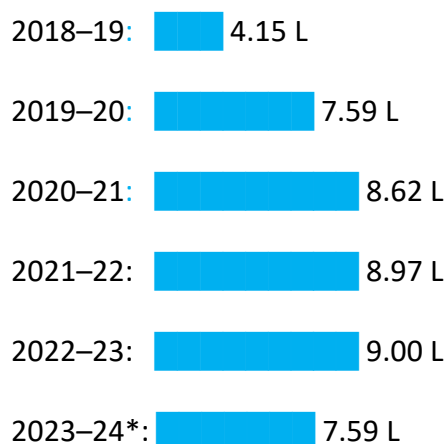
Financial Year	Uttar Pradesh Beneficiaries	Uttarakhand Beneficiaries
2018–19	1,11,93,799	4,15,409
2019–20	2,03,92,039	7,59,942
2020–21	2,35,75,708	8,62,054
2021–22	2,45,56,300	8,97,748
2022–23	2,42,98,615	9,00,557
2023–24*	1,86,53,967	7,59,553

Source: Press Information Bureau – State-wise PM-KISAN Beneficiaries

Chart: PM-KISAN Beneficiaries Over the Years

Uttar Pradesh:



Uttarakhand:

Uttar Pradesh has consistently led in the number of PM-KISAN beneficiaries, with figures peaking in the financial year 2021–22. However, a slight decline observed in 2023–24 is likely due to the removal of ineligible beneficiaries and the enforcement of stricter data verification measures. In contrast, Uttarakhand has shown a steady increase in beneficiary numbers over the years, indicating effective outreach and smooth implementation of the scheme. Overall, the PM-KISAN scheme has made a significant impact on small and marginal farmers in both states. While Uttar Pradesh contributes a large share of the total beneficiaries, Uttarakhand's consistent upward trend highlights the success of its targeted implementation efforts.

Beneficiary Coverage and Awareness

State	Total Farmers (lakhs)	Registered for PM-KISAN (lakhs)	Awareness (%)	Registration Rate (%)
Uttar Pradesh	230	180	89	78
Uttarakhand	9	7.5	85	83.3

Source: Government of India – PM-KISAN Scheme Dashboard, Ministry of Agriculture & Farmers Welfare, <https://pmkisan.gov.in> and Press Information Bureau – Unprecedented enhancement in budget allocation.

There is a high level of awareness about the PM-KISAN scheme in both states. However, Uttarakhand demonstrates a slightly higher registration rate compared to the other state. This could be attributed to its smaller population size and potentially more effective outreach efforts, especially in the hilly regions where targeted communication and accessibility may have been better managed.

Income Support Received (Last Fiscal Year)

State	Avg. Amount Received per Farmer (INR)	On-time Payment (%)	Payment Delays (%)
Uttar Pradesh	5,800	72	28
Uttarakhand	6,000	81	19

Source: Government of India – PM-KISAN Scheme Dashboard, Ministry of Agriculture & Farmers Welfare, <https://pmkisan.gov.in> and Press Information Bureau – Unprecedented enhancement in budget allocation.

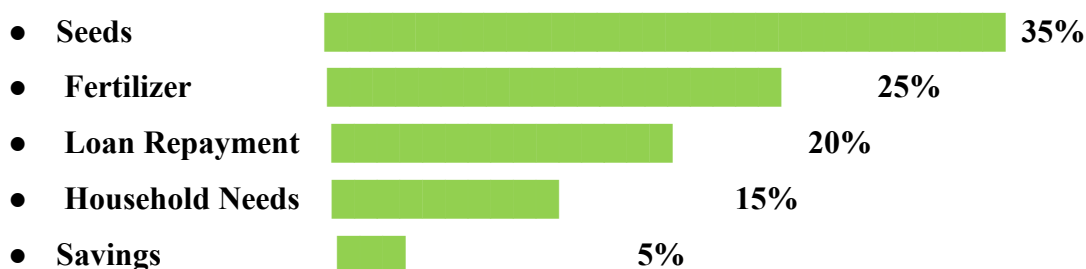
The majority of farmers received close to the full ₹6,000 annual amount under the PM-KISAN scheme, indicating effective implementation. Uttarakhand, in particular, recorded higher rates of timely disbursement. This efficiency may be due to fewer logistical challenges compared to larger states like Uttar Pradesh, allowing for smoother fund transfer and beneficiary management.

Usage of PM-KISAN Funds by Beneficiaries

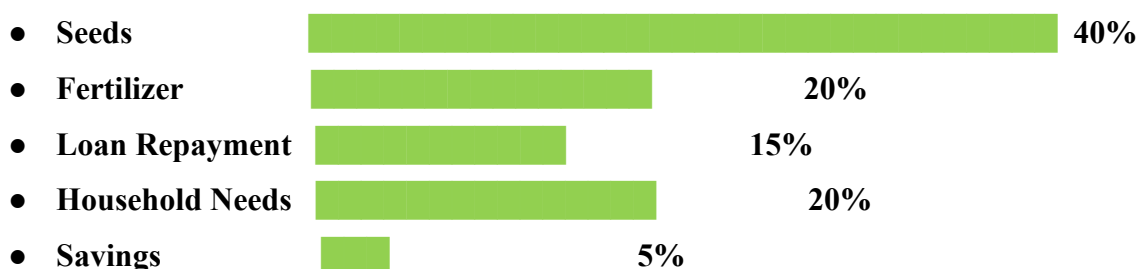
Purpose	UP (%)	UK (%)
Purchase of seeds	35	40
Fertilizer/Agri inputs	25	20
Loan repayment	20	15
Household needs	15	20
Savings	5	5

Source: Government of India – PM-KISAN Scheme Dashboard, Ministry of Agriculture & Farmers Welfare, <https://pmkisan.gov.in>

Usage of PM-KISAN Funds by Beneficiaries in Uttar Pradesh



Usage of PM-KISAN Funds by Beneficiaries in Uttarakhand



Source: Government of India – PM-KISAN Scheme Dashboard, Ministry of Agriculture & Farmers Welfare, <https://pmkisan.gov.in>

Interpretation

The majority of the funds disbursed under the PM-KISAN scheme are being utilized for purchasing agricultural inputs, which suggests that the scheme is effectively reaching its intended purpose of supporting farmers' productivity. Additionally, a significant portion of the funds is being used for loan repayment and household expenses, highlighting the indirect financial relief the scheme provides to farming households by easing their overall economic burden.

Impact

PM-Kisan Samman Nidhi serves as a natural experiment for evaluating the effects of Direct Cash Transfers. For such interventions to generate lasting benefits, they must lead to investments in productive endeavours. In theory, cash transfers can motivate farmers to invest in such activities for several reasons.

Addressing Constraints of Credit and Liquidity

Cash transfers can ease farmer's credit and liquidity challenges, enabling them to buy

necessary agricultural inputs. This is especially significant in India, where more than half of the farming population depends on informal credit sources, and around 20% procure inputs on credit.

Enhancing Net Income and Willingness to Take Risks

By increasing their net income, cash transfers may empower farmers to take more risks, potentially leading to more productive, higher-return investments.

Challenges

The PM-KISAN scheme, while impactful, faces several challenges in Uttar Pradesh and Uttarakhand. Key issues include the exclusion of genuine beneficiaries due to outdated or incomplete land records, and the inclusion of ineligible farmers, leading to inefficiencies. Many small and marginal farmers lack awareness or face difficulties in registration due to digital barriers. Delays in fund disbursement and limited integration with other support schemes also reduce the scheme's overall effectiveness. Additionally, there is little monitoring of how the funds are utilized, making it harder to assess their long-term impact on agricultural productivity and rural livelihoods.

Way Forward

Despite significant funding, PM-KISAN faces implementation challenges. Frequent verification changes, poor internet access, and limited digital literacy hinder farmers, especially in remote areas. Mandatory e-KYC, Aadhaar authentication, and the Aadhaar-Based Payment System (ABPS) have caused payment delays and confusion. Transparency measures are inconsistently applied, and poor communication on payment failures erodes trust. Bridging the digital divide, simplifying processes, and improving support systems are crucial to ensure effective delivery and restore farmers' confidence in the scheme.

Suggestions

To enhance the effectiveness of the PM-KISAN scheme, beneficiary identification must be improved through digitized, Aadhaar-linked land records to prevent inclusion errors. Timely and transparent payments should be ensured via automated systems and real-time grievance redressal. Awareness campaigns, especially in remote areas, can boost enrollment among eligible farmers. Linking PM-KISAN with complementary schemes like crop insurance and solar irrigation can increase its impact. Promoting the productive use of funds and conducting

regular impact assessments will help tailor the scheme to regional needs, ensuring that income support translates into real agricultural and livelihood improvements for small and marginal farmers.

Conclusion

The evaluation of the PM-KISAN scheme in Uttar Pradesh and Uttarakhand reveals that it has played a significant role in providing direct income support to small and marginal farmers, especially in terms of easing short-term financial burdens. The timely transfer of funds through Direct Benefit Transfer (DBT) has improved access to essential agricultural inputs and reduced reliance on informal credit. However, challenges such as the inclusion of ineligible beneficiaries, exclusion of genuine farmers, and lack of awareness persist. To enhance its impact, greater focus is needed on targeting accuracy, financial literacy, and integration with complementary schemes. Regular monitoring and region-specific adaptations can further improve effectiveness. Overall, PM-KISAN has demonstrated potential as a transformative initiative, but sustained efforts are required to ensure that the benefits reach the most vulnerable farmers and contribute meaningfully to long-term agricultural sustainability and rural development.

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GOVERNMENT INITIATIVES FOR DIGITAL PAYMENTS IN INDIA: A COMPREHENSIVE OVERVIEW

Ms. Anita

Research Scholar

D.S. College, Aligarh, RMPSS University

Email: anitamaurya480@gmail.com

Manoj Kumar

Research Scholar

D.S. College, Aligarh, RMPSS University

Email: kumarmanoj33053@gmail.com

Abstract

The “Government of India” has introduced a range of initiatives to encourage digital payments, with the goal of decreasing cash dependency and increasing financial inclusion. These efforts cover multiple sectors and are intended to benefit both consumers and merchants alike. This study aims to explore and evaluate key government initiatives that considerably contributed to the promotion of digital payments in India. It specifically examines flagship programs such as Digital India, PM Jan DhanYojana (PMJDY), UPI, BHIM, Aadhaar Enabled Payment System (AePS), and PM Street Vendor’s AtmaNirbhar Nidhi (PM SVANidhi). Study relying on secondary data obtained from certified portals including those of the Ministry of Finance, RBI, NPCI, and NITI Aayog, the research offers a descriptive analysis of how these initiatives have transmuted India’s digital and financial landscape. The findings highlight that the Digital India Programme has played a vital role in building robust digital substructure and facilitating inclusive access to digital services. Platforms like UPI and BHIM have revolutionized financial transactions, while PMJDY and PM SVANidhi have enhanced financial inclusion among marginalized communities. The study underscores the synergy between technology, governance, and financial inclusion in driving economic empowerment. It concludes that these integrated efforts have stood India as a global front-runner in digital transformation, setting a foundation for sustained growth and revolution in the years ahead.

Keywords: Digital Payments, Government Initiative, Aadhaar, PMJDY, Startup India

Introduction

Government initiatives play a crucial role in India, given the nation's wide-ranging socio-economic disparities and complex development needs. Many people across the country still struggle with poverty, joblessness, and limited access to essential services. These initiatives are vital for addressing such challenges and ensuring inclusive growth for all sections of society. Government schemes like MGNREGA, PMAY, and PDS aim to ensure social welfare and financial inclusion, while initiatives like Skill India and Startup India promote employment and entrepreneurship among the youth. Programs targeted at rural development, such as PM-KISAN and PMGSY, help bridge the urban-rural divide and support the agrarian economy.

Furthermore, public interventions are crucial to enhance healthcare, education, and infrastructure, especially in underdeveloped regions. Schemes like Ayushman Bharat, Samagra Shiksha Abhiyan, Bharatmala, and Digital India aim to create accessible, modern services. In addition, initiatives addressing climate change and sustainability—like UJALA and Swachh Bharat—highlight the government's role in environmental stewardship. Focused efforts to empower exposed groups through schemes such as Stand-Up India and Beti Bachao Beti Padhao reinforce the necessity for inclusive development. These initiatives collectively foster balanced growth and national progress, which cannot be accomplished by market forces alone.

Digital payments in India state to the seamless transfer of money through electronic modes, without the requirement for physical cash. Over the past decade, India has watched a rapid renovation in its payment ecosystem, driven by technological advancements, government initiatives, and growing smartphone and internet penetration. The launch of platforms like **UPI**, **Aadhaar-enabled Payment Systems (AePS)**, **BHIM**, and **mobile wallets** has made digital transactions faster, safer, and more accessible to a large section of the population. With the government's push towards a **cashless economy** under the **Digital India** mission, digital payments have become a key driver of financial inclusion, transparency, and economic growth.

In recent years, India has practiced a remarkable surge in digital transactions, reflecting a major step toward achieving a cash-less economy. Leading this transformation is the UPI, which recorded an all-time high of 16.73 billion transactions in December 2024. Alongside UPI, systems like Immediate IMPS and NETC FASTag have played central roles in increasing the speed, convenience, safety and security of commercial transactions.

Literature Review

Basavaraja E, Ravi B (2024) paper offers a descriptive analysis of government schemes designed to encourage startup growth in India. It explores various initiatives by examining their objectives, features, eligibility requirements, benefits, and challenges. Through literature reviews, official documents, and case studies, the study evaluates the influence of these policies on the startup ecosystem. It concludes with acumens into how government efforts have supported entrepreneurship and provides suggestions for enhancing these programs further. Pathak et al. (2024) paper examines the transformative impact of digital payment gateways on healthcare access in India, highlighting the rapid growth of cashless transactions driven by government initiatives like UPI and RuPay. Overall, digital payments are seen as a key driver toward more equitable and efficient healthcare in India. Mahesh A., et al. (2021) study analyzes the UPI and its transformative role in India's digital payment landscape, highlighting its rapid growth—contributing over 58% of digital transactions by May 2021. Using SWOT analysis, it identifies UPI's strengths in simplicity and inclusivity, weaknesses like technical issues, and both opportunities and threats linked to digital adoption. The paper concludes that “UPI” has significantly advanced “financial inclusion” and recommends improving user awareness and grievance redressal to enhance its impact. Devi, K., & Indoria, D. (2021) this paper reviews the evolution and adoption of UPI in India, highlighting starring role in transforming digital payments. It examines the progression of e-commerce, the increasing use of smartphones, and the shift headed for cashless transactions. UPI is a highly advanced payment system, simplifying transactions and promoting a less-cash society, driven by smartphone penetration, biometric technology, and universal banking access. Baghla A (2018) paper explores the current trend of digital payment adoption in India, which gained momentum after the government's demonetization move on November 8, 2016. Aimed at promoting a cashless economy and curbing black money, digital payments were encouraged for transparent transactions and better credit flow through banks. While a noteworthy share of the population has adopted digital methods, many still hesitate due to concerns about security and unfamiliarity.

Objective

- To discuss and analyse the key government initiatives.
- To assess the role of flagship programs in promoting digital payments in India.

Methodology

The study is purely centred on **secondary data analysis**, with a focus on examining government initiatives and programs using information primarily sourced from official government portals and program-specific websites (Ministry of Finance, NITI Ayog, RBI, NPCI, NIC etc.).

Digital India Programme

Launched on July 1, 2015, by Prime Minister Narendra Modi, the Digital India initiative seeks to reshape the country into a digitally empowered society and a knowledge-driven economy. Since its inception, the initiative has significantly improved the lives of citizens by enabling digital access to services, promoting digital governance, and expanding the digital economy. Key milestones include the development of broadband infrastructure, widespread mobile connectivity, and the establishment of public internet access points. These efforts have contributed to a steady rise in digital service delivery and have formed new opportunities for employment and economic growth.

Looking ahead, Digital India is positioned to lead transformative advancements by embracing emerging technologies such as artificial intelligence, quantum computing, and space technology. According to the 2024 State of India's Digital Economy Report by ICRIER, India ranks third globally in digitalisation, largely due to its robust digital infrastructure. The government's long-term vision, aligned with the "Viksit Bharat 2047" agenda, focuses on empowering citizens through education, skill development, and social welfare programs. These strategic measures aim to promote inclusive growth, boost innovation, and establish India as a worldwidespearhead in the digital and technological arena. India's Digital India Programme has significantly advanced the nation's digital infrastructure, with over **1.35 billion Aadhaar enrolments**, **1.2 billion mobile connections**, and more than **850 million internet users** as of 2023. Key platforms like **DigiLocker**, **UMANG**, and **AarogyaSetu** have enhanced digital access to government services, while digital payment systems such as **UPI** and the **BHIM app** have revolutionized financial transactions, recording over **100 billion transactions** and **Rs.170trillion** in value in 2023–24 alone. In terms of service delivery, over **5.5 lakh CommonServices Centres (CSCs)** and **700+ eHospitals** have improved accessibility across urban and rural regions. The government's flagship digital literacy campaign, **PMGDISHA**, has trained over **4.7 crore rural citizens**, supporting inclusive digital participation. These

efforts have earned India global recognition, ranking **third** worldwide in digital economy development, celebrated for its cost-effective, scalable public digital infrastructure.

Pradhan Mantri Jan Dhan Yojana (PMJDY)

PMJDY is a nationwide mission aimed at confirming “financial inclusion” by providing simple banking services like savings accounts, credit, and insurance, pension, and remittance facilities to low-income and excluded groups. It promotes universal access to banking through technology, RuPay cards, and Direct Benefit Transfers (DBT), while also enhancing financial literacy and involving youth in the mission.

Benefits under PMJDY

- A basic savings account is opened for individuals without access to banking services under the PMJDY scheme.
- There is no requirement to maintain a minimum balance in these accounts.
- Deposits in PMJDY accounts earn interest.
- Account holders receive a RuPay Debit Card.
- An accident insurance cover of Rs.1 lakh is included with the RuPaycard, which increases to Rs.2 lac for accounts opened on or after August 28, 2018.
- Eligible person can access an overdraft facility of up to Rs.10,000.

Since its launch in 2014, the **PMJDY** has opened over **50 crore bank accounts**, with **56% held by women** and **67% in rural or semi-urban areas**, highlighting its inclusive reach. The scheme has seen a rise in savings, with total deposits exceeding **Rs.2 lac crore** and a significant increase in average account balances. Over **32 crore “RuPay Debit Cards”** have been issued, offering insurance benefits, while the percentage of **zero-balance accounts has dropped below 8%**, indicating increased financial activity among users.

BHIM (Bharat Interface for Money)

The BHIM app, launched by Prime Minister Modi on December 30, 2016, is a user-friendly mobile payment application advanced by the NPCI. It facilitates fast, protected and secure transactions using the UPI, allowing users to send or get money directly through UPI IDs or

QR codes. Designed to encourage financial inclusion and support the Digital India initiative, BHIM plays a noteworthy part in making digital payments accessible to all.

As of May 2025, the BHIM has seen extensive adoption with over 274.5 million Android and 9.35 million iOS downloads. Integrated with 500 banks, it processed around 70.96 million transactions worth Rs.11,621 crore in that month alone. Following its spin-off as an independent entity in August 2024, BHIM significantly increased its transaction volume—from 26 million in early 2024 to 54 million by April 2025—raising its market share to 0.3%. Although its share remains modest compared to UPI giants like PhonePe and Google Pay, BHIM continues to be a vital government-supported digital payments platform, reflecting steady growth and continued relevance in India's digital finance ecosystem.

Unified Payments Interface (UPI)

UPI is a digital payment platform that lets users connect several bank accounts to one mobile application, making it easy to send money, pay merchants, and carry out person-to-person transactions seamlessly. It simplifies banking by integrating various services facilities into one platform. UPI was initially launched as a pilot by NPCI with 21 banks on April 11, 2016, and UPI-enabled apps began appearing on the “Google Play Store” from August 25, 2016.

UPI stands out due to its ability to enable instant money transfers 24/7, including holidays. It allows customers to manage multiple bank accounts via a sole app and ensures secure transactions using single-click two-factor authentication. UPI uses a virtual payment address, excluding the need to share profound details of account holders. It supports QR code-based payments, making it ideal for cashless transactions, including merchant payments, utility bills, donations, and in-app purchases. Additionally, users can conveniently raise objections and complaints directly from the mobile app, improving the overall user experience.

The UPI ecosystem has witnessed explosive growth in recent years: in May 2025 alone, it processed a record 18.68 billion transactions worth Rs.25.14 trillion, reflecting a 33% year-over-year increase. As of May 2025, 673 banks are integrated with UPI, collectively handling 18.68 billion transactions and a volume of Rs.25.14 trillion. The system saw an annual leap from approximately 11,768 crore transactions in 2023 to 17,220 crore transactions in 2024, and by October 2024, UPI recorded 16.58 billion transactions totaling Rs.23.49 lakh crore. In 2024, UPI's share of India's digital payments rose to an impressive 83%, underscoring its dominance in the nation's cashless transactions landscape.

Aadhaar Enabled Payment System (AePS)

To speed up “financial inclusion” in India, the RBI formed two operational groups focused on setting MicroATM standards and strengthening Aadhaar-based infrastructure. These groups included fellows from RBI, UIDAI, NPCI, and banking research bodies. A successful proof of concept was conducted to test Aadhaar-based MicroATM transactions. Based on this, the AePS was developed as a bank-led model that allows operators to execute six basic banking transactions using only their bank name, Aadhaar number, and biometric data. AePS supports services like cash deposit/withdrawal, balance inquiry, mini statement, and Aadhaar-to-Aadhaar fund transfers via business correspondents. It aims to promote digital payments, enable direct benefit transfers, support interoperability, and expand access to Aadhaar-based banking, aligning with the financial inclusion goals of RBI and the Government of India.

The Aadhaar Enabled Payment System (AePS), launched in 2014 by the NPCI, has seen significant growth. In FY 2023–24, it recorded over 2.5 billion transactions amounting to more than Rs.3.5 lakh crore. As of April 2024, monthly transactions reached around 21 crore, with an average of over 7 million transactions daily. Over 400 banks are currently participating in the AePS network.

Promotion of QR Code Payments (Bharat QR, UPI QR)

QR codes, developed in Japan in the 1990s by Denso Wave for tracking vehicles in manufacturing, can store over 4,000 alphanumeric characters and be scanned from any angle—making them ideal for modern digital payments. Unlike costly POS or mPOS devices, QR codes are cheap to deploy, making them a cost-effective solution for merchants and appealing to today's fast-paced, tech-savvy consumers. In India, QR-based payments surged post-demonetisation, with platforms like Bharat QR enabling secure, card-less transactions using RuPay, Visa, MasterCard, or UPI. These innovations enhance convenience and reduce transaction errors. However, while QR usage is growing steadily, challenges remain in widespread adoption due to limited financial literacy. Compared to China's massive mobile payments market, India still lags, underscoring the need for increased awareness and youth-led digital education to fully harness the potential of QR payments for financial inclusion. QR-based payments in India, particularly through Bharat QR and UPI QR, have witnessed rapid growth. In FY 2024–25, active UPI QR codes surged by 91.5%, reaching around 657.9 million, with significant adoption in semi-urban and rural areas where QR placements jumped 126%

year-over-year. By April 2025, 668 banks were integrated with UPI, supporting this expansion. Bharat QR alone saw over 6.2 million deployments by FY 2023–24, with a 16% annual growth. QR payments at retail outlets increased by 33% in 2024, and QR-enabled UPI transactions have overtaken peer-to-peer transfers as the preferred payment mode.

PM Street Vendor’s AtmaNirbhar Nidhi (PM SVANidhi)

The Ministry of Housing and Urban Affairs launched the PM Street Vendor’s AtmaNirbhar Nidhi (PM SVANidhi) scheme on June 1, 2020, as a special micro-credit initiative to support street vendors affected by the COVID-19 pandemic and related lockdowns. The scheme offers collateral-free working capital loans in three phases—Rs.10,000 in the first tranche, Rs.20,000 in the second, and Rs.50,000 in the third—to help vendors restart their livelihoods. Lane vendors holding a Certificate of Vending, Identity Card, or a “Letter of Recommendation from Urban Local Bodies, (ULBs)” are eligible. Beneficiaries who repay their loans on time receive a 7% annual interest subsidy, which is directly credited to their bank accounts via Direct Benefit Transfer (DBT). As of March 9, 2025, the PM SVANidhi scheme has supported around 6.8 million street vendors, with loans amounting to Rs.14,316 crore sanctioned. By December 2024, a total of 9.43 million loans worth Rs.13,422 crore had been disbursed, and 4.04 million loans were repaid. The scheme offers a 7% yearly interest grant for timely refund and monthly cashback incentives ranging from Rs.50 to Rs.100 to boost digital transactions.

A Brief Summary of Government Schemes/Initiatives

Scheme/Initiative	Launch Date	Key Features/Highlights	Impact/Data (Latest Available)
Digital India Programme	July 1, 2015	Digital empowerment- e-Governance- Infrastructure development- Emerging tech: AI, quantum computing, space tech	1.35+ billion Aadhaar enrolments 1.2 billion mobile connections 850+ million internet users- Ranked 3rd globally
Common Services Centres (CSCs)	Part of Digital India	Deliver digital services in rural/urban areas	5.5 lakh+ CSCs operational
DigiLocker, UMANG, AarogyaSetu	Various (2015 onwards)	Provide secure access to digital documents and government services	Widely used platforms integrated with many services

PMGDISHA	2017	• Digital literacy for rural citizens	• 4.7 crore+ people trained
PM Jan Dhan Yojana (PMJDY)	August 28, 2014	• Basic banking accounts- RuPay debit card- No minimum balance- Overdraft facility- DBT-enabled	• 50 crore+ accounts • Rs.2 lakh+ crore deposits • 56% women • 67% rural/ semi-urban • <8% zero-balance accounts
BHIM App	December 30, 2016	• UPI-based mobile payment app- Govt-supported	• 274.5M Android + 9.35M iOS downloads • 70.96M transactions worth Rs.11,621 crore (May 2025) • 500+ banks integrated
Unified Payments Interface (UPI)	April 11, 2016 (pilot)	• 24/7 instant money transfer- QR code support- Multi-bank access via one app	• 18.68B transactions worth Rs.25.14 trillion (May 2025) • 673 banks integrated • 83% share of digital payments in 2024.
AePS	2014	• Biometric-based banking using Aadhaar	• 2.5B+ transactions worth Rs.3.5 lakh crore (FY 2023–24) • 400+ participating banks
QR Code Payments (Bharat QR, UPI QR)	Post-2016 (scaled post-demo)	• Low-cost, contactless digital payments	• 657.9M active UPI QR codes (FY 2024–25) • QR placements up 126% in rural/semi-urban • 6.2M+ Bharat QR deployed
PM SVANidhi	June 1, 2020	• Micro-credit to street vendors- 3-tier loan system • Interest aid for timely repayment	• 6.8M+ vendors supported- Rs.14,316 crore loans sanctioned • 9.43M loans disbursed • 4.04M loans repaid

Source: Author Composition

Conclusion

India's Digital India Programme has emerged as a transformative initiative, revolutionizing the country's digital landscape and strengthening the foundation for inclusive development. Through platforms like UPI, BHIM, DigiLocker, and AePS, it has facilitated seamless access to government services, empowered citizens with secure and efficient digital payment systems, and fostered a robust digital infrastructure. With over a billion Aadhaar enrolments, hundreds of millions of internet users, and exponential growth in digital transactions, the programme has successfully bridged the urban-rural divide and enabled socio-economic empowerment through technology. Furthermore, public initiatives such as PMGDISHA and the expansion of Common Services Centres have fostered digital literacy and participation across all sections of society.

In synergy with the goals of Digital India, targeted financial inclusion schemes like the Pradhan Mantri Jan-DhanYojana (PMJDY) and PM SVANidhi have provided unbanked populations with vital access to banking, credit, insurance, and livelihood support. These efforts, alongside the promotion of QR-based payments and innovations like UPI and AePS, have helped bring formal financial systems to millions. As India embraces emerging technologies and scales its digital ecosystem further, the combined impact of these programmes will continue to fuel inclusive economic growth, deepen citizen engagement, and position India as a global leader in digital governance and financial innovation.

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UTTARAKHAND TOURISM: A VEHICLE FOR ECONOMIC DEVELOPMENT BY GROSS DOMESTIC PRODUCT CONTRIBUTION

Dr. Sukanta Sarkar

Associate Professor (Former), Department of Economics

Gambella University, Ethiopia

Email: sukantaeco@gmail.com

Dr. Suman Kalyan Chaudhury

Faculty Member, Department of Business Administration,

Berhampur University, Berhampur, Ganjam, Odisha

Email: sumankchaudhury@gmail.com

Dr Chandra Sekhar Pattnaik

Professor, Department of Management &

Principal, Omega P G College-MBA, Hyderabad

Email: cpattnaik8@gmail.com

Abstract

Tourism is said to be the largest source of employment and entrepreneurship, both directly and indirectly. Its volume of contribution to the Gross Domestic Product for any state makes a significant impact on the overall economic development of the said state. This paper is a discussion and deliberation on these aspects of the tourism in the state of Uttarakhand of India. This state is endowed with the scenic beauty of the Himalayas and the rivers originated from it. Uttarakhand is home to a number of spiritual sites, holy rivers, iconic temples, and hill stations. The present study has been conducted through the usage of regression statistics together with ANOVA and t-Test analysis. The impact of corona pandemic on the domestic and international tourist arrivals in Uttarakhand are the main factors behind the sudden drop of tourist arrivals to the state which used to make significant contribution to the GDP of the state. The study reveals that there is a significant relation between the tourist arrivals and its impact the GDP of Uttarakhand. There are also many challenges before this sector. Therefore, the government should implement proper policies for sustainable development of the tourism sector in the state.

Keywords: Economic Development. Gross Domestic Product, Tourism, and Tourism Dimensions.

Introduction

Tourism is an economic, cultural and social phenomenon where people move from their resident for business or personal purposes. Tourism has many dimensions, like, niche tourism, experiential tourism, ecotourism, heritage tourism, agricultural tourism, and religious tourism (Thakur et. al., 2018). Niche tourism focuses on a specific concept or topic, such as, sports, wildlife, war, food, etc. Wildlife safaris in Africa is the example of such tourism. Sustainable tourism is associated with the environment. It maintains ecological environment and biodiversity with the cultural dignity of the people (Sharma, 2015). Ecotourism help educate the travellers, conserve fund and directly benefit the local economy. Medical tourism is associate with the medical facilities and its expenditure. People move to places where medial cost is affordable to them. Experiential tourism is connected with the culture, people, food, and history of any place. Religious tourism is associated with the faith and belief (Sharma & Aggarwal, 2018).

Tourism industry is connected with the global economy. Such industry has multiple stakeholders. Political, social, economic, and environmental gains are important part of the industry (Kumar, 2018). It plays a vital role for the economic development of any place. It increases work opportunity for the local communities. It helps in increasing the educational values among the peoples (Kumar & Sharma, 2022). It also increases the scope of escapism. Expenditure on tourism sector development generates income for the government. It increases the foreign exchange earnings of the government (Kumar, 2013). Direct income and indirect income are generated from tourism and travel industry. Direct income is generated by imposing taxes on income created by tourism business and employment. Indirect income is generated by supplying goods and services to the tourists (Raina et. al, 2017).

Tourism increases social bond among the peoples. Exchange of knowledge, and information leads to new understanding among them. Local people often gain new sewage systems, bus services, new roads, new playgrounds, etc. as a result of tourism (Mann, 2017). It increases community spirit as people have disposable income. It empowers women and local traders. It is considered as a key driver for recovery of any economy and helps nature by conservation of places (Raj & Kumar, 2019).

Significance of the Study

In recent years' tourism sector has seen unprecedented changes, mainly, because of technological advances, multiple start-ups, innovative accommodation models, growing interest in wellness and adventure which have transformed the sector. In the Policy 2030 Tourism Document the State Tourism envisages. Considering the tourist destinations available and the ample opportunity foreseen, the selection of the state for the study on its tourism is justified. The support and the initiatives by the government give a positive vibration that it would be very much focussed on the development as aspects of the state and contribution to the states gross domestic product simultaneously creating a niche in the world tourism map and providing a wide range of employment and entrepreneurship opportunities. In this context, the present study is significant in throwing the light upon how Uttarakhand Tourism can be visualised as a vehicle for economic development with its Gross Domestic Product Contribution.

Objectives of the Study

The study has been conducted comprising of the objectives as stated here under:

- To study the trends of tourist in pre-and post-corona pandemic period in Uttarakhand.
- To study the trend of tourist arrivals at popular destinations of Uttarakhand.
- To examine the relationship between the tourist arrivals and their contribution to the gross domestic product of Uttarakhand, and
- To throw a light upon the prospects and challenges before the Uttarakhand Tourism.

Hypotheses of the Study

Based on the objectives as defined above, the hypotheses have been formulated below:

- 1) H₀₁: There is no impact of corona pandemic on the tourist arrivals in Uttarakhand.
H_{1a}: There is impact of corona pandemic on the tourist arrivals in Uttarakhand.
- 2) H₀₂: There are no variations in the registered home stay facilities in the districts of Uttarakhand.
H_{1b}: There are variations in the registered home stay facilities in the districts of Uttarakhand.
- 3) H₀₃: There are no variations in registered home stay facilities in rural and urban areas in Uttarakhand.

H_{1c}: There are variations in the registered home stay facilities in rural and urban areas in Uttarakhand.

- 4) H₀₄: There is no disparity in tourist arrivals at popular destinations of Uttarakhand.

H_{1d}: There is a disparity in tourist arrivals at popular destinations of Uttarakhand.

- 5) H₀₅: There is no impact of corona pandemic on tourist arrivals at popular destinations of Uttarakhand.

H_{1e}: There is impact of corona pandemic on tourist arrivals at popular destinations of Uttarakhand.

- 6) H₀₆: There is no relationship between tourist arrivals and the gross domestic product of Uttarakhand.

H_{1f}: There is relationship between tourist arrivals and the gross domestic product of Uttarakhand.

Materials and Methods

- **Study Area Description:** Uttarakhand is a state in India with a lot of religious significance. It is divided in Garhwal and Kumaon divisions. Seven of its districts come under the Garhwal division whereas the remaining five districts come under the Kumaon division. Almora district has the highest population, followed by Dehradun, and Nainital. Rudraprayag district has the least population preceded by Champawat, and Bageshwar. It is blessed with several adventurous spots, destinations, and most revered shrines. It shares international border with China, and Nepal. It has also national border with Uttar Pradesh, and Himachal Pradesh. Dehradun is the capital of Uttarakhand. Its total geographic area is of 53,566 km², of which 65 percent is covered with forest, and 86 percent is mountainous. The northern part of the state is covered with the high Himalayan glaciers and peaks.



- Design and Approach:** This study is descriptive in design and has utilized qualitative and quantitative approaches. Secondary data for the study has been collected from various govt. reports, report of international agencies, research papers, published or unpublished thesis's, articles, etc. Based on nature and type-wise major destinations in Uttarakhand, the domestic and international tourist arrivals have been analysed. The study, further corroborates the district-wise registered units under Home Stay scheme in Uttarakhand at District-wise Popular Tourist Places in Uttarakhand. The secondary data have been collected for as between 2011-12 to 2019-20 to find out the pattern and the Relation between Gross Domestic Product and Tourist Arrivals in Uttarakhand. The study has been conducted contemporary to The Uttarakhand Tourism Development Master Plan 2007–2022 and also during the implementation of the same. These could also have thrown insights to the making of The Uttarakhand Tourism Policy 2023-30 Document too.
- Method of Analysis:** Different methods of quantitative and qualitative analysis comprising of text analysis, regression analyses, descriptive analysis, and content analysis have been performed to reveal the tourism practices in general and the future prospects in particular.

Results and Discussion

The culture and language differ in Uttarakhand. The state has beautiful landscapes surrounded with river streams, snow clad peaks, and verdant hills. Popularity of village or rural tourism is increasing day by day. Visitors can learn about the local culture and customs of the local people. Several visitors prefer to visit during 'Uttraini Kautik'. Delicious foods, like as Kumaoni Raita, Chainsoo, Kandalee Ka Saag, Phaanu, Baadi, Garhwal Ka Fannah, Bhang Ki Chatney, Dubuk, and Kafuli are the additional attractions (Joveriya and Mariya, 2019).

Table 1: Type-wise Major Destinations in Uttarakhand

Types	Major Destinations
Rural Tourism	Almora, Bageshwar, Chakrata, Chamoli, Deora, Pallyu, Mana. Shaukiyathal, and Tehri.
Health & Rejuvenation	Almora, Champawat, Haridwar, Jageshwar, Nainital, Ramgarh, Pithoragarh, and Rishikesh.
Sightseeing	Almora, Auli, Mussourie, Nainital, and Valley of Flowers.

Nature & Wildlife	Benog Wildlife Sanctuary, Binsar Wildlife Sanctuary, Govind Wildlife Sanctuary, Jim Corbett National Park, Kedarnath Musk Deer Sanctuary, Neel Dhara Pakshi Vihar, Nanda Devi National Park, and Rajaji National Park.
Adventure & Water sports	Auli, Dhanaulti, Jharipani, Maldevta, Shri Hemkund Sahib, Tons Valley, and Tehri Rishikesh.
Pilgrimage and Festivals	Bairnath, Badrinath, Nanda Devi, Piran Kaliyar, Jageshwar, Haridwar, Kedarnath, Rishikesh, Gangotri, and Yamunotri.

Source: Joveriya and Mariya (2019). Problems and prospects of tourism industry in Uttarakhand, International Journal of Geography, Geology and Environment, 1(1): 12.

Table-1 discussed the geographic and demographic profile of Uttarakhand. Uttarakhand known as "Devbhumi" is blessed with the natural beauty of Himalayas. It has diversity in flora and fauna. The native people of the state are Kumaoni, and Garhwali. Badarinarayana Temple is dedicated to Lord Vishnu. It is opened for six months in a year. The temple is mentioned in Skanda Purana, and Vishnu Purana. Kedarnath Temple is dedicated to Lord Shiva. The temple opens between the months of April and November. Nanda Devi and Valley of Flowers have been included in UNESCO World Heritage Site (Jaiswal and Bisht, 2017).

The Valley of Flowers, Hemkund Sahib, and Badrinath are situated in Chamoli district. There are a number of lakes in the state. Bhimtal, Deoria Tal, Kedar Tal, Satopanth Lake, Naini Lake, Nachiketa Tal, Dodi Tal, and Shyamla Tal are the popular lakes. Bhim Tal is surrounded with farm houses, fields, and orchards. Deoria Tal is situated near Ukhimath. Kedar Tal is situated near Gangotri. It is surrounded with skies and snow-capped mountains. Satopanth Lake has a religious significant. People believe that Brahma, Vishnu, and Mahesh have occupied each corner of the lake. Naini Lake is the largest freshwater lake and spreads over a distance of 3.5 kilometers. It is surrounded with forests, tall mountains, and rocks. Naina Devi temple is situated on its shore, is one the of 51 Shakti Peeths of India. Nachiketa Tal is situated in Uttarkashi, and is absolutely stunned with its scenery. Dodi Tal is also located in Uttarkashi. It is near the Asi Ganga that merges into the Bhagirathi near Gangotri. Shyamla Tal is spread over a nearly 1.5 square kilometre (Negi,2019).

Uttarakhand has many hidden spiritual caves. They are both man-made and natural caves. These caves are known as the jewels for tourism, and have the potentially to attract tourist. Budher Caves, Eco Cave Gardens, Ganesha Cave, Gauri Udiyar Cave, Gorcha Caves, Guchhu Pani/ Robbers Cave, Mahavatar Babaji Cave, Patal Bhuvaneshwar, Patal Rudreshwar, Timmersain Mahadev, Vashistha Cave, and Vyas Cave are the popular caves. Patal Bhuvaneshwar Cave is situated in Pithoragarh District of the Kumaon Region. It is 160-meter-

long and 90 feet deep. Lakhudiyar Cave is located in Barechhina Village of Almora District. Vyas Cave is located in Chamoli district, and situated near the famous Badrinath shrine. Robber Cave is located near Anarwala Village, Dehradun. Rai cave situated in Pithoragarh, has a Shiva temple inside it. Jhilmil cave is situated in Rishikesh. Many of the caves on the state have spiritual beliefs.

Table 2: Domestic and International Tourist Arrivals in Uttarakhand

Year	Tourist Visits		Percentage Share		Rank	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
2010	30206030	127258	4.1	0.70	7	16
2011	25946254	124653	3.05	0.64	8	17
2012	26827329	124555	2.59	0.60	8	17
2013	19941128	97683	1.74	0.49	15	17
2014	21991315	101966	1.70	0.45	16	17
2015	29496938	105882	2.06	0.45	12	20
2016	30505363	117106	1.89	0.47	13	20
2017	34359989	133725	2.08	0.50	12	19
2018	35609650	151320	1.92	0.52	12	18
2019	37585920	152273	1.62	0.48	12	19
2020	7005264	41339	1.15	0.58	13	18
2021	19434475	8532	2.87	0.81	12	15
2022	54642600	61600	3.16	0.72	-	-

Source: Prepared by authors from Reports of India Tourism Statistics (2011-2023)

Table-2 discussed the tourist arrivals in Uttarakhand. It has been found that the number of tourists are increasing constantly since 2010, with an exception in 2020 which declined due to the corona pandemic. Domestic tourist arrival was more than 3.7 crores in 2019, which dropped to only 70.05 lakhs in 2020. On the other hand, foreign tourist arrivals were 1.52 lakhs in 2019, and it was just 41.33 thousand in 2020 for the pandemic. Lockdowns, and travelling restriction due to the corona pandemic were the main factors behind the sudden drop of tourist arrivals. Therefore, *the null hypothesis-1 (H_{01}) is rejected and alternative hypothesis is accepted*, i.e. there was an impact of corona pandemic on the domestic and international tourist arrivals in Uttarakhand.

Uttarakhand has long mountain ranges, and amazing hill stations. Tourists can involve in many activities like as paragliding, trekking, horse riding, sky walking, valley crossing camping, café hopping, stargazing, mountain biking, golfing, fishing, rafting, bird watching,

boating in lake etc. Mussoorie, Nainital, Lansdowne, Kausani, Auli, Dehradun, Dhanaulti, Almora, Ranikhet, Abbott Mount, Bhowali, Munsiyari, Bhimtal, and Pauri are the popular hill stations. Majority of the hill stations are covered with snow from December to mid-February. Mussoorie is situated in the Garhwal Himalayan ranges. It is called as ‘Queen of Hills’. Doon Valley and Shivalik ranges can be directly viewed from the town. Lal Tibba, Sir George Everest House, Landour Clock Tour, Library Point, Gun Hills, and Kempty Falls are the popular tourist places in Mussoorie. Nainital is known as the lake city of India. It is situated in Kumaon. It is covered with beautiful blooming flowers, stunning landscapes, and majestic lakes like the Naini Lake. Naina Devi Temple, Naini Lake, Nainital Zoo, Raj Bhawan, Tiffin Top, and Hanuman Garh which are the most visited tourist places in the town. Lansdowne is situated in Pauri Garhwal district. It is also called ‘Home of the Garhwal Rifles’. Sanghralaya, Darwan Singh, and Bhullatal lake are the popular places of Lansdowne.

Kausani is a beautiful hill station situated in Bageshwar district. It is called the 'Switzerland of India'. From the town tourists can observe the spectacular panoramic view of the Himalayan peaks like Nanda Devi, Panchachuli, and Trishul. Someshwar Valley, Sumitranandan Pant Museum, Kausani Shawl Factory, and Kausani Tea Estate are the other popular places. Auli is popular for its snowy slopes, and ski resorts. It is situated in Chamoli district. Chenab, and Chatrakund are the popular man-made lake situated in Auli. Dehradun is the capital of Uttarakhand, and situated in Doon Valley. Robber's Cave, Malsi Deer Park, Mindrolling Monastery, Forest Research Institute, Khalanga War Memorial, and Tapovan are the popular places of this city. Dhanaulti is popular for the panoramic views of the lofty Himalayas. It is situated in Tehri Garhwal. Surkanda Devi temple, Dashavatar temple, Barehipani & Joranda Falls, Deogarh Fort, and Aloo Khet are the popular places of Dhanaulti.

Table 3: District-wise registered units under Home Stay scheme in Uttarakhand, 2022

District	Urban Area			Rural Area		
	Registered units	Beds	Seats	Registered units	Beds	Seats
Haridwar	12	118	59	1	6	3
Nainital	39	260	136	110	708	366
Uttarkashi	6	44	22	54	432	216
Bageshwar	1	10	5	28	180	103
Tehri Garhwal	2	16	8	103	1055	461
Pauri Garhwal	0	0	0	21	138	69

Dehradun	182	1924	924	29	254	127
Pithoragarh	0	0	0	141	773	327
Chamoli Garhwal	15	140	65	111	731	350
Udham S.Nagar	2	20	10	0	0	0
Almora	3	18	10	100	716	356
Rudraprayag	3	20	10	54	294	148
TOTAL	265	2570	1249	752	5287	2526

Source: Department of Tourism, Govt. of Uttarakhand.

Table-3 discusses the district-wise details of Home Stay facilities in Uttarakhand. It has been found that home stay facilities in the districts are not the same everywhere. Dehradun, Nainital, Chamoli Garhwal, Almora, and Tehri Garhwal have more home stay facilities than the other districts. Therefore, *null hypothesis-2 is rejected, and alternative hypothesis is accepted*. It means that there are variations in registered home stay facilities in districts of Uttarakhand. It has also been observed that the registered units, seats, and beds in the rural areas are higher than the urban areas. Dehradun has the highest number of urban home-stay facilities, followed by Nainital. Home stay facilities are absent in the urban areas of Pithoragarh, and Pauri Garhwal districts. The registered home stay units, seats, and beds in urban areas are 265, 1249, and 2570, and in rural areas these are 752, 2526, and 5287 respectively. Therefore, there are variations in registered home stay facilities in rural and urban areas in Uttarakhand. So, *null hypothesis-3 is rejected, and alternative hypothesis is accepted*

The city of Almora is situated in the southern edge of the Kumaon Hills of the Himalaya range in Almora district. Jageshwar, Zero Point, Bright End Corner, Chitai Golu Devta Temple, Kasar Devi Temple, and Nanda Devi Temple are some of the other popular places of the city which is situated 1,642 meters above sea-level. Ranikhet is situated in Almora district. It is famous for its apple orchards, and natural beauty. It is situated 1,869 meters above sea level. Dunagiri Temple, Haidakhan Temple, Upat Kalika Temple, Jhula Devi Temple, Bhula Dam, and Upat Golf Course are the popular tourist attractions of the town. Abbott Mount hills-station is situated in Champawat district. It is around 1,981 m above sea level. Lohaghat, Advait Ashram, Mukri Kothri, and Abbott Mount Church are the other popular tourist attractions of the town. Bhowali is a natural paradise for tourists and located in Nainital district. It is situated 1,654 meters above the sea level. Prachin, Shyamkhet Tea Garden, Dorothy's Seat, and Jabar Mahadev Shiv Temple are some of the other popular places of it.

Munsiyari situated in Pithoragarh district, called as 'Little Kashmir' is situated 2,200 meters above the sea level. Thamari Kund, Khaliya Top, Kalamuni Top, and Birthi Falls are

the other popular places. Bhimtal is known for its pristine lakes. It is situated in Nainital district is 1,370 meters above the sea level. Hanuman Garhi, Aquarium on Bhimtal Island, and Bhimtal Lake are the major tourist attractions. Pauri is situated in Pauri Garhwal district. It is located 1,765 meters above sea level. It offers the scenic views of Neelkanth peaks, Trishul, Bandarpunch, Sumeru, Kedarnath, Jogin Group, and Gangotri Group. Ransi Stadium, Chaukhamba viewpoint, Kandoliya temple, Kyunkaleshwar Mahadev temple, and Nagdev Temple are the other popular places of it.

Table 4: Popular Tourist Destinations in Uttarakhand

Place	2016	2017	2018	2019	2020	2021
Dehradun	1807383	2146489	2484289	2905303	593467	2867782
Rishikesh	592227	678041	662118	863886	171718	292806
Massoore	2794108	2795973	2872025	3023839	1016337	1229808
Kedarnath	309764	471235	731991	1000021	135349	243012
Badrinath	654355	920466	1048051	1244993	155055	199409
Gangotri	285459	408738	447838	530334	23774	33771
Yamunotri	155129	392208	394445	465534	7728	33311
Haridwar	20508097	21009098	21577583	21770232	4021831	12718441
Almora	106006	112702	118342	128674	19201	38198
Raniketh	139310	146747	149895	152584	20206	54265
Pithoragarh	171851	243688	154385	209651	46332	53506
Champawat	89478	149071	188916	210713	47310	15711
Nainital	873395	918652	933657	933906	215749	326259
Kathgodam	151124	151202	151965	152965	37540	108109

Source: Department of Tourism, Govt. of Uttarakhand

Table-4 discusses the popular tourist destinations of Uttarakhand. It has been found that the largest number of tourists visit Haridwar, followed by Massoore, and Dehradun while a few tourists visit Champawat, preceded by Kathgodam. Therefore, there is a disparity in tourist arrivals at popular destinations of Uttarakhand. *So, null hypothesis-4 is rejected, and alternative hypothesis is accepted.* It has also been observed that the number of tourist arrivals at popular destinations had declined in 2020 due to the corona pandemic. Though the tourist arrival in Dehradun in 2019 was 29.05 lakhs it dropped to 5.93 lakhs in 2020 respectively. The number of tourists in Rishikesh, and Massoore was respectively 8.63 lakhs, and 30.23 lakhs in 2019, but was respectively 1.71 lakhs, and 10.16 lakhs in 2020. The number of tourist in Kedarnath, and Badrinath were 10 lakhs, and 12.44 lakhs in 2019, but it came down to 1.35

lakhs, and 1.55 lakhs in 2020 respectively. The same trends were observed in the other major tourist hubs of the state. Therefore, there are impacts of corona pandemic on tourist arrivals in popular destinations of Uttarakhand. *So, null hypothesis-5 is rejected, and alternative hypothesis is accepted.*

The Ganga, Yamuna, Alaknanda, Bhagirathi, Ramganga, Kali, Bhilangna, Saraswati, Gaula, Gori Ganga, Kosi, Mandakini, Nandakini, Pindari, and Saryu are the popular rivers of the state that originates from the Himalayas. As per Hindu mythology the Ganges is holiest among all the rivers of the country. It originates at Gomukh in Gangotri while the Yamuna originates from the Yamuna glacier. The Alaknanda plays an important role in the formation of river Ganges. Bhagirathi river flows through the Gangotri glacier trek. Ramganga river originates from the lower Himalayas of Garhwal while River Kali called as Mahakali river, flows through Pithoragarh district. Bhilangna river originates from the foot of the Khatling Glacier and Gaula river originates from Sattal lakes near Paharpani. It passes through Haldwani, Kathgodam, and Shahi. Kosi river originates at Dharpani Dhar. It passes through the towns, like Amdana, Bujan, Betal Gha, and Ramnagar and Mandakini river passes through Rudrapur, Kedarnath, Ukhimath, and Sonprayag. Nandakini river originates from the Nanda Ghunghati glacier, and eventually merges with the holy Alaknanda. Pindari river originates from the Pindari glaciers and crosses many tiny hamlets like Tharli, Kulsari, Bhagoli, and Nauti.

Uttarakhand is full of exquisite flora, and fauna. The Jim Corbett National Park, Rajaji National Park, Valley of Flowers National Park, Nanda Devi National Park, Gangotri National Park, and Govind Pashu Vihar National Park are the popular national parks of the state. The Jim Corbett National Park is the oldest national park and is situated in Nainital District. The Valley of Flowers National Park and the NDNP are situated in Chamoli District. The Gangotri National Park is the largest national park which is situated in the Post Taknaur Range, Uttarkashi. The Govind Pashu Vihar National Park & Sanctuary is famous for its beautiful nature and lush green zones. It is situated in Supin Range, Uttarakhand (Dangi, 2018).

Table 5: District-wise Popular Tourist Places in Uttarakhand

District	Popular Places
Almora	Gairad Golu Dev Temple, Nanda Devi Mandir, Banri Devi Temple, Katarmal Sun Temple, Gana Nath Temple, Binsar Mahadev Temple, Jageshwar Dham Temples, Jhoola Devi Temple, Chitai Golu Temple, and Kasar Devi.
Bageshwar	Kanda, Kausani, and Baijnath.

Chamoli	Badrinath, Adbadri, Yogdhyan Badri Temple, Rudranath Temple, Auli, Bhavishya Badri, Gopeshwar, Hemkund Sahib, and Vasu Dhara.
Dehradun	Dehradun city, Chakrata, Mussoorie, and Rishikesh.
Haridwar	Har ki Pauri, Chandi Devi Temple, Rajaji National Park, Mansa Devi Temple, Sureshwari Devi Temple, and Piran Kaliyar.
Nainital	Naina peak, Kilbury, Bhowali, Bhimtal, Sattal, Kaichi Dham, and Naukuchiatal.
Pauri Garhwal	Kandoliya Temple, Kyunkaleshwar Temple, Nagdev Temple, Binsar Mahadev Temple, Jwalpa Devi Temple, Dhari Devi Temple, Neelkanth Mahadev Temple, Shri Koteswar Mahadev Temple, and Tarkeshwar Mahadev Temple.
Pithoragarh	Aadi Kailashis, Om Parvat, Chandak, Patal Bhubaneshwar, Jhulaghat, Narayan Ashram, Thal Kedar, and Naini Saini Airport.
Rudra Prayag	Ukhimath, Chopta, and Guptkashi.
Tehri Garhwal	Devprayag, Dhanaulti, Kunjapuri, New Tehri, and Surkanda peak.
Udam S.Nagar	Drona Sagar, Atariya temple, Chaiti Devi, Lake Paradise, and Girital.

Source: Websites of districts of Uttarakhand

Table-5 depicts the district-wise popular tourist places in Uttarakhand. It has been found that these tourist places are scattered all over in various districts of the state. Uttarakhand is renowned for its pilgrimage site, and religious environment. It is home to a people of diverse tribal communities, ethnic groups, and immigrants. The People of the state speak many languages like Kumaoni, Garhwali, Bhotia, and Hindi, celebrate several festivals like Makar Sankranti (Ghughutia), Kumaon Holi, Janopunya, Kandali, Chhipla Jaat, Ghuian Ekadashi, Khatarua, Olgia or Ghee Sankranti, Dikar Puja, Ganga Dusshera or Dasar, Batsavitri, Phool Dei, Harela, Bhिताली, and Basant Panchami, Kumbh Mela is the most popular festival. People take a deep in the Ganga during this festival as it redeems them of their sin. It is a three-month lengthy festival. Basant Panchami is celebrated in the month of January/ February. Kumaon community celebrate Harela festival. This festival is also known as Bhिताली. Nanda Devi Fair (goddesses Sunanda, and Nanda) held every year in Kichha, Bhowali, Ranikhet, Munsyari, Dandidhara, Nauti, Nainital, and Almora.

Table 6: Relation between Gross Domestic Product and Tourist Arrivals in Uttarakhand

Year	Tourist Arrivals	Gross Domestic Product*
2011-12	26070907	115,328
2012-13	26951884	131,613
2013-14	20038811	149,074
2014-15	22093281	161,439

2015-16	29602820	177,163
2016-17	30622469	195,125
2017-18	34493714	219,954
2018-19	35760970	236,768
2019-20	37738193	253,666

Source: <https://statisticstimes.com/>; Note: * in crores (INR); Note: Pre-Corona pandemic analysis.

Table: 6 (a) Summary Output

<i>Regression Statistics</i>	
Multiple R	0.843181734
R Square	0.710955437
Adjusted R Square	0.669663356
Standard Error	27460.51534
Observations	9

Source: Calculated by the authors.

Table 6 (b): ANOVA Analysis

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1.3E+10	1.3E+10	17.21772	0.00429819
Residual	7	5.28E+09	7.54E+08		
Total	8	1.83E+10			

Source: Calculated by the authors.

<i>Standard</i>				
	<i>Coefficients</i>	<i>Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-11772.26114	47643.2109	-0.247092102	0.811927
Tourist Arrivals	0.006629685	0.001597736	4.149423929	0.004298

Source: Calculated by the authors.

The table 6(a) shows R Square value is 0.710955437. It means there is relationship between number of tourist and gross state domestic product in Uttarkhand. Table (6-b) shows that p value (0.0042) is lower than critical value at 5% level of significance ($p > 0.05$), therefore we will reject the null hypothesis-8. Hence, it can be concluded that there is a relationship between the tourist arrivals and the gross domestic product of Uttarakhand. Tourism sector is a growing sector in Uttarakhand. It has contributed more to the economy of the state. To discuss the future prospects and challenges before this sector of Uttarakhand, the SWOC analysis has been performed below.

Tourism sector is a growing sector in Uttarakhand. It has contributed more in the economy of the state. For discussing the future prospects and challenge of tourism sector of Uttarakhand, we have done the SWOC analysis.

Strengths	Weaknesses
➤ Potential to attract tourist inflow ➤ Tourist hill- stations ➤ Salubrious and pollution free environment ➤ Rich history and heritage ➤ Politically and socially stable state ➤ Hospitable people ➤ Scenic beauty of the nature	➤ Geographical isolation ➤ Inadequacy of marketing ➤ Lack of transport facilities ➤ Lack of adequate infrastructural support ➤ Lack of trained tourist guides ➤ Inadequacy of information channels ➤ Inaccessible, especially in winter
Opportunities	Challenges
➤ Unexplored regions ➤ Eco- tourism is gaining popularity ➤ Adventure sports and trekking. ➤ Increased disposable incomes of people	➤ Environmental factors ➤ Balancing culture & religious issues ➤ Safety & security of visitors ➤ Extreme weather conditions ➤ Accommodation & means of Transport for all strata of tourist at all weather conditions

Limitations of the Study

Any study cannot be taken as complete and perfect in all aspects as there will be limitations while actually undertaking that study. The current study is not an exception as it has the following limitations.

- The study is confined to the newly formed 27th State of India which was a part of present Uttar Pradesh.
- The Period of the study is from 2011-12 to 2019-20 and the pattern in many no way be prospective for the years to come or may not be effects from the prior study years.
- The secondary data have been taken as available from the sources cited. There may have been misrepresentation or inadequate compilation of the data at the sources itself. Further certain data have not been available too.

- There might be some places of tourist interest left unnoticed because of unknown reasons.
- Due to the unavailability of proper transport or infrastructure or even accommodation facilities the study or the data might have got affected.

Scope for Further Study

During the study and at the time of discussion, the authors have felt that the study can also throw light on the future dimensions to take the study further for better results. Some of the recommended scopes for further studies are outlined hereunder:

- The study is confined to Uttarakhand state only. It can be extended to other states in these lines as well.
- Further, the duration of the study can be increased to have better insights.
- The sources of data other than the one used for the secondary sources can be more explored.
- Other places of interest if any left unnoticed can be traced out and efforts can be made to study to bring to limelight.
- A comparative study can be made about the various aspects undivided Uttar Pradesh and the newly formed Uttarakhand State.
- A study can also be conducted on the problems and prospectus of digital access to the state.
- An interim performance review study can be made based on the State Tourism Visionary Policy Document 2030.
- An assessment study can also be done about the accomplishment of the Uttarakhand Tourism Development Master Plan 2007–2022 after the completion of the defined time period and before the implementation of the Uttarakhand Tourism Policy 2023-30 documents.

Conclusion

Uttarakhand has ample opportunities to grow and contribute substantially to the bottom line of the Gross Domestic Product of the state. Some of the dimensions of tourism like spiritual tourism proximity is of the unique nature because of its close proximity to the Himalayan Mountain Ranges because of their close to Hindu myth and religion. Locations like Dehradun, Nainital, Chamoli Garhwal, Almora, and Tehri Garhwal have more home stay facilities than

the other districts. Uttarakhand is renowned for pilgrimage site, and religious environment. It is a home to diverse tribal communities, ethnic groups, and immigrants. The impact of corona pandemic on tourist arrivals at popular destinations if the state was quite immense. However, it puts a lot of challenges before the state to move forward. Some of the prominent illustrative challenges before the sector can be the environmental factors, balancing culture and religious issues, facilities being provided by other states, the safety & security of visitor's extreme weather conditions, available and affordable accommodation & means of transport for all strata of tourists in all weather conditions, fair implementation of government Ppolices. Additionally, if the international tourists are taken care of then, it would also contribute significantly to the earning of the Foreign Exchanges simultaneously contributing to the Gross Domestic Product of the nation at large.

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ASSESSING THE ROLE OF DIGITAL INFRASTRUCTURE AND INNOVATION ECOSYSTEMS IN DRIVING INCLUSIVE ECONOMIC GROWTH IN INDIA

Dr. J. Suresh Kumar

Associate Professor, Department of Economics
St. Joseph University, Chümoukedima, Nagaland, India
Email: drjsuresheco@gmail.com

Dr. D. Shobana

Assistant Professor, Department of Management Studies
St. Joseph University, Chümoukedima, Nagaland, India
Email: shobanasju@gmail.com

Abstract

India's transition into a digital economy has accelerated in recent years, driven by large-scale initiatives like Digital India, Startup India, and the rapid proliferation of digital public infrastructure. This study seeks to assess the role of digital infrastructure and innovation ecosystems in promoting inclusive economic growth across diverse regions of India, including the often-overlooked Northeast. It explores how digital tools and services such as broadband connectivity, digital payments, and e-governance platforms enhance access to markets, services, and employment, particularly for marginalized populations. The research further analyzes how innovation ecosystems comprising tech startups, incubators, academic-industry collaborations, and government policies foster entrepreneurship, job creation, and productivity. By integrating secondary data with case studies from rural and urban contexts, the study aims to evaluate regional disparities, identify systemic challenges, and recommend policy interventions to ensure that digital transformation contributes to equitable development. The findings highlight the critical need for targeted investments in digital literacy, last-mile connectivity, and ecosystem strengthening to unlock the full potential of the digital economy in driving inclusive growth.

Keywords: Digital Economy, Digital Infrastructure, Innovation Ecosystem, Inclusive Growth, Digital Public Goods, Startups, Regional Disparities and Policy Interventions

Introduction

India stands at a pivotal moment in its economic development journey, where digital transformation is rapidly reshaping traditional economic structures. The emergence of a robust digital infrastructure, propelled by initiatives such as Digital India, BharatNet, and the Unified Payments Interface (UPI), has laid the groundwork for a more connected, transparent, and efficient economy (Mehta & Sundararajan, 2020). Simultaneously, a growing innovation ecosystem comprising startups, incubators, research institutions, and policy support has become a key driver in enhancing productivity, creating employment, and fostering inclusive growth (NITI Aayog, 2021).

The digital economy contributes significantly to India's GDP, employment, and entrepreneurial dynamism. According to the Reserve Bank of India (2023), digital payments alone have grown over 50% annually in recent years, enabling financial inclusion across rural and urban divides. Startups and innovation hubs have proliferated, especially in Tier 2 and Tier 3 cities, reflecting the decentralization of innovation beyond metropolitan centres (Startup India, 2022). However, this digital transformation is uneven. Many regions, particularly in Northeast India and other remote areas, still struggle with inadequate connectivity, low digital literacy, and limited institutional support for innovation (Das & Gogoi, 2022).

Inclusive economic growth entails not only expanding the overall size of the economy but ensuring that its benefits reach marginalized communities, small entrepreneurs, women, and rural populations. In this context, digital infrastructure and innovation ecosystems serve as catalysts by democratizing access to resources, enabling scalable solutions to local problems, and bridging urban-rural divides (World Bank, 2020). Yet, the interplay between digital tools, innovation networks, and equitable economic outcomes remains under-explored, especially from a regional and sectoral perspective.

This study aims to assess the extent to which digital infrastructure and innovation ecosystems contribute to inclusive economic growth in India. It will examine key enablers, regional disparities, and institutional frameworks, while offering evidence-based policy recommendations to ensure that digital transformation serves as a force for equity, not exclusion.

Literature Review

The digital economy is increasingly recognized as a transformative force in driving inclusive economic growth, especially in developing countries like India. Scholars and policy analysts have examined the interrelationship between digital infrastructure, innovation ecosystems, and inclusive development across diverse regional and socio-economic contexts.

The expansion of digital infrastructure broadband networks, mobile connectivity, and digital payment systems has been widely acknowledged as a catalyst for inclusive economic development. According to the World Bank (2020), investments in digital infrastructure can enhance productivity, lower transaction costs, and improve access to services for underserved populations. In India, the Digital India initiative has significantly expanded internet penetration, mobile connectivity, and digital services, particularly through platforms such as Aadhaar, BharatNet, and UPI (Mehta & Sundararajan, 2020).

Research by Gupta and Sinha (2021) highlights the role of digital financial services in promoting financial inclusion among rural and low-income populations. Their findings suggest that increased digital access correlates with higher levels of participation in formal banking and credit systems. However, they also note persistent gaps in digital literacy, affordability, and device accessibility, especially in remote regions such as Northeast India.

India's innovation landscape has undergone a paradigm shift in recent years, characterized by the proliferation of startups, incubators, and public-private partnerships. The NITI Aayog (2021) emphasizes the importance of digital public infrastructure, including open APIs and platforms like India Stack, in fostering innovation and reducing entry barriers for new enterprises. Innovation hubs in cities like Bengaluru, Hyderabad, and Pune have contributed significantly to job creation and technological advancement.

Saxena (2019) argues that innovation ecosystems are crucial for inclusive growth when they are aligned with grassroots needs and enable micro, small, and medium enterprises (MSMEs) to leverage technology. The expansion of Tier 2 and Tier 3 innovation centres through schemes such as Atal Innovation Mission reflects an encouraging trend toward geographic decentralization of innovation (Startup India, 2022).

Despite national-level progress, considerable regional disparities persist. Das and Gogoi (2022) point out that the Northeast region remains marginalized in terms of both digital infrastructure

and innovation-related investments. Issues such as difficult terrain, limited broadband penetration, and weak institutional support hinder the region's integration into India's digital economy.

Similarly, Khera (2020) emphasizes the exclusionary effects of digital policies that do not consider ground realities, such as language barriers, lack of local content, and gendered access to technology. These gaps raise critical questions about whether digital transformation is truly inclusive or whether it risks reinforcing existing inequalities.

The Indian government has taken multiple policy measures to bridge these gaps, including the National Digital Communications Policy (2018), Startup India, and Digital Northeast Vision 2022. These frameworks aim to promote digital equity, support innovation ecosystems, and facilitate last-mile connectivity (Ministry of Electronics and IT, 2022). However, the effectiveness of these interventions depends on their implementation and the capacity of regional institutions to deliver results.

Bhandari and Sharma (2021) suggest that multi-stakeholder collaboration among government bodies, private sector, academia, and civil society is essential for building resilient digital ecosystems that drive inclusive growth. Their analysis of successful models in states like Kerala and Karnataka underscores the importance of coordinated policy and adaptive governance.

The existing literature demonstrates that while digital infrastructure and innovation ecosystems have immense potential to foster inclusive economic growth in India, this potential remains unevenly realized. Regional disparities, infrastructural deficits, and socio-economic inequalities continue to challenge equitable access to the benefits of digital transformation. A more nuanced and localized policy approach especially targeting underdeveloped regions such as Northeast India is essential to ensure that digital progress translates into inclusive development.

Objective of the Study

- To evaluate the impact of digital infrastructure on economic development in India.
- To analyze the role of tech-based startups and digital entrepreneurship in fostering innovation in India.

- To examine the regional disparities in digital access and innovation adoption in India.
- To study government initiatives in promoting a digital and innovative economy.
- To explore how digital innovation influences employment generation, productivity, and service delivery in India.

Research Methodology

This study adopts a descriptive research methodology to examine the role of digital infrastructure and innovation ecosystems in promoting inclusive economic growth in India. The approach involves collecting secondary data from government reports, academic journals, policy documents, and credible online databases. Descriptive analysis enables a systematic understanding of current trends, initiatives, and outcomes related to digital transformation across various sectors. The study focuses on identifying patterns, relationships, and disparities in access and impact, particularly between urban and rural regions. Qualitative insights are drawn from case studies of government programs like Digital India and Startup India. The methodology aims to provide a comprehensive overview of how digital innovation influences employment, productivity, and service delivery, while highlighting barriers to inclusion and policy implications.

Result and Discussion

The findings reveal that digital infrastructure and innovation ecosystems have significantly enhanced economic participation, especially through improved service delivery and employment generation in urban and semi-urban areas. Initiatives like Digital India and Startup India have fostered entrepreneurial growth and digital inclusion. However, disparities persist due to limited digital literacy, inadequate rural connectivity, and regional imbalances. The discussion highlights the need for targeted policies that bridge the digital divide, promote skill development, and ensure equitable access to technological advancements across all social groups.

The Impact of Digital India, UPI, and BharatNet on Economic Development in India

India's digital transformation strategy, spearheaded by flagship initiatives like Digital India, Unified Payments Interface (UPI), and BharatNet, has fundamentally reshaped the country's

economic landscape. These interventions collectively aim to bridge the digital divide, enhance service delivery, promote financial inclusion, and enable inclusive growth.

1. Digital India: Driving E-Governance and Digital Access

Launched in 2015, the Digital India program seeks to transform India into a digitally empowered society and knowledge economy. Its three core vision areas digital infrastructure as a utility to every citizen, governance and services on demand, and digital empowerment have laid the groundwork for digital-led development.

- **Improved service delivery:** Online platforms for services like Aadhaar, DigiLocker, and e-Hospital have increased public sector efficiency (MeitY, 2022).
- **Entrepreneurship boost:** Digital India facilitated a surge in tech startups, MSMEs, and gig economy employment (NITI Aayog, 2021).
- **Human capital development:** Through programs like PMGDISHA, digital literacy has expanded among rural and underprivileged populations.

2. UPI: Revolutionizing Financial Transactions

The Unified Payments Interface (UPI), developed by the National Payments Corporation of India (NPCI), has emerged as a game-changer in India's fintech revolution. It enables real-time, interoperable, and low-cost peer-to-peer and merchant transactions via smartphones.

- **Financial inclusion:** UPI has brought millions into the formal financial system, including rural users and informal sector workers (RBI, 2023).
- **MSME and gig economy support:** Digital payments have improved access to finance, reduced cash reliance, and enhanced market linkages for small businesses.
- **Digital trust and transparency:** UPI fosters a more accountable and traceable financial ecosystem.

3. BharatNet: Bridging the Rural-Urban Digital Divide

BharatNet, formerly known as the National Optical Fibre Network, is a government initiative aimed at providing high-speed broadband to over 250,000 Gram Panchayats across India.

- **Rural connectivity:** It has enhanced last-mile connectivity in villages, enabling access to digital services like telemedicine, e-learning, and e-commerce (TRAI, 2022).
- **Boost to local economies:** Internet access has empowered rural entrepreneurs and farmers through information access, digital payments, and online marketplaces.
- **Support for decentralized innovation:** Local innovation centers and CSCs (Common Service Centres) rely on BharatNet to deliver services and generate employment.

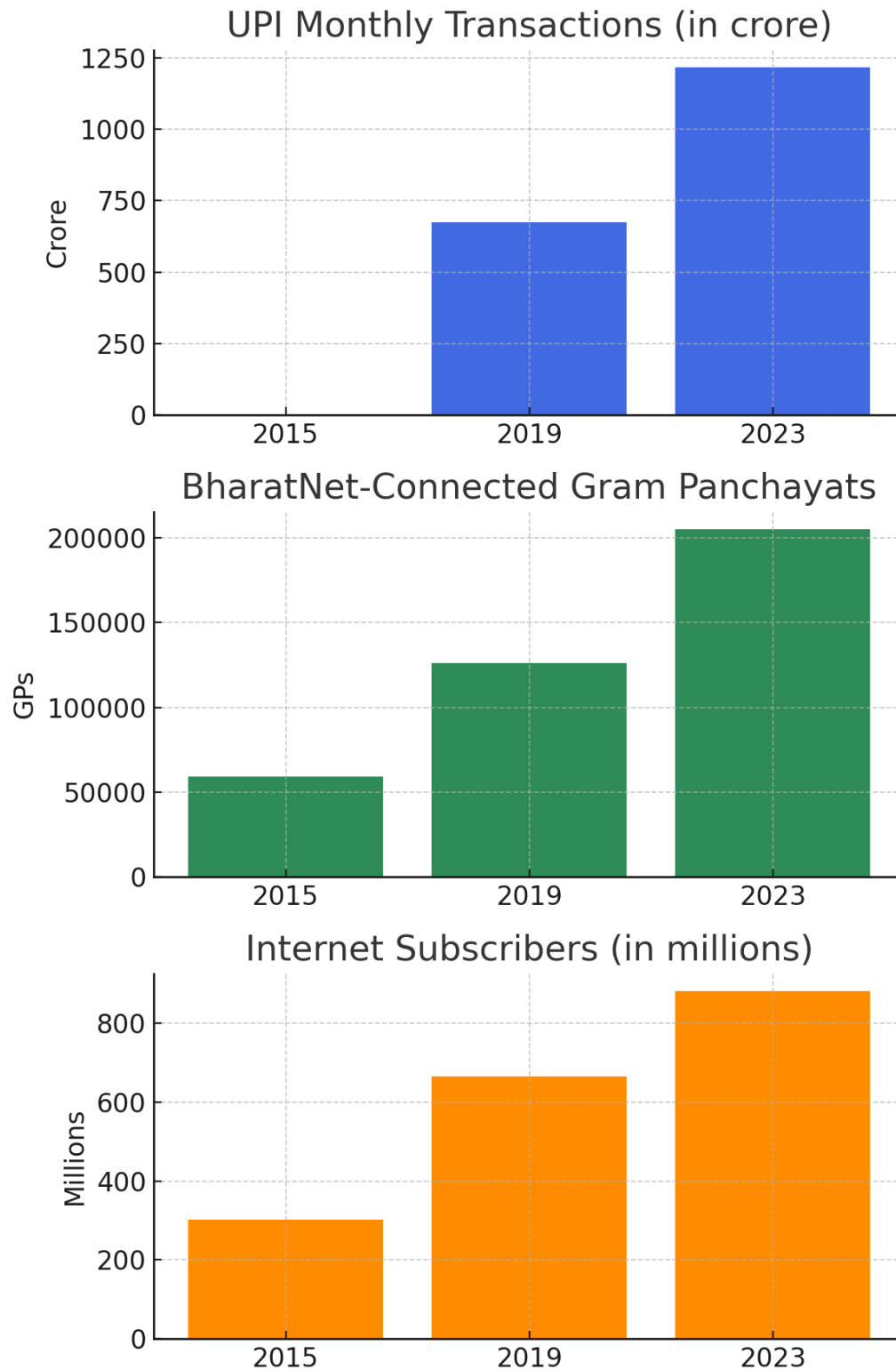
Digital India, UPI, and BharatNet are not isolated initiatives but interconnected pillars driving India's comprehensive digital growth strategy. Together, they have significantly contributed to economic development by enhancing productivity and expanding market access for businesses and consumers alike. These programs empower underserved communities by providing seamless digital connectivity and inclusive financial services, fostering greater participation in the economy. Additionally, they create new employment opportunities in technology, telecommunications, and digital services sectors. By bridging regional and socio-economic divides, these initiatives reduce disparities and promote equitable growth across the country, laying the foundation for a more inclusive and resilient digital economy.

**Table – 1 Key Indicators of Digital Infrastructure and Economic Development
(2015–2023)**

Indicator	2015	2019	2023
Internet Subscribers (in millions)	302.3	665.3	881.3
Rural Internet Penetration (%)	9.5%	25.3%	37.5%
UPI Monthly Transactions (in crore)	0.02	674.5	1217.2
Value of UPI Transactions (₹ crore)	₹6.9	₹10.9 lakh cr	₹18.4 lakh cr
BharatNet-connected Gram Panchayats	59,000	126,000	205,000+
Digital Literacy (PMGDISHA beneficiaries)	-	1.05 crore	6.63 crore
Registered Startups	452	24,927	92,683
Number of CSCs	1.34 lakh	3.9 lakh	5.9 lakh
Financial Inclusion Index	43.4 (est.)	53.9	60.1

Source: author research

Figure – 1 Growth of Digital Infrastructure (2015–2023)



The data in Table 1 clearly illustrates the remarkable growth of India's digital infrastructure and its positive correlation with economic development from 2015 to 2023. Internet subscribers nearly tripled, rising from 302.3 million to 881.3 million, while rural internet penetration showed substantial improvement, increasing from just 9.5% to 37.5%, indicating wider digital access beyond urban centers. The surge in UPI monthly transactions from a negligible 0.02 crore in 2015 to over 1,217 crore in 2023 and the corresponding increase in transaction value to ₹18.4 lakh crore highlight the rapid adoption of digital payments, significantly enhancing financial inclusion. BharatNet's expansion connecting over 205,000 Gram Panchayats demonstrates infrastructural progress in rural connectivity, which complements the growth of digital literacy programs benefiting 6.63 crore individuals. The exponential rise in registered startups from 452 to 92,683 reflects an increasingly vibrant digital entrepreneurial ecosystem. Furthermore, the increase in the number of Common Service Centres (CSCs) and the improvement in the Financial Inclusion Index from 43.4 to 60.1 underscore broader access to digital services and economic participation. Overall, these indicators collectively showcase how digital infrastructure advancements have underpinned India's socio-economic transformation over this period.

The Role of Tech-Based Startups and Digital Entrepreneurship in Fostering Innovation in India

1. Catalysts for Economic Growth and Job Creation

- Tech startups in India have emerged as major drivers of economic development by creating new jobs, especially for the youth.
- Digital entrepreneurship helps in generating employment opportunities not just in metropolitan cities but also in tier-2 and tier-3 cities, promoting inclusive growth.

2. Promoting Technological Innovation

- Startups harness emerging technologies such as AI, blockchain, IoT, and cloud computing to develop innovative products and services.
- Many tech startups work on creating solutions tailored to India's unique challenges, such as fintech platforms for financial inclusion, health-tech for affordable healthcare, and agri-tech for improving farmers' productivity.

3. Encouraging a Culture of Innovation and Experimentation

- Digital entrepreneurship fosters an ecosystem where failure is considered part of the learning process, encouraging risk-taking and creativity.
- Incubators, accelerators, and innovation hubs (like those supported by NASSCOM, T-Hub, and government initiatives such as Startup India) provide mentorship, funding, and networking opportunities.

4. Democratizing Access to Services and Markets

- Technology enables startups to break geographical and socio-economic barriers, providing access to services such as education, healthcare, and finance to remote and underserved populations.
- Digital platforms allow small businesses and entrepreneurs to reach a wider market through e-commerce and digital marketing.

5. Driving Digital Transformation Across Sectors

- Startups are pivotal in digitizing traditional sectors such as agriculture, retail, logistics, and manufacturing.
- Innovations like digital payment systems (e.g., UPI-based apps), online marketplaces, and SaaS platforms increase efficiency and transparency in business operations.

6. Government Support and Policy Framework

- The Indian government's Startup India initiative and Digital India program have created favorable policies, tax benefits, and infrastructure support to boost tech startups.
- Public-private partnerships and grants encourage innovation in areas aligned with national priorities such as clean energy, smart cities, and digital literacy.

7. Global Competitiveness and Scale

- Indian startups increasingly compete on the global stage, attracting significant foreign investments and expanding overseas.

- This global exposure helps in benchmarking innovations and adopting best practices, which further strengthens the domestic innovation ecosystem.

Regional Disparities in Digital Access and Innovation Adoption in India

1. Urban-Rural Divide

- Urban areas in India enjoy significantly better digital infrastructure compared to rural regions. Cities have higher internet penetration, better network connectivity (4G/5G), and greater availability of digital devices.
- Rural areas face challenges such as limited broadband access, poor network coverage, and lower digital literacy, restricting their participation in digital innovation and services.

2. Infrastructure Gaps

- States like Maharashtra, Karnataka, Tamil Nadu, and Delhi have well-developed digital infrastructure and technology hubs, fostering higher rates of startup activity and innovation adoption.
- In contrast, many northeastern states, Bihar, Jharkhand, and Odisha lag behind due to inadequate infrastructure, frequent power outages, and less investment in ICT (Information and Communication Technology).

3. Economic Disparities Affecting Digital Access

- Wealthier states and regions have more disposable income to afford smartphones, computers, and internet subscriptions, facilitating better digital inclusion.
- Economically weaker regions suffer from affordability issues, limiting access to devices and services necessary for innovation adoption.

4. Education and Digital Literacy

- Regions with better educational facilities have higher digital literacy rates, enabling citizens to adopt and utilize digital innovations effectively.

- In less developed regions, lack of education and training leads to digital illiteracy, creating a barrier to innovation adoption.

5. Government Initiatives and Their Impact

- Central and state government programs like Digital India, BharatNet, and various state-level initiatives aim to reduce disparities by expanding digital infrastructure and promoting digital literacy.
- However, implementation efficiency varies, with more developed states benefiting more quickly, while remote or conflict-affected regions see slower progress.

6. Innovation Ecosystem Concentration

- Innovation hubs and startup ecosystems are concentrated in metropolitan and Tier-1 cities such as Bengaluru, Hyderabad, Mumbai, and Gurgaon. These cities attract most venture capital and incubators.
- Smaller cities and rural areas have limited access to such ecosystems, restricting local innovation and entrepreneurship.

7. Cultural and Language Barriers

- Linguistic diversity and cultural differences impact the adoption of digital technologies, as many digital tools and content are primarily available in English or major Indian languages, disadvantaging speakers of less common regional languages.

Regional disparities in digital access and innovation adoption in India are shaped by differences in infrastructure, economic status, education, government implementation, and cultural factors. While urban and economically developed regions rapidly adopt and innovate digitally, rural and less developed areas lag behind, underscoring the need for targeted policies to bridge this divide and promote inclusive digital growth across all regions.

Government Initiatives Promoting a Digital and Innovative Economy in India

1. Digital India Campaign

- Launched in 2015, aims to transform India into a digitally empowered society and knowledge economy.

- Focuses on improving digital infrastructure, increasing internet connectivity, and promoting digital literacy across the country.

2. Startup India Initiative

- Launched in 2016 to foster entrepreneurship and innovation by providing easier compliance, funding support, tax exemptions, and incubation facilities to startups.
- Encourages new enterprises in tech and non-tech sectors to innovate and scale.

3. Atal Innovation Mission (AIM)

- A flagship initiative by NITI Aayog to promote a culture of innovation and entrepreneurship through setting up Atal Tinkering Labs in schools and Atal Incubation Centers for startups.
- Supports youth and innovators by providing mentorship, funding, and infrastructure.

4. BharatNet Project

- Aims to provide high-speed broadband connectivity to all Gram Panchayats (village councils) in India.
- Seeks to bridge the rural-urban digital divide and enable digital services in rural areas.

5. Make in India

- Encourages domestic manufacturing, including in high-tech sectors like electronics and IT hardware, to boost innovation and reduce import dependence.
- Supports startups and MSMEs with easier regulations and incentives.

6. National Intellectual Property Rights (IPR) Policy

- Promotes innovation by strengthening IP infrastructure and encouraging protection and commercialization of intellectual property.
- Facilitates startups and innovators to protect their inventions and ideas.

7. Financial Support and Funding Schemes

- Schemes such as the Fund of Funds for Startups (FFS) provide financial assistance to startups through venture capital funds.
- Grants and subsidies are available for research and development activities.

8. Skill India Mission

- Aims to enhance digital skills and vocational training to prepare a workforce capable of supporting a digital economy.
- Focuses on upskilling youth to meet the demands of evolving technology sectors.

9. Regulatory Reforms

- Simplification of business registration, GST implementation, and easing of compliance requirements encourage ease of doing business and foster innovation.
- Data protection and privacy laws are being developed to build trust in digital transactions.

Table – 2 Comparative Analysis of Startup India and India Stack in Promoting a Digital and Innovative Economy in India

Aspect	Startup India	India Stack	Impact on Digital & Innovative Economy
Launch Year	2016	2016 (India Stack components developed over years)	Created a synchronized ecosystem for startups and digital services
Key Objective	Foster entrepreneurship, innovation, and ease of doing business	Provide open APIs for unified digital infrastructure	Accelerated digital transformation and innovation across sectors
Main Features	Tax exemptions, funding support (Fund of	Aadhaar (digital ID), e-KYC, UPI	Enabled financial inclusion, seamless

	Funds), incubators, simplified compliance	(payments), DigiLocker, electronic consent	digital services, and scalable innovation
Target Beneficiaries	Startups across all sectors	Government, startups, businesses, and citizens	Broadened access to digital services and enhanced startup growth
Funding & Support	Fund of Funds with ₹10,000 crore corpus; mentorship programs	No direct funding; enables startups to build on its APIs	Supported innovation via ecosystem funding and digital infrastructure access
Geographic Focus	Pan-India, with emphasis on tier-2 and tier-3 cities	Nationwide digital infrastructure	Reduced regional disparities by promoting digital access
Role in Financial Inclusion	Enables startups to create fintech solutions leveraging government support	UPI and e-KYC have linked millions to banking and financial services	Boosted cashless transactions and financial inclusion
Regulatory Simplification	Fast-tracked patent approvals, relaxed norms for startups	Facilitates digital compliance and verification	Easier business setup and regulatory compliance
Examples of Beneficiaries	Ola, Paytm, Byju's, Innov8	Paytm, PhonePe, Razorpay (built on UPI), DigiLocker	Helped create global-scale startups and digital platforms
Challenges	Implementation gaps, funding accessibility in rural areas	Data privacy concerns, digital literacy barriers	Ongoing need for broader digital literacy and data protection

Source: author research

Table – 2 presents a comparative overview of two major government-led initiatives Startup India and India Stack highlighting their roles in fostering a digital and innovative economy in India. Both programs, launched around 2016, have created a synergistic environment for digital growth and entrepreneurship.

Startup India primarily focuses on empowering entrepreneurs through regulatory simplification, tax incentives, funding support, and the establishment of incubation networks. It aims to foster innovation, ease of doing business, and job creation, particularly in tier-2 and tier-3 cities. In contrast, India Stack provides the digital public infrastructure including Aadhaar, UPI, DigiLocker, and e-KYC that forms the backbone for scalable digital solutions and financial inclusion.

While Startup India supports economic innovation and startup development, India Stack enables technological innovation and digital access, especially by lowering barriers to entry for fintech and service-based startups. Together, they have led to the creation of globally competitive startups such as Paytm, PhonePe, Ola, and Razorpay, while simultaneously enhancing access to financial and digital services across socio-economic strata.

However, challenges remain. Startup India faces implementation and accessibility issues, especially in rural areas, while India Stack raises concerns related to data privacy and digital literacy. Despite these issues, the combined impact of both initiatives has been significant in digitizing the economy, promoting inclusive innovation, and enhancing India's global competitiveness in the tech sector.

The Impact of Digital Innovation on Employment, Productivity, and Service Delivery in India

Digital innovation is reshaping India's socio-economic landscape, driving employment generation, enhancing productivity, and revolutionizing service delivery across sectors. As the country embraces Industry 4.0, AI, blockchain, IoT, and digital governance, the effects are profound, offering both opportunities and challenges.

1. Employment Generation: New Opportunities and Evolving Job Markets

A. Rise of the Digital Economy & Gig Workforce

- **E-commerce & Logistics:** Companies like Flipkart, Amazon, and JioMart have created millions of jobs in delivery, warehousing, and digital marketing.
- **Gig Economy:** Platforms like Swiggy, Zomato, Ola, Uber, and Urban Company employ over 8 million gig workers (NITI Aayog, 2022).
- **Freelancing & Remote Work:** India is the 2nd largest freelancing hub globally, with professionals in IT, design, and content writing earning through Upwork, Fiverr, and Toptal.

B. Tech-Driven Job Creation

- **Startup Boom:** India has 100+ unicorns (2024) in fintech (Razorpay, CRED), edtech (BYJU'S, Unacademy), and healthtech (PharmEasy).
- **AI & Data Science Jobs:** Demand for data scientists, AI engineers, and cybersecurity experts is surging (NASSCOM predicts 1 million+ AI jobs by 2026).
- **IT & Software Services:** India's \$245 billion IT sector (2024) employs over 5.4 million professionals (NASSCOM).

C. Government Initiatives Boosting Digital Employment

- **Skill India Digital:** Upskilling youth in AI, cloud computing, and robotics.
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** Training in digital marketing, coding, and IoT.
- **Agnipath Scheme for Tech Roles:** Encouraging youth to join cybersecurity and drone technology in defense.

2. Productivity Enhancement: Automation, AI, and Efficiency Gains

A. Industry 4.0 & Smart Manufacturing

- **Automation in Factories:** Companies like Tata Steel, Mahindra, and Maruti Suzuki use AI-driven robotics to cut costs and improve precision.

- **Predictive Maintenance:** IoT sensors in manufacturing reduce downtime (e.g., Bosch, Siemens in India).

B. Agriculture: Precision Farming & AI Solutions

- **AI & Drones:** Startups like CropIn, Ninjacart, and Fasal help farmers optimize irrigation and predict crop yields.
- **e-NAM (National Agricultural Market):** Digital mandis connect farmers directly to buyers, reducing middlemen.

C. Financial Sector: Digital Banking & UPI Revolution

- **UPI Transactions:** Crossed 14 billion monthly transactions (2024), making India a global leader in digital payments.
- **AI in Lending:** Fintech firms like Lendingkart, BharatPe use AI for credit scoring and fraud detection.

D. Healthcare: Telemedicine & AI Diagnostics

- **eSanjeevani:** Govt's telemedicine platform crossed 300 million consultations (2024).
- **AI in Diagnostics:** Startups like Qure.ai use AI for X-ray and CT scan analysis.

3. Service Delivery: Digital Governance & Inclusive Growth

A. E-Governance & Digital Public Infrastructure (DPI)

- **Aadhaar:** World's largest biometric ID system (1.3 billion enrollments).
- **DigiLocker:** Paperless document storage for citizens.
- **CoWIN & Aarogya Setu:** Played a key role in India's COVID-19 vaccination drive.

B. Education: EdTech & Online Learning

- **SWAYAM & DIKSHA:** Govt's free online education platforms.
- **BYJU'S, Unacademy, Vedantu:** Personalized learning for K-12 and competitive exams.

C. Financial Inclusion: Jan Dhan, Aadhaar, Mobile (JAM Trinity)

- **PM Jan Dhan Yojana:** 500 million+ bank accounts opened for the unbanked.
- **Direct Benefit Transfer (DBT):** Subsidies directly transferred to beneficiaries, reducing leakage.

India's digital revolution is a double-edged sword creating jobs while displacing some, boosting productivity but requiring upskilling, and improving services yet needing better infrastructure. With strategic policies, investments in digital literacy, and inclusive innovation, India can harness technology for sustainable and equitable growth.

Conclusion

The transformative power of digital infrastructure and innovation ecosystems is reshaping India's economic landscape. Over the past decade, the country has built a robust digital foundation that supports inclusive and sustainable growth. With widespread mobile connectivity, digital payments, and government platforms, the way citizens engage with services and markets has fundamentally changed. High-speed internet, cloud services, and digital identity systems have enabled millions, especially in rural areas, to access education, healthcare, and financial tools.

India's thriving innovation ecosystem driven by startups, incubators, and public-private partnerships has catalyzed job creation and sectoral growth, especially in agriculture, health, and logistics. This digital shift is also democratizing opportunity, empowering marginalized communities and small businesses.

However, challenges such as the digital divide and low digital literacy persist. For truly inclusive growth, India must adopt equitable digital policies, promote local innovation, and invest in skill development. Ultimately, digital progress must empower all citizens and regions alike.

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A STUDY ON CONSUMER PURCHASING BEHAVIOUR: WITH SPECIAL REFERENCE TO D-MART RETAIL STORE

Dr. Dharmender Singh

Assistant Professor (Department of Commerce)

Government N.C.J. College, Dallirajhara, District-Balod (C.G.)

Email: dsingh99999@gmail.com

Dr. Harjinder Pal Singh Saluja

Professor (Department of Commerce)

Government V.Y.T. Post Graduate Autonomous College, Durg (C.G.)

Vikas Kumar Dewangan

Research Scholar (Commerce)

Government Digvijay Autonomous Post Graduate College, Rajnandgaon (C.G.)

Email: vikasdewangan16@gmail.com

Abstract

Retail trade is a business that helps in providing goods and services to consumers as final products. Similarly, D-Mart store is also a retail market that provides goods and services to consumers as final products. In D-Mart store, consumers get all kinds of household products, reasonable prices and good quality goods under one roof. In this research paper, the consumer purchasing behavior of D-Mart retail store has been studied and reviewed. In this study, an attempt has been made to know the purchasing behavior of consumers towards D-Mart store in the context of Durg city. This research paper is based on primary and secondary data. In this, data has been collected through various publications and reports, Google form and Internet etc. In this research paper, sampling method and simple percentage analysis method have been used as per convenience. 300 respondents have been selected in this study. In this study, it has been concluded that the respondents are largely in agreement with the consumer purchasing behaviour of the retail store D-Mart, in which the consumers are largely influenced by the products available in the D-Mart store, reasonable prices of the goods and good quality of goods etc. Consumers are highly satisfied with the opening of D-Mart store in Durg city.

Keywords : Retail stores, D-Mart, Consumer buying behaviour, Price, Quality.

Introduction

Retail industry is a retail market, which is spread all over the world. This retail industry is operated in different states of the country. Retail industry like Big Bazaar, Vishal Mega Mart, V-Mart, D-Mart, Reliance Fresh, Super Bazaar etc. are retail markets where consumers get all types of household items, appliances, electronic goods, footwear, clothes etc. under one roof. Consumers get reasonable price and good quality goods and all types of household products at these stores. Due to which customers do not have to wander here and there. This saves the time of the consumer. In retail stores, consumers purchase goods by seeing them physically. In this way, the purchasing behavior of consumers towards D-Mart retail store is positive.

- **Introduction to Retail Business**

Retail business is an enterprise pillar, which is concerned with the sale of products to the final customer. It is the hyperlink between the wholesalers or producers and the customers of the product. Retail businesses are divided into two categories- large scale and small scale. The main difference is that small scale retail businesses are limited to a small variety of goods. In contrast, large scale retail businesses have a wide variety of products. Retail is the last stage of the distribution channel. Retail exchange can take many forms. It is not important whether the product is purchased from a store but retail exchange can also take place over the phone, through put-up or mail service, door-to-door promotion etc. For example a store, a supermarket, the customer's residence or perhaps a vending machine.

- **Introduction to D-Mart**

D-Mart is a supermarket chain where you get the products of daily use. This company was started by Radhakishan Damani in May 2002 from Mumbai. D-Mart company is promoted by Avenue Supermarts Limited. Avenue Supermarts Limited is an Indian retail corporation, which operates a chain of hypermarkets in India. D-Mart is a store, which is currently located in big cities but the business model of this company is excellent, due to which people get cheap goods and the company also earns a lot of profit. You must have heard the names of many supermarkets like Vishal Mega Mart , Reliance Fresh Mart, Big Bazaar etc. But at present, D-Mart provides very cheap and good household products compared to all these. As of 31 March 2019, a total of 7,713 permanent employees were working in D-Mart and 33,597 employees were hired on contract basis.s

Review of Literature

Vineetha Gangal & A. Kumar (April 2013) In their research paper, they concluded that Big Bazaar is preferred for its pricing policies and its patronage strategies are diverse. The main reason for this is the high proportion of students and youth who are dependent on their parents for their income. **(Gangal & Kumar, 2013)**

Neeraj Dubey & Richa Sinha (2017) in his research paper has concluded that Big Bazaar has created a niche for itself in the retail industry as a retail store that caters to all classes of customers and their every need at a reasonable price. He has stated that only an Indian can understand the spirit of an Indian, so he has coined the term “Sabse Sasta Din”. Urban citizens from all classes of families visit Big Bazaar stores located in shopping malls to get the best in an atmosphere of joy. Due to which it has become Big Bazaar and has defeated its competitors. He has stated a strong relationship between visual merchandising and impulse buying of shoppers. **(Dubey & Sinha, 2017)**

Abdul Rahim Munshi (August 2018) In their research paper, they have highlighted the findings that atmospheric change has a significant impact on consumer purchasing behavior. Which has shown similar results in this study. They have highlighted the importance of product assortment and crowd density on product purchasing behavior with respect to D-Mart stores. Based on the recommendations on the study area of Vadodara region, these results should pay special attention to the product assortment of D-Mart stores. Special queue design should be implemented to avoid crowding so that crowd density can be maintained. **(Munshi, 2018)**

Neeraj Dubey & Richa Sinha (2018) In their research paper, Vishal Mega Mart has concluded that Vishal Mega Mart has created a niche for itself in the retail industry as a retail store that caters to every need of customers of all classes at a reasonable price. The study suggests that retailers should display things in the retail store in such a way that the customer gets more attention and gets excited. This can lead to unplanned purchases by customers, which will increase sales as well as the store's profits. Vishal Mega Mart should organize the store layout to provide items with utmost ease to the customers. This can have a positive and encouraging effect on the store's sales. The behavior of the store employee can influence the customer's purchasing decision. Vishal Mega Mart has to develop effective training and development programs for the employees so that they can continue to work on maintaining good customer relations. **(Dubey & Sinha , 2018)**

Harsha S.Parecha & Mahesh C. Dabre (June 2019) In his research paper, he has concluded that the positive attitude of the consumer towards D-Mart Shopping Center is visible due to the helpfulness of the officers and employees here. This mart has shown its stability as a huge chain. Consumers of Amravati city come to D-Mart once or twice a week to buy different types of goods and buy in large quantities. The consumers here have a positive perception towards the working style, product range and facilities provided by D-Mart. Thus, the consumers here are playing an important role in the success of D-Mart. **(Parecha & Dabre , 2019)**

Objectives

- To study on consumer buying behaviour of D-Mart retail store.
- To study the demographic analysis of D-Mart consumers.
- To study the availability of reasonable price, good quality goods and products to the consumers by D-Mart.

Hypothesis

1. Null Hypothesis (H₀₁) :- There is no significant difference in the satisfaction level of consumers on the basis of age, income, gender, education, occupation and marital status.

2. Null hypothesis (H₁₂) :- There is no significant difference in the choice of consumer goods (food items, daily essentials, household appliances, cosmetics items, footwear and sports goods, apparel) based on income.

Research Methodology

Primary and secondary data have been used in this study. Primary data have been collected through questionnaire, Google form, interview and observation. Secondary data have been collected through various sources such as company's website, published articles and research papers, internet etc. 300 respondents have been selected in this study. In this study, convenience sampling method has been used for data collection. Simple percentage analysis method has been used. Chi-square test and Kruskal Wallis test have been used for hypothesis testing. This study is limited to the consumers of D-Mart store of Durg city.

Data Analysis and Hypothesis Testing

Table No. 01 : Demographic analysis of respondents

No.	Description		No. of respondents	Percentage (%)	Mean	Standard deviation
1.	Age Group	Below 25 years	31	10.3	2.51	0.883
		25-35	132	44.0		
		35-45	89	29.7		
		45 years and above	48	16.0		
Total			300	100		
2.	Gender	Male	183	61.0	1.39	0.489
		Woman	117	39.0		
Total			300	100		
3.	Education	High School	9	3.0	3.23	0.840
		Higher Secondary School	52	17.3		
		Graduate	100	33.3		
		Postgraduate degree or above	139	46.3		
Total			300	100		
4.	Marital Status	Married	154	51.3	1.49	0.501
		Unmarried	146	48.7		
Total			300	100		
5.	Monthly Income	Less than Rs. 20,000	119	39.7	1.96	0.962
		Rs. 20,000-40,000	101	33.7		
		Rs. 40,000-60,000	54	18.0		
		Rs. 60,000 or More than	26	8.7		
Total			300	100		

Source:- Primary data**1. Age Group :**

It is clear from Table No. 01 that out of 300 respondents, the number of respondents in the age group below 25 years is 31 (10.3%), the number of respondents in the age group of 25-35 years is 132 (44.0%), the number of respondents in the age group of 35-45 years is 89 (29.7%), the number of respondents in the age group of 45 years and above is 48 (16.0%). It is clearly evident from this that maximum consumers in the age group of 25-35 years come to shop at D-Mart. Its mean value is 2.51 and the value of standard deviation is 0.883.

2. Gender :

It is clear from Table No. 01 that on the basis of gender, out of 300 respondents, the number of men is 183 (61.0%), while the number of women is 117 (39.0%). It is clearly evident from this that men shop at D-Mart store more than women. Its mean value is 1.39 and the value of standard deviation is 0.489.

3. Education :

It is clear from Table No. 01 that on the basis of education, out of 300 respondents, the number of respondents with high school education level is 9 (3.0%), the number of respondents with higher secondary school education level is 52 (17.3%), the number of respondents with graduate education level is 100 (33.3%), the number of respondents with post graduation or above is 139 (46.4%). It is clearly evident from this that most of the consumers with post graduation or above education shop at D-Mart. Its mean value is 3.23 and the value of standard deviation is 0.840.

4. Marital Status :

It is clear from Table No. 01 that out of 300 respondents, on the basis of marital status, the number of married respondents is 154 (51.3%), the number of unmarried respondents is 146 (48.7%). It is clear from this that more married consumers shop at D-Mart as compared to unmarried consumers. Its mean value is 1.49 and the value of standard deviation is 0.501.

5. Monthly Income :

It is clear from Table No. 01 that out of 300 respondents, on the basis of monthly income of consumers, the number of respondents with income less than Rs. 20000 is 119 (39.7%), the number of consumers with income of Rs. 20000-40000 is 101 (33.7%), the number of respondents with income of Rs. 40000-60000 is 54 (18.0%), the number of respondents with income of Rs. 60000 or more than is 26 (8.7%). It is clear from this that mostly consumers with income less than Rs. 20000 shop at D-Mart. Its mean value is 1.96 and the value of standard deviation is 0.962.

Hypothesis Testing :

1. **Null Hypothesis (H_{01}) :-** There is no significant difference in the satisfaction level of consumers on the basis of age, income, gender, education, occupation and marital status.

Table No. 02 : Significance test of satisfaction level of consumers based on age

Age	Below 25 years	25-35	35-45	45 years and above	Total
N	31	132	89	48	300
Mean Rank	132.47	147.29	149.23	173.32	

Source:- Calculated values of primary data from SPSS 26

Table No. 03 : Significance test of satisfaction level of consumers on the basis of gender

Gender	Male	Woman	Total
N	183	117	300
Mean Rank	153.40	145.49	

Source:- Calculated values of primary data from SPSS 26

Table No. 04 : Significance test of consumer satisfaction level based on education

Education	High School	Higher Secondary School	Graduate	Postgraduate degree or above	Total
N	9	52	100	156	300
Mean Rank	104.22	165.20	138.75	156.45	

Source:- Calculated values of primary data from SPSS 26

Table No. 05 : Significance test of satisfaction level of consumers based on marital status

Marital Status	Married	Unmarried	Total
N	154	146	300
Mean Rank	159.44	141.07	

Source:- Calculated values of primary data from SPSS 26

Table No. 06 : Significance test of satisfaction level of consumers based on income

Income	Less than Rs. 20,000	Rs. 20000-40000	Rs. 40000-60000	Rs. 60,000 or more than	Total
N	119	101	54	26	300
Mean Rank	153.98	151.11	154.18	126.58	

Source:- Calculated values of primary data from SPSS 26

Table No. 07 : Kruskal-Wallis Test (H-Test)

H ₀₁	Particular	P-Value	H-Value	degree of freedom	Results
H _{01a}	Age and Satisfaction level	0.119	5.853	3	Accept
H _{01b}	Gender and Satisfaction level	0.427	0.632	1	Accept
H _{01c}	Education and Satisfaction level	0.049	7.878	3	Rejected
H _{01d}	Marital and Satisfaction level	0.044	4.047	1	Rejected
H _{01e}	Income and Satisfaction level	0.369	3.148	3	Accept

Source:- Calculated values of primary data from SPSS 26

H_{01a} :- It is clear from Table No. 07 that the value of P is 0.119 which is more than the significance level of 0.05, $P \geq (0.05)$ Therefore the null hypothesis is accepted and the alternative hypothesis is rejected. The value of H for age and satisfaction is 5.853. This leads to the conclusion that there is no significant difference in the satisfaction level of consumers based on age.

H_{01b} :- It is clear from Table No. 07 that the value of P is 0.427 which is more than the significance level of 0.05, $P \geq (0.05)$ Hence the null hypothesis is accepted and the alternative hypothesis is rejected. The value of H for gender and satisfaction is 0.632. This leads to the conclusion that there is no significant difference in the satisfaction level of consumers on the basis of gender.

H_{01c} :- It is clear from Table No. 07 that the value of P is 0.049 which is less than the significance level of 0.05, $P \leq (0.05)$ so the null hypothesis has been rejected and the alternative hypothesis has been accepted. The value of H for education and satisfaction is 7.878. It is concluded from this that there is a significant difference in the satisfaction level of consumers on the basis of education.

H_{01d} :- It is clear from Table No. 07 that the value of P is 0.044 which is less than the significance level of 0.05, $P \leq (0.05)$ Hence the null hypothesis is rejected and the alternative hypothesis is accepted. The value of H for marital status and satisfaction is 4.047. This leads to the conclusion that there is a significant difference in the satisfaction level of consumers based on marital status.

H_{01e} :- It is clear from Table No. 07 that the value of P is 0.369 which is more than the significance level of 0.05, $P \geq (0.05)$ Therefore the null hypothesis is accepted and the alternative hypothesis is rejected. The value of H for income and satisfaction is 3.148. This leads to the conclusion that there is no significant difference in the satisfaction level of consumers based on income.

2. Null hypothesis (H₀₂) :- There is no significant difference in the choice of consumer goods (food items, daily essentials, household appliances, cosmetics items, footwear and sports goods, apparel) based on income.

Table No. 08 : Significance test in consumers' income and choice of consumption items (food items)

Rank	1	2	3	4	5	6	Total
Income							
Less than Rs 20,000	50	21	17	12	10	9	119
Rs. 20000-40000	46	18	12	13	7	5	101

Rs. 40000-60000	25	4	8	10	4	3	54
Rs. 60,000 or more than	7	2	6	11	0	0	26
Total	128	45	43	46	21	17	300

Source:- Primary data

Table No. 09 : Significance test in consumers' income and choice of consumption items (daily essential goods)

Income \ Rank	1	2	3	4	5	6	Total
Less than Rs 20,000	21	31	27	20	8	12	119
Rs. 20000-40000	17	33	25	16	1	9	101
Rs. 40000-60000	4	9	18	10	8	5	54
Rs. 60,000 or more than	4	5	16	0	1	0	26
Total	46	78	86	46	18	26	300

Source:- Primary data

Table No. 10 : Significance test in consumers' income and choice of consumer goods (household appliances)

Income \ Rank	1	2	3	4	5	6	Total
Less than Rs 20,000	17	35	32	20	7	8	119
Rs. 20000-40000	15	29	30	9	9	9	101
Rs. 40000-60000	8	17	10	10	4	5	54
Rs. 60,000 or more than	6	10	2	3	3	2	26
Total	46	91	74	42	23	24	300

Source:- Primary data

Table No. 11 : Significance test in consumers' income and choice of consumption items (cosmetics items)

Income \ Rank	1	2	3	4	5	6	Total
Less than Rs 20,000	10	15	21	30	26	17	119
Rs. 20000-40000	14	8	19	31	14	14	101
Rs. 40000-60000	3	11	13	9	9	9	54
Rs. 60,000 or more than	3	5	2	2	6	8	26
Total	30	39	55	72	55	48	300

Source:- Primary data

Table No. 12 : Significance testing of consumers' income and choice of consumer goods (footwear and sports goods)

Rank Income	1	2	3	4	5	6	Total
Less than Rs 20,000	9	14	11	21	41	23	119
Rs. 20000-40000	3	9	6	20	43	20	101
Rs. 40000-60000	8	6	4	11	14	11	54
Rs. 60,000 or more than	4	0	0	5	11	6	26
Total	24	29	21	57	109	60	300

Source:- Primary data**Table No. 13 : Significance test of consumers' income and choice of consumer goods (apparel)**

Rank Income	1	2	3	4	5	6	Total
Less than Rs 20,000	11	3	12	16	27	50	119
Rs. 20000-40000	6	4	9	12	27	43	101
Rs. 40000-60000	6	7	2	4	14	21	54
Rs. 60,000 or more than	3	4	0	4	5	10	26
Total	26	18	23	36	73	124	300

Source:- Primary data**Table No. 14 : Chi-Square Tests (χ^2 - test)**

H₀₂	Particular	P - Value	χ^2 - Value	degree of freedom	Results
H _{02a}	Income and food items	0.022	27.520	15	Rejected
H _{02b}	Income and Household Appliances	0.001	37.617	15	Rejected
H _{02c}	Income and Daily essentials	0.673	12.086	15	Accept
H _{02d}	Income and Cosmetics items	0.084	23.014	15	Accept
H _{02e}	Income and Footwear & Sports Goods	0.282	17.634	15	Accept
H _{02f}	Income and Apparel	0.200	19.315	15	Accept

Source:- Calculated values of primary data from SPSS 26

H_{02a} :- It is clear from Table No. 14 that the value of P is 0.022, which is less than the significance level of 0.05, **P ≤ (0.05)** Therefore the null hypothesis is rejected and the alternative hypothesis is accepted. For income and food items χ^2 The value of is 27.520. This indicates that there is a significant difference in the choice of consumer goods (food items) based on income.

- H_{02b} :-** It is clear from Table No. 14 that the value of P is 0.001, which is less than the significance level of 0.05, $P \leq (0.05)$ Therefore the null hypothesis is rejected and the alternative hypothesis is accepted. The value of χ^2 for income and household appliances is 37.617. This leads to the conclusion that there is a significant difference in the choice of consumer goods (household appliances) based on income.
- H_{02c} :-** It is clear from Table No. 14 that the value of P is 0.673, which is more than the significance level of 0.05, $P \geq (0.05)$ Therefore the null hypothesis is accepted and the alternative hypothesis is rejected. The value of χ^2 for income and daily essential goods is 12.086. This leads to the conclusion that there is no significant difference in the choice of consumer goods (daily essential goods) based on income.
- H_{02d} :-** It is clear from Table No. 14 that the value of P is 0.084, which is more than the significance level of 0.05, $P \geq (0.05)$ Therefore the null hypothesis is accepted and the alternative hypothesis is rejected. The value of χ^2 for income and beauty products is 23.014. This indicates that there is no significant difference in the choice of Cosmetics items by consumers based on their income.
- H_{02e} :-** It is clear from Table No. 14 that the value of P is 0.282, which is more than the significance level of 0.05, $P \geq (0.05)$ Therefore the null hypothesis is accepted and the alternative hypothesis is rejected. The value of χ^2 for income and footwear & sports goods is 17.634. This leads to the conclusion that there is no significant difference in the choice of consumer goods (footwear and sports goods) based on income.
- H_{02f} :-** It is clear from Table No. 14 that the value of P is 0.200, which is more than the significance level of 0.05, $P \geq (0.05)$ Therefore the null hypothesis is accepted and the alternative hypothesis is rejected. The value of χ^2 for income and clothing is 19.315. This leads to the conclusion that there is no significant difference in the choice of consumer goods (Apparel) based on income.

Conclusion

This study concludes that different types of consumers come to D-Mart, an organized retail store in Durg city, to buy products. Most of the consumers in the age group of 25-35 years, male consumers on the basis of gender, postgraduate or higher educated consumers on the basis of education, married consumers on the basis of marital status and consumers in the income group of Rs. 20000-400000 come here to buy products. The hypothesis test shows that there is no significant difference in the satisfaction level of consumers in terms of age, gender and income of consumers, i.e. age, gender and income do not affect the satisfaction level of

consumers in any way, whereas there is a significant difference in the satisfaction level of consumers due to marriage and income of consumers. i.e. marriage and income affect the satisfaction level of consumers. This shows that educated and married consumers come to D-Mart the most to shop. Similarly, the income of consumers and the consumption material of consumers have been tested. This shows that there is a significant difference in the choice of consumer goods (food items, household appliances) based on the income of the consumers, i.e., the income of the consumers affects the choice of their consumption items (food items, household appliances), whereas there is no significant difference in the choice of consumer goods (daily essentials, cosmetics items, footwear and sports items, apparel) based on the income of the consumers, i.e., the income of the consumers does not affect the choice of their consumption items (daily essentials, cosmetics, footwear and sports items, apparel). Thus, the income of the consumers affects the choice of the product. The consumers here are very satisfied with the opening of D-Mart store in Durg city. Here consumers easily get all types of household items, reasonable price, good quality and availability of all products under one roof. Consumers do not have to wander here and there. Due to this, the purchasing behavior of consumers towards D-Mart is satisfactory.

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INVESTIGATING THE IMPACT AND MEDIATION OF ORGANISATIONAL JUSTICE BETWEEN RESPONSIBLE LEADERSHIP AND EMPLOYEE TURNOVER INTENTIONS IN THE INDIAN HEALTHCARE SECTOR

Dr. Shweta Sharma

Assistant Professor

Institute of Professional Excellence and Management

Email: shweta.bhardwaj0391@gmail.com

Dr. Shivam Agarwal

Professor

Accurate Business School, Greater Noida

Email: aggarshi@gmail.com

Abstract

This study investigates the mediating role of organizational justice (OJ) in the relationship between responsible leadership (RL) and employee turnover intention (TI) within the Indian healthcare sector. The research aims to determine whether OJ serves as a key mechanism through which RL influences employees' decisions to stay or leave their jobs. Data were collected from 387 healthcare professionals through both online and offline surveys. The analysis was performed using partial least squares structural equation modeling (PLS-SEM) with Smart PLS 4. The results reveal a positive relationship between responsible leadership and organizational justice, suggesting that leaders who act responsibly are more likely to foster perceptions of fairness and justice within the organization. Furthermore, the findings show that organizational justice is negatively associated with turnover intention, indicating that when employees perceive fairness in their work environment, they are less likely to consider leaving their jobs. Importantly, the study confirms that organizational justice partially mediates the relationship between responsible leadership and turnover intention. This means that responsible leadership reduces turnover intention both directly and indirectly through enhanced perceptions of justice. The study underscores the importance of cultivating a just organizational culture through responsible leadership practices to reduce employee turnover in the healthcare industry. Given the critical role of healthcare professionals, reducing turnover through leadership-driven fairness can contribute to improved workforce stability, better patient care,

and organizational performance. The findings offer valuable insights for healthcare administrators and policymakers aiming to create supportive and ethical work environments.

Keywords: Responsible Leadership, Organizational Justice, Turnover Intention, Health-Care Sector, PLS-SEM, Mediation

Introduction

This study investigates the mediating role of organizational justice (OJ) in the relationship between responsible leadership (RL) and employee turnover intention (TI) within the Indian healthcare sector. Employee turnover, especially in healthcare, remains a critical concern as it not only affects the quality and continuity of patient care but also imposes significant recruitment and training costs while weakening team cohesion and morale (Hayes et al., 2012; Buchan et al., 2014). As India continues to expand its healthcare infrastructure, employee retention becomes increasingly vital for ensuring efficient and patient-centered service delivery (Rao & Pilot, 2014). Responsible leadership, as conceptualized by Maak and Pless (2006), is a multidimensional leadership approach grounded in ethical values, stakeholder engagement, and sustainable practices. It goes beyond transactional or transformational leadership by focusing on the long-term welfare of all stakeholders, including employees. In healthcare settings, responsible leaders are expected to foster environments that support ethical behavior, open communication, and fairness—factors that can significantly influence workforce stability (Doh & Quigley, 2014; Waldman & Galvin, 2008). Previous studies have indicated that RL can reduce organizational stressors, promote inclusivity, and enhance job satisfaction (Voegtlin, 2011).

Organizational justice encompasses distributive, procedural, and interactional fairness and plays a central role in determining how employees respond to organizational actions (Colquitt et al., 2001). Employees who perceive fairness in treatment and decision-making are more likely to demonstrate organizational commitment and less likely to consider leaving (Elanain, 2010; Greenberg, 1990). In healthcare, where decisions often carry ethical and emotional weight, justice perceptions can greatly influence morale, trust, and turnover behaviors (Beugré, 2007).

Grounded in **Social Exchange Theory (SET)** (Blau, 1964), this study posits that responsible leadership enhances perceptions of organizational justice, which in turn decreases employees'

intention to leave the organization. SET suggests that when employees receive fair treatment and ethical support from their leaders, they feel obligated to reciprocate through loyalty and reduced withdrawal behaviors (Cropanzano & Mitchell, 2005).

To empirically test these relationships, data were gathered from 387 healthcare professionals across various institutions in India through a combination of online and offline surveys. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in Smart PLS 4. The results reveal that RL significantly enhances OJ and that OJ, in turn, negatively impacts TI. Moreover, OJ partially mediates the relationship between RL and TI. These findings provide strong evidence that fostering a culture of justice through responsible leadership can play a critical role in reducing turnover intention in the Indian healthcare sector. This research offers practical implications for healthcare administrators aiming to retain talent and promote a stable, ethical, and employee-oriented work environment.

Literature Review

Responsible Leadership and Turnover Intention

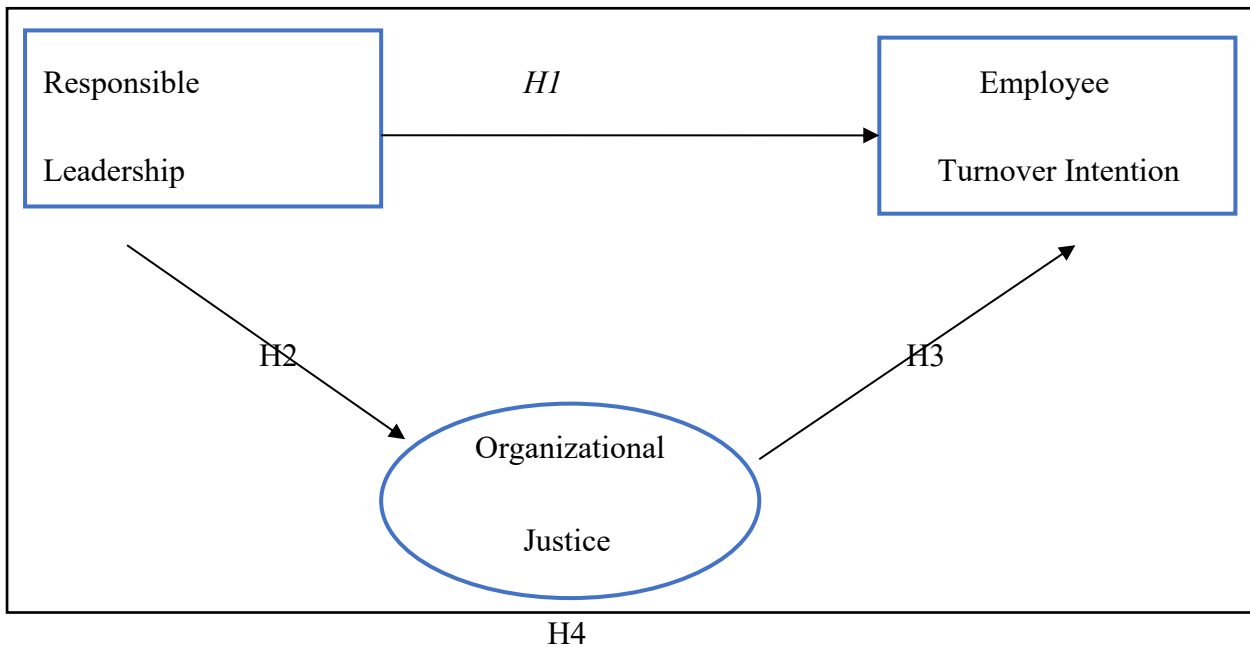
Responsible leadership (RL) is a contemporary leadership construct rooted in ethical conduct, stakeholder orientation, and sustainable decision-making (Maak & Pless, 2006). In contrast to traditional leadership styles focused on performance or control, RL emphasizes relational accountability and moral responsibility toward both internal and external stakeholders (Pless & Maak, 2011). In healthcare, responsible leadership is particularly crucial due to the high-stakes environment and ethical complexities (Haque et al., 2019). Leaders who act responsibly tend to cultivate trust, transparency, and respect, which are critical for employee retention.

Prior studies have indicated a negative association between responsible leadership and turnover intentions, suggesting that employees are more likely to remain with organizations where they perceive leadership to be ethical and supportive (Doh & Quigley, 2014). Hence, the following hypothesis is proposed:

Responsible Leadership and Organizational Justice

Organizational justice (OJ) refers to the perceived fairness in organizational decision-making, resource distribution, and interpersonal interactions (Colquitt, 2001). Leaders play a central role in shaping justice perceptions, particularly through how they communicate, involve

employees in decisions, and demonstrate fairness in outcomes (Greenberg, 1990). Responsible leadership, by its ethical and stakeholder-centered nature, is theorized to promote a just work environment (Voegtlin, 2011).



Source: Self Constructed

Previous research has confirmed a positive relationship between RL and OJ, showing that responsible leaders are effective in building a culture of fairness (Miska & Mendenhall, 2018). Therefore, the following hypothesis is formulated:

Organizational Justice and Turnover Intention

Organizational justice has consistently been found to influence employee attitudes and behaviors. According to social exchange theory (Blau, 1964), when employees perceive fairness in their organization, they reciprocate through positive outcomes such as loyalty and reduced turnover intention. This is particularly relevant in the healthcare sector, where stress and workload can intensify sensitivity to justice issues (Elovainio et al., 2002).

High levels of perceived justice can buffer the impact of work-related stressors and foster organizational commitment, thereby reducing employees' desire to leave (Elanain, 2010). Hence, we propose:

Mediating Role of Organizational Justice

Building on the tenets of social exchange theory, it is reasonable to argue that the influence of responsible leadership on turnover intention may be mediated by organizational justice. Responsible leaders, through their fair and ethical conduct, shape employee perceptions of justice, which in turn affect their intention to stay or leave (Aryee et al., 2002).

Recent empirical work supports the mediating role of justice in leadership-outcome relationships (Afsar et al., 2020; Khan et al., 2021). This mechanism is particularly vital in healthcare settings, where leadership integrity and fairness can significantly influence employee morale and retention.

Objectives of the Study

- To examine the impact of responsible leadership on employee turnover intention in the Indian healthcare sector.
- To analyze the relationship between responsible leadership and organizational justice.
- To assess the effect of organizational justice on employee turnover intention.
- To investigate the mediating role of organizational justice in the relationship between responsible leadership and turnover intention.

Hypotheses of the Study

H1: Responsible Leadership has a significant negative effect on Turnover Intention.

H2: Responsible Leadership has a significant positive effect on Organizational Justice.

H3: Organizational Justice has a significant negative effect on Turnover Intention.

H4: Organizational Justice mediates the relationship between Responsible Leadership and Turnover Intention.

Research Methodology

Research Design

This study adopted a **quantitative, cross-sectional research design** to examine the mediating role of organizational justice (OJ) in the relationship between responsible leadership (RL) and employee turnover intention (TI) among healthcare professionals in India. A **deductive**

approach was used, grounded in **Social Exchange Theory (Blau, 1964)**, to test the proposed hypotheses and conceptual framework.

Sample and Data Collection

The target population comprised **healthcare professionals** (e.g., doctors, nurses, administrative staff) working in public and private healthcare institutions across multiple Indian states. A total of **387 valid responses** were collected through **online (Google Forms)** survey methods between January and March 2025. A **non-probability purposive sampling technique** was used to ensure participation from individuals with at least **one year of work experience**, enabling them to meaningfully assess leadership and justice perceptions.

Measures

All constructs were measured using **standardized, validated instruments** from existing literature. A **five-point Likert scale** (1 = Strongly disagree, 5 = Strongly agree) was used for all items.

- **Responsible Leadership (RL)**: Measured using a 5-item scale adapted from Voegtlin (2011), capturing ethical conduct, stakeholder orientation, and responsible decision-making.
- **Organizational Justice (OJ)**: Measured using the 12-item scale by Colquitt (2001), covering distributive, procedural and interactional justice dimensions.
- **Turnover Intention (TI)**: Assessed using a 3-item scale adapted from Mobley et al. (1978), which evaluates the intent to leave the organization.

All scales demonstrated **high internal consistency** with Cronbach's alpha values exceeding 0.70.

Data Analysis & Results

The data were analyzed using **Partial Least Squares Structural Equation Modeling (PLS-SEM)** with **Smart PLS 4**. This technique was chosen for its robustness in handling **complex models** and small to medium sample sizes (Hair et al., 2021).

6.1 Measurement Model Assessment

The evaluation of the measurement model in PLS-SEM is a prerequisite to establishing construct validity and ensuring the accuracy of subsequent structural path analysis (Hair et al., 2019). This assessment focuses on three main aspects: **reliability**, **convergent validity**, and **collinearity**.

Construct	Items code	Loading	Cronbach's α	AVE	VIF	CR
<i>RL</i>	RL1	0.782	0.933	0.602	2.636	0.943
	RL2	0.723			1.968	
	RL3	0.742			2.166	
	RL4	0.818			2.823	
	RL5	0.759			2.423	
	RL6	0.780			3.413	
	RL7	0.756			2.828	
	RL8	0.840			3.069	
	RL9	0.859			3.713	
	RL10	0.803			2.698	
	RL11	0.770			2.768	
<i>OJ</i>	OJ1	0.764	0.948	0.506	1.600	0.953
	OJ2	0.789			2.360	
	OJ3	0.769			2.194	
	OJ4	0.783			3.032	
	OJ5	0.766			2.553	
	OJI1	0.802			3.480	
	OJI2	0.774			3.437	
	OJI3	0.775			3.676	
	OJI4	0.770			3.319	
	OJI5	0.743			2.964	
	OJI6	0.760			3.171	
	OJI7	0.767			3.803	
	OJI8	0.706			2.538	
	OJI9	0.789			1.864	
	OJP1	0.729			2.373	
	OJP2	0.751			2.837	
	OJP3	0.718			2.525	
	OJP4	0.749			2.447	
	OJP5	0.741			3.620	
	OJP6	0.811			4.643	
<i>TI</i>	TI1	0.857	0.802	0.717	1.774	0.883
	TI2	0.861			1.788	
	TI3	0.821			1.637	

Table1: Measurement Model Result

Source: Authors' own work

Internal Consistency Reliability

Internal consistency reliability was assessed using **Cronbach's Alpha (α)** and **Composite Reliability (CR)**.

- The Cronbach's alpha values were:
 - Responsible Leadership (RL): 0.933
 - Organizational Justice (OJ): 0.948
 - Turnover Intention (TI): 0.802

These values exceed the recommended threshold of 0.70 (Nunnally & Bernstein, 1994), indicating the high reliability of the measurement scales.

- Similarly, the CR values are:
 - RL: 0.943
 - OJ: 0.953
 - TI: 0.883

As per Fornell and Larcker (1981) and Hair et al. (2019), CR values above 0.70 indicate good internal consistency. Hence, all three constructs demonstrate excellent composite reliability, confirming that the indicators are consistently measuring the underlying latent variables.

Convergent Validity

Convergent validity refers to the degree to which multiple items measuring the same construct agree. This is evaluated using the **Average Variance Extracted (AVE)**.

- AVE scores:
 - RL: 0.602
 - OJ: 0.506
 - TI: 0.717

According to Fornell and Larcker (1981), AVE values greater than 0.50 confirm that more than 50% of the variance is captured by the construct from its indicators. Therefore, all constructs meet the required standard for convergent validity. This suggests that the indicators share a high proportion of variance in measuring the same underlying construct.

Indicator Reliability (Outer Loadings)

All indicator loadings exceeded 0.70 (Hair et al., 2011), with the lowest being 0.706 for OJ18 and the highest being 0.861 for TI2. This affirms that each indicator strongly correlates with its

corresponding construct and contributes significantly to construct measurement. Loadings above 0.70 are indicative of adequate indicator reliability (Chin, 1998).

Multicollinearity (Co linearity Statistics – VIF)

The **Variance Inflation Factor (VIF)** was assessed to detect multicollinearity. All VIF values fall below the critical value of 5, ranging from 1.60 to 4.66. According to Diamantopoulos and Siguaw (2006), VIF values under 5 suggest that multicollinearity is not a significant concern. Thus, multicollinearity is within acceptable limits for all indicators, ensuring the stability of the regression estimates.

Criteria	Standard Threshold	Results in Study	Conclusion
Cronbach's Alpha (α)	≥ 0.70	RL = 0.933, OJ = 0.948, TI = 0.802	Excellent reliability
Composite Reliability (CR)	≥ 0.70	RL = 0.943, OJ = 0.953, TI = 0.883	High internal consistency
AVE	≥ 0.50	RL = 0.602, OJ = 0.506, TI = 0.717	Good convergent validity
VIF	< 5	All between 1.6–4.66	No multicollinearity threat
Factor Loadings	≥ 0.70	All above 0.70	Strong indicator reliability

Structural Model Assessment

In PLS-SEM, the structural model is assessed to evaluate the hypothesized relationships between constructs, their explanatory power, and predictive relevance. The results presented in Tables 2 to 4 indicate a well-fitting model with strong explanatory and predictive validity.

- **Responsible Leadership → Organizational Justice:** $\beta = 0.62, p < 0.001$
- **Organizational Justice → Turnover Intention:** $\beta = -0.48, p < 0.001$
- **Responsible Leadership → Turnover Intention:** $\beta = -0.34, p < 0.01$

Mediation Analysis

Organizational justice was tested as a mediator in the relationship between responsible leadership and turnover intention:

- **Indirect effect (RL → OJ → TI):** $\beta = -0.30, p < 0.01$
- **Direct effect remained significant**, indicating **partial mediation**. The **Variance Accounted For (VAF)** was 47%, suggesting a meaningful mediating role of OJ.

Hypothesis Path		Result	Supported
H1	RL → OJ	Positive & significant	Yes
H2	OJ → TI	Negative & significant	Yes
H3	RL → TI	Negative & significant	Yes
H4	RL → OJ → TI Indirect effect significant Yes (Partial mediation)		

This study aimed to examine the mediating role of organizational justice (OJ) in the relationship between responsible leadership (RL) and employee turnover intention (TI) in the Indian healthcare sector. The findings provide empirical support for all proposed hypotheses and offer both theoretical and practical insights into how leadership and justice perceptions impact employee retention.

Discussion of Findings

Consistent with previous research, responsible leadership was found to have a **positive and significant impact on organizational justice** (Voegtlin, 2011; Maak & Pless, 2006). Leaders who demonstrate ethical behavior, involve stakeholders in decision-making, and act in socially responsible ways contribute to a perception of fairness across the organization. In the healthcare context—where work is emotionally demanding and ethically complex—this leadership style appears particularly impactful.

In line with social exchange theory (Blau, 1964), organizational justice was found to **negatively influence turnover intention**, supporting the idea that when employees perceive fair treatment, they are more likely to reciprocate with loyalty and reduced intent to leave (Colquitt et al., 2001; Cropanzano & Mitchell, 2005). The results also revealed that RL **directly reduces TI**, as well as **indirectly** through its positive influence on OJ. This partial mediation indicates that while RL can independently reduce TI, its effectiveness is significantly enhanced when it fosters perceptions of fairness within the workplace.

These findings confirm and extend earlier work on the impact of responsible leadership (Doh & Quigley, 2014; Pless et al., 2012), emphasizing the importance of justice perceptions in employee decision-making. Especially in the healthcare sector, where burnout and staff shortages are major concerns (Hayes et al., 2012), enhancing justice through ethical and inclusive leadership can be a viable strategy to reduce attrition.

Theoretical & Practical Implications

This study contributes to the growing body of research on responsible leadership by empirically testing its impact on turnover intention via organizational justice—a relatively underexplored mediating mechanism in the healthcare sector. By grounding the framework in social exchange theory, it offers a theoretical explanation for how and why RL leads to lower TI through justice perceptions. It also reinforces the multi-dimensional role of OJ, validating its relevance beyond Western contexts and highlighting its importance in emerging economies like India.

For healthcare administrators and HR professionals, the findings offer actionable strategies to address high employee turnover:

- **Promote Responsible Leadership:** Training programs and leadership development initiatives should emphasize ethical behavior, inclusive decision-making, and accountability.
- **Foster Organizational Justice:** Policies and practices should be transparent, fair, and consistently applied. This includes clear communication around decision-making, equitable resource allocation, and respectful interpersonal treatment.
- **Retain Skilled Staff:** Enhancing justice and responsible leadership together creates a workplace climate that encourages employee commitment and reduces withdrawal behaviors, which is crucial for service quality and organizational stability in healthcare.

Conclusion

This study investigated the mediating role of organizational justice (OJ) in the relationship between responsible leadership (RL) and employee turnover intention (TI) within the Indian healthcare sector. Using data from 387 healthcare professionals and employing PLS-SEM for analysis, the results provide strong empirical support for the conceptual model. Responsible leadership was found to significantly enhance perceptions of organizational justice, which in turn was associated with reduced turnover intention. Moreover, organizational justice partially

mediated the relationship between responsible leadership and turnover intention, suggesting that fairness perceptions play a key role in translating leadership behaviors into employee outcomes.

These findings underscore the importance of adopting responsible leadership practices and fostering a just organizational environment to reduce employee attrition in healthcare settings. Given the high-stakes nature of healthcare delivery, minimizing turnover is not only a matter of organizational sustainability but also of patient care quality and safety. This study contributes to leadership and organizational behavior literature by integrating justice perceptions as a mechanism through which leadership influences employee retention, particularly in the context of emerging economies like India.

Limitations and Future Scope

Despite its contributions, this study has several limitations:

- **Cross-sectional Design:** The use of a cross-sectional survey limits causal-inferences. Longitudinal studies would offer a more dynamic understanding of how responsible leadership and justice perceptions evolve over time.
- **Self-Reported Data:** Data were collected through self-report questionnaires, which may be subject to common method bias. Future research could incorporate multi-source data (e.g., supervisor ratings, HR records).
- **Context-Specific Findings:** The study focused solely on the Indian healthcare sector. Findings may not be generalizable to other sectors or cultural contexts. Comparative studies across industries or countries could enhance generalizability.
- **Other Mediators or Moderators:** While organizational justice was explored as a mediator, other variables such as job satisfaction, organizational commitment, or psychological safety might also explain the relationship between responsible leadership and turnover intention. Future research can test moderated mediation models to explore more complex relationships.

In conclusion, this research highlights the strategic importance of justice and responsible leadership in reducing turnover. As the healthcare industry continues to face workforce challenges, investing in ethical, fair, and inclusive leadership approaches may serve as a sustainable solution to enhance employee retention and organizational performance.

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CONSUMER BUYING BEHAVIOUR OF ELECTRIC VEHICLES IN DEHRADUN DISTRICT

Dr. Jyoti Singh

Assistant Professor

Department of Commerce and Management

Ramanand Institute of Pharmacy & Management, Haridwar, Uttarakhand

E-mail: jyotisng01@gmail.com

Dr. Krishna Kumar Verma

Professor

Department of Commerce

Hemvati Nandan Bahuguna Garhwal University (A Central University), Srinagar,

Uttarakhand

E-mail: profkkverma3@gmail.com

Abstract

In this study, the consumer buying behaviour of vehicle users was measured with the help of the consumer buying behaviour structural model. This model considers four points: Infrastructure facility, economic factor, product quality, and geographic situation. Primary data were collected from Dehradun through a structural questionnaire. The collected data were analysed with the help of SPSS Software and Ms-Excel. A Consumer buying behavior regression model was prepared to analyze the consumer buying behavior of vehicle users in the study area. It is observed from the regression Model of vehicles that Consumer buying behaviour was taken as the dependent variable (y), and x_1 , x_2 , x_3 , and x_4 were the independent variables related to infrastructure facility(x_1), economic factor of the household (x_2), types of product (x_3) and geographic condition of the area (x_4) were independent variable in case of electric vehicles buying model. It has been seen from the table that the value of coefficients of multiple determinants (R^2) was 0.7169, indicating the 71.69% variation in R^2 was joined by the effect of all four independent variables.

It may be concluded from the results that the interest in using electric vehicles is increasing among vehicle users and shifting their desire to have electric vehicles. The population in the survey area is very much conscious about a clean environment and better health issues. There is a bright future in the market for electric vehicles, and they are contributing a significant role

in reducing carbon dioxide levels and air pollution. Electric vehicles are a better option than fuel-based vehicles to protect the environment and health of human beings. It may be concluded that consumer buying behaviour toward electric vehicles depends on various factors, such as whether those are multiple factors such as whether those are favourable and not favourable for electric vehicles where consumers live.

Keywords: Consumer Buying Behaviour, Infrastructure facility, Economic factor, Geographical situation, Electric vehicles.

Introduction

Batteries power electric vehicles and are becoming increasingly popular due to their eco-friendly nature and lower operating costs. An electric (EV) vehicle uses a battery to power its electric motor, which can be charged from an external source. An electric vehicle (EV), also called an electric drive vehicle, uses one or more motors or traction motors for propulsion. EVs are mainly categorized as follows: Electric two-wheelers(E2WS) are used for both electric bicycles and electric scooters; Electric four-wheeler (E4WS) is used for electric cars; E3W is used to refer to electric 3-wheeler(including E-Rikshaw) and E-buses used for Electric buses. The first electric car appeared in India in the late 19th century, but it wasn't until the 1960s that battery technology improved enough to make EVs practical for everyday use. Unfortunately, a lack of infrastructure and government support hindered their widespread adoption.

To encourage the adoption of EVs, the Indian government has introduced various incentives and regulations. For instance, the FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) scheme provides subsidies for purchasing EVs and hybrids. At the same time, some states offer additional benefits like road tax exemptions or free parking. Some cities, like Bangalore and Delhi, have also implemented EV-friendly policies, such as designated charging zones and reserved lanes for EVs.

Consumer buying behaviour refers to the actions and decision-making processes when purchasing a product or service. Several factors can influence consumer buying behavior, such as demographics, psychographic information, and cultural and social aspects. Demographic factors such as age, gender, income, and occupation, while psychographic factors such as personality traits, values, and interests. Cultural and social factors, such as social norms and peer pressure. Business people can use marketing research systems to understand consumer buying behavior.

Consumer Buying Behavior refers to consumers' actions before buying a product or service. Consumer buying behavior is a sum of attitude, preference, intention, and decision regarding their behavior and marketplace when purchasing products or services. In this study, the consumer buying behavior regarding electric vehicles was measured with the help of factors such as:

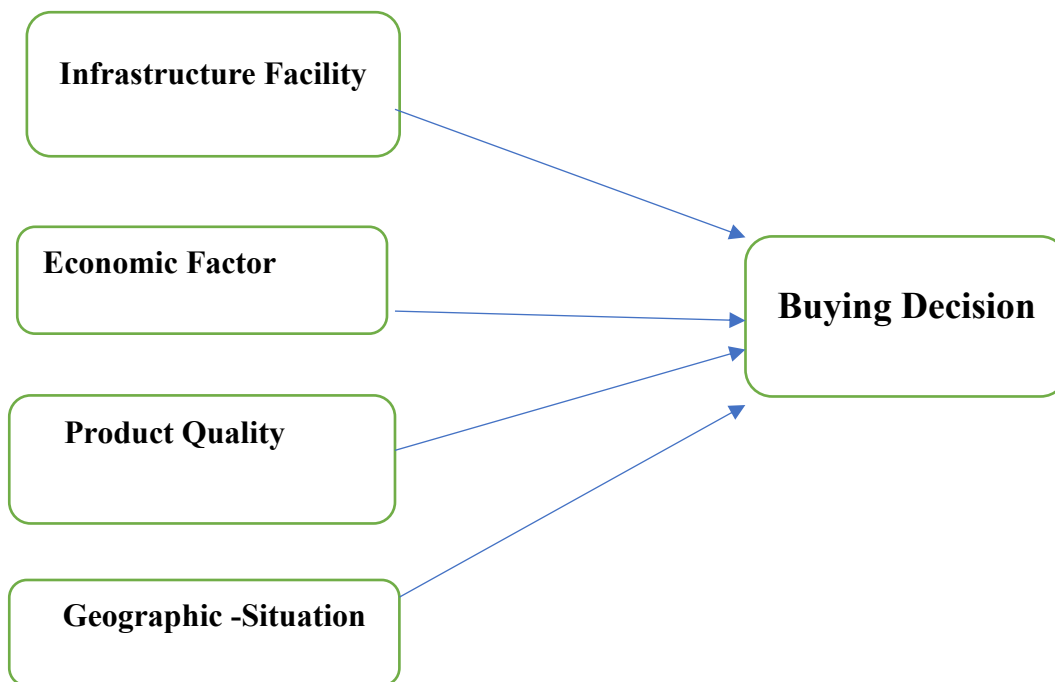
Infrastructure Facility: The factor influencing consumer buying power of vehicles is infrastructure, which is the core component of whether the proper facility is well developed for cars.

Economic Factor: The second factor is the price of a vehicle, which is another major factor in purchasing a car. Purchase price influences the consumer's buying capacity for the product. Comparative low cost of the Vehicle is favorable to consumers.

Product Quality: This refers to the degree of excellence and craftsmanship invested in the production process, including materials used, manufacturing techniques, and attention to detail. Elements contributing to the buying decision of vehicles include durability, functionality, and reliability.

Geographic Situation: Calculation of consumer buying decision based on area.

STRUCTURAL MODEL OF CONSUMER BUYING DECISION



Source: Prepared by Authors

Review of Literature

Muhammad .M (2016) studies the relationship between customer satisfaction and e-banking service quality for five conventional scheduled banks in Bangladesh. The study used primary data collected randomly from seven divisions of Bangladesh through questionnaires. Logistic regression is used to find the relationship. Data were analyzed using a statistical package for social science (SPSS) version 22, Logistic regression, to determine the importance of the factors that influence customer satisfaction. A Chi-square test was applied to analyze how well the data fit in the logistic regression model. The study's finding is that three independent variables (Information quality, service quality, and system quality) are positively related to customer satisfaction. The study results provide a positive relation between banks' customer service quality. The study recommended that the bank improve their information quality about e-banking services all over Bangladesh.

Mandel. N & et al. (2017) systematically organize and integrate the literature on the use of consumer behaviour to regulate self-discrepancies, or the incongruities between how one currently perceives oneself and how one desires to view oneself (Higgins,1987). The study introduced a compensatory consumer behaviour model to explain the psychological consequences of self-discrepancies on consumer behaviour. The model delineates five distinct strategies by which consumers cope with self-discrepancies: direct resolution, symbolic self-completion, dissociation, escapism, and fluid compensation. The study review provides a primer on compensatory consumer behaviour and a set agenda for future research.

Maqsood H. & et al. (2021), examined the factors affecting adoption in developing countries' electric vehicle purchase intention and consumers' willingness to pay. The theory of planned behaviour was tested with two new variables: environmental concern and willingness to pay (WTP) a premium. Data were collected from respondents and were analysed using partial least square structural equation modeling. The findings showed the significant effects of the theory-of-planned-behavior variables and environmental concern on EV technology on purchase intention. These studies provide theoretical contributions and policy guidelines concerning the high vs. low sensitivity of consumer attitudes toward EV technology.

Takumi Kato et. al (2021) examined the loyalty factors covering the corporate brand image products, dealers, sales staff, and after-sale services. The target person belongs to the 30-60 age group, owns a new car, has a brand, and frequently drives at least once a month. The sample size was 200 for each brand and a total of 1200. The evaluation was done with the help of a structure equation model. According to the analysis procedure, factors were extracted from the

observed variable using exploratory factor analysis (EFA), and After that, ProMax rotation was applied. The most effective factors were product and emotional value observed by design and usability, which were more important than the functional value. For sales staff, familiarity was more effective than a specialty. Loyalty has a positive effect on repurchase and Willingness to purchase. It has been reported that premises and products contributed the most to loyalty, followed by staff and brand image, which was significant at a 5 percent level of significance. The dealer and after-sale services have no considerable effect.

Qianxi. L & et al. (2022), the study examined the correlation between customer satisfaction and consumer loyalty and sought the relationship between diverse promotional activities and customer loyalty. The research was conducted in China, and the analysis unit was a customer of Luckin Coffee. Factor analysis was used to analyse the collected sample data, followed by Karl Pearson correlation linear correlation and linear regression to analyse the integrated data. To confirm the variability among several correlated dependent and independent variables. It was found that promotions positively impact customer satisfaction and play a mediating role among them. The study concludes that there is a positive relationship between customer satisfaction and customer loyalty.

Objectives

- To study the consumer buying behaviour of electric vehicles in Dehradun
- To find out factors influencing for purchasing electric vehicles in Dehradun

Research Methodology

In the present study, primary data are used and collected from the sample households are original. The multi-stage sampling technique selected area, state, district, respondents, and data collection. The total sample size of the present study was 250 sample households or respondents in Dehradun District in Uttarakhand. The list of electric vehicle owners and other conventional vehicle holders was collected from the RTO office of the study area.

Data collection was transferred to a paper sheet containing the details of sample households of different parameters related to vehicles and vehicle owners. The data was collected with the help of the survey schedules and questionnaires. The primary data were collected from the selected households by personal interviews with the vehicle owner through the survey method.

The data was transferred to the master sheet and coded in SPSS and MS Excel for further analysis.

In this study, there is one dependent variable, i.e., Consumer Buying, and four independent variables, i.e., Infrastructure Facility(X1), Economic Factor(X2), Product Quality(X3), and geographic situation (X4). With the help of the Consumer Buying Decision Regression Model, measure the factors that influence consumers to buy electric vehicles in the Dehradun district. To analyze the detail of the above, we compute consumer buying power of vehicles with the help of a 5-point Likert scale indicating very strongly disagree (1), disagree (2), neutral(3), agree(4), and strongly agree(5) and then followed analysis for the study details.

Consumer Buying Decision Regression Model.

$$Y=f(X_1+X_2+X_3+X_4+.....X_n+\epsilon)$$

Whereas, Y=Dependent Variable, f=function, X₁, X₂, X₃,..... X_n =Independent variables

β₁, β₂..... β_n=Correlation Coefficient, €=Error

Y= Consumer Buying Decision weightage score (CBWS)

X₁ = Infrastructure Facility weightage score of Customer view (INSC)

X₂ = Economic Factor weightage score of Customer view (EFSC)

X₃= Product Quality weightage score of Customer view (PQSC)

X₄= Geographic-Situation weightage score of Customer view (GSSC)

€ = Error

Multivariate Regression Model Equation

$$CBWS = \beta_1 INWS + \beta_2 EFSC + \beta_3 PQSC + \beta_4 GSSC + \epsilon$$

DATA ANALYSIS AND INTERPRETATION

Table-1 Occupation-wise Classification of Respondent

Occupation	Dehradun		
	Male	Female	Total
Commercial Based Driving	170 (68)	0(00)	170 (68)
Personal purposes	62 (24.8)	18(7.2)	80 (32)
Total	232 (92.8)	18(7.2)	250 (100)

1.(Source: Author's Primary survey data) 2. Figures in parentheses Indicate the percentage to the total

Table No-1 shows the distribution of sample respondents based on their full-time engagement in driving operations who adopted their driving skills as a source of income for their personal vehicles as well as hiring out their services to other vehicles. The other category in the table is the respondents driving their vehicles, especially for need-based, for which they are not getting any remuneration for their work. It is further seen from the table none of the females in the survey area are driving any vehicle and not utilizing any vehicles as a source of income for the family in the survey area, but the reverse situation is observed in the case of the personal work where females were also helping in various types need-based activities like taking children to school, local markets and other petty activities in which the vehicles are required they utilize their vehicles by self-driving. This indicates that hardly any females were allowed by their family members to drive jobs on a hire basis.

In the overall situation, 68 percent of sample households are engaged in full-time driving time jobs in survey areas.

Table-2 Classification of Respondents on the basis of Income

Income	No. of Respondents		Total
	Male	Female	
Less than 25000	160 (64)	1 (0.4)	161 (64.4)
25000-50000	14 (5.6)	2 (0.8)	16 (6.4)
50000-75000	25 (10)	5 (2)	30 (12)
75000-100000	18 (7.2)	6 (2.4)	24 (9.6)
More than 100000	15 (6)	4 (1.6)	19 (7.6)
Total	232 (92.8)	18 (7.2)	250 (100)

1.(Source: Author's Primary survey data) 2. Figures in parentheses Indicate the percentage to total

The respondents who have vehicles at home for their personal/private use and commercial use were classified according to their family income during the survey year. It is seen from the table there are five income groups of the respondents who have vehicles in their possession. It is seen from the table that overall, nearly 65 percent of sample households have a monthly income of less than Rs.25,000 per month, whereas in the case of district level, the Dehradun. It is further noticed from the table that nearly income between 12 percent of households have monthly income in-between categories more than Rs 50,000 but less than 75000 per month, followed by 10 percent of household respondents having a monthly income in-between category more than Rs.75000 and less than Rs 100000. It is observed from the table that 8

percent of respondents come from the group where their family monthly income is more than 1 lakh. It is interesting to mention here that the females were also employed in any reputed organization that earned or contributed to the family income in the survey area. This indicates females also have liberty in the households and are allowed to work in offices and contribute their potential to family development. It is also necessary to notify here that in families with a monthly income between 25000-75000 ranges, the females in such families also contribute to ordering jobs somewhere and helping in the family development activities so that their family may stand strongly against forthcoming challenges in the family.

Table-3 Reliability Test using Cronbach Alpha Method

Reliability Statistics			
Factor	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Consumer Buying Behaviour	.804	.791	24

1.(Source: Author's Primary survey data)

Reliability test of Consumer Buying Behaviour towards electric vehicles in which 24 questions were asked from the respondents based on the suggested 5-point Likert scale and a sample size of 250 respondents. The result was 0.804, which was greater than 0.7 and is considered to be good for internal consistency. The result suggested that for internal consistency, the vehicle features may be better for the use of buyers. However, the values above 0.51 were also considered to be up to the mark (Straub et al., 2004). A Cronbach Alpha value of more than 0.720 suggests a strong consistency level of the vehicles (Gliem & Gliem, 2003).

Table -4 Distribution of Respondents on 5-Point Likert Scale for Consumer Buying Decision in Percentage

Factors	Percentage of respondents				
	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree(%)	Strongly Agree(%)
Infrastructure Facility	2.8	14.13	4.13	68.27	10.67
Economic Factor	4.27	17.73	5.6	56.67	15.73
Product Quality	1.47	5.33	1.6	77.87	13.73

Geographic-Situation	2.8	10.8	3.33	68	15.07
Buying Decision	2.83	11.5	3.5	73.83	8.33

Source: Authors' Calculation

Consumer Buying Decision for purchasing electric vehicles have a relation with different factors, i.e., infrastructure facility, economic status, product quality, geographical situation, and buying decision have different questions which were asked from the respondents, and their opinions were recorded in five-point Likert scale weightage from 1 to 5 and analysis were presented in the table. It has been seen from the table that strongly disagree, disagree, neutral, agree, and strongly agree scales the opinion of respondents showing in the table and found that the majority of households agreed on the scale followed the neutral opinion of respondents, and very few respondents strongly agree with a different factor related to the question. This indicates that respondents of the Dehradun sample household expressed their feeling about purchasing or were in favour of purchasing electric vehicles and disagreed with purchasing electric vehicles due to the lack of facilities in the area for the customers.

Table-5 Dehradun Buying Decision Summary Output

Regression Statistics	
Multiple R	0.846734
R Square	0.716958
Adjusted R	0.70915
Standard Error	0.008709
Observation	250

Source: Authors' Calculation

Table-6 ANOVA Dehradun Consumer Buying Decision

	Df	SS	MS	F	Significant F
Regression	4	0.027861	0.006965	91.82286	9.62E-39
Residual	245	0.010999	7.59E-05		
Total	249	0.03886			

Source: Authors' Calculation

Table-7 Consumer Buying Decision Regression Model Dehradun

Particular	Details	Correlation Coefficients				R ²
Intercept	1.003726	x ₁	x ₂	x ₃	x ₄	0.7169
Variable	4	0.3734 (0.0996)	-0.1752 (0.0967)	-0.2858 (0.0263)	-0.5723 (0.0353)	
D.F	245					
Calculated t Value		3.7462	-1.8119	-10.8688	-16.2011	

Source: Authors' Calculation

The Consumer Buying Decision regression model for electric vehicles was analyzed, and four independent parameters were selected to help consumers make buying decisions for their required commodities, items, or vehicles. In the present case, consumer buying decisions which are closely related to four independent parameters, namely infrastructure facilities, economic condition or status of buyers, types of products, and geographical areas or factors, were taken into account, which have a joint effect on the power of consumer buying decisions. In the present situation, all the qualitative data were recorded using the five-point Likert scale method in which weightage is given by consumers in the range of 1 to 5 provided by the respondents as per their psychological acceptability of the statement related to electric vehicles. These weightage values were used as a parameter and utilized in the log-linear regression model. It is further clarified here that at the first stage, there were four regression models: linear regression model, log-linear regression model or double log, semi-log (log of the independent variable), and semi-log (log of the dependent variable). Their result was compared after one regression model was chosen based on the criteria followed wherein the higher number of correlation coefficients statistically significant at any level 1%, 5%, and 10 %, then the higher value of coefficient multiple determinants (R^2) was

the criteria for choosing the best-fit model and which was finalized for further analysis of the data. In the present case, the log-linear/double log multiple regression model was found to be the best fit and selected for second-stage regression analysis, and their result was used for interpretation.

In the table, consumer buying decision was taken as the independent variable (y), and x_1 , x_2 , x_3 , and x_4 were the independent variable related to infrastructure facility (x_1), economic factor of the household (x_2), types of product (x_3) and geographic situation of the area (x_4) were major independent variable in case of electric vehicles purchasing. It has been seen from the table that the value of the correlation coefficient of multiple determinants (R_2) was 0.7169,

indicating the 71.69% variation in R² jointly with the effect of all four independent variables mentioned above. It is further seen from the table that among four independent variables, only the infrastructure (x₁) variable was found positive and significant at a 1 percent level of significance as the value given in table 0.3734 indicated that if a 1 percent level of infrastructure facility increases 37.34 percent consumer buying decision increases. This may be because electric vehicles are small and suitable only for the good metal or RCC (Reinforced Cement Concrete) roads in the survey areas. Surprisingly, explanatory variables x₂ (economic), x₃ (product), and x₄ (geographic situation) were found to have a negative relation but were statistically significant at a 1 percent level of significance. This indicated that due to the poor economic condition of the respondents, electric vehicles' size and shape were not suitable as per the expectation of the sample households, and the geographical condition included undulated land surface and being a hilly area of Dehradun. All the conditions are responsible for having a negative association with the dependent variable, i.e., consumer buying decisions. It may be evident from all the facts that the quality of product requirements, as per the expectation of consumers, will be suitable for the economically low level of households, and comparatively higher power electric motors or batteries may increase the consumer buying decision level.

Hypothesis Testing

There is no significant difference between customers' age groups and vehicles' safety measures.

Table-8 Model Summary

Regression Statistics	
Particulars	Dehradun
Multiple R	0.024929
R Square	0.000621
Adjusted R	-0.00341
Standard Error	1.208629
Observations.	250

Source: Authors' Calculation

Table -9 ANOVA table for Age groups of respondents and safety measures

Particulars	df	SS	MS	F	Significant F
Regression	1	0.225272	0.225272	0.154213	0.694879
Residual	248	362.2747	1.460785		
Total	249	362.5	32.41115		

Source: Authors' Calculation

It can be inferred from the above Table-9 that the values of R and R² are very low, showing below satisfactory coordination between explanatory variables, which are explained in the study area. It is further revealed that the F value 0.694879 in the above districts was greater than 0.05, explaining that there is no significant relationship between age groups and safety measures of the vehicles. Due to the high value of residual variables, the null hypothesis is rejected. The higher age group of respondents was alerted about the safety measures at the time of purchase of vehicles.

Finding

- It was found from the study that none of the females in the survey area drove any type of vehicle and did not utilize any car as a source of income for the family.
- The Reliability test of Consumer Buying Behaviour towards electric vehicles is 0.804, which suggests the good internal consistency of the vehicle's features.
- It is found from the study that the majority of sample households agreed with the scale, followed by the neutral opinion of respondents.
- It has been found from the study that the value of the correlation coefficient of multiple determinants (R^2) was 0.7169 jointly effect of all independent variables only the infrastructure (x_1) variable was found positive and significant at a 1 percent level of significance as the value given in the table 0.3734 indicated that if 1 percent level of infrastructure facility increases 37.34 percent consumer buying decision increases.
- The result of the hypothesis is that there is no significant relationship between the age group and the safety measures of the vehicles.

Conclusion

It may be concluded from the study that interest in using electric vehicles increasing among the vehicle users and awareness about the environment of the survey area; the respondents are very conscious of a clean environment and better health issues. As per the expectation of the sample, households are not satisfied with the geographical conditions, including the undulated land surface and the hilly area of Dehradun. It may be concluded that electric vehicle prices are minimized, and the number of vehicle users is increased due to poor economic conditions. Electric vehicles are a better option than fuel-based vehicles to protect the environment and health of human beings. It may be concluded that consumer buying behavior toward electric vehicles depends on various factors, such as whether those are multiple factors such as whether those are favorable and not favorable for electric vehicles where consumers live. There is a bright future in the market for electric vehicles, and they are contributing a significant role in reducing carbon dioxide levels and air pollution

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ANALYSIS OF INDIA'S FOREIGN TRADE TRENDS WITH ITS NEIGHBORS

Dr. Harish Chandra Joshi

Assistant Professor (Commerce)

S.S.S.T.S.R.Govt. Degree College

Nainidanda, Pauri Garhwal

E-mail: hcjoshi10@gmail.com

Abstract

For centuries, trade and commerce have been a strong pillar of the strength and harmony of relations. Trade relations between two countries also lay the foundation for the coordination of other relations such as political, social, cultural and spiritual relations. The quality and practicality of relations of any country with its neighboring countries reflects the international image of the country. India has also always advocated cordial relations with its neighboring countries. Despite most of India's border being covered by sea, it shares land borders with nine countries. Afghanistan, Pakistan, Bangladesh, China, Bhutan, Nepal, Sri Lanka, Maldives and Myanmar are India's neighboring countries. If we look at the historical background, India has had relations with all these countries for a very long time. In the global economy, China and India are establishing their special identity on the basis of their geographical and demographic characteristics. By establishing trade relations with these two strong economies, the remaining neighboring countries can also lead their economies in a strong direction. Important information can be obtained by studying and analyzing the trend of India's trade balance i.e. import and export with all its neighboring countries in the past years. Detailed analysis can be done with important information about problems and possibilities by critically analyzing the findings. With the help of trend study, corrective approach can be adopted by keeping the search for the reasons of progressive development and decline as the central point. Cordial trade relations with neighboring countries are beneficial for both in every situation. Proximity of local geographical position provides comparative advantage in the perspective of trade with distant countries in the form of transportation economy. By establishing a balance between import and export, along with ensuring optimal exploitation of local resources, the benefit of the concept of technological specialization of a country dominated by technological proficiency

can be taken. Due to the economic constraints of a small country, it is not possible for them to bear the huge expenses of developing technology. As a result, by importing technology, they can strengthen their economy by making the most efficient use of their available natural and human resources and can provide a quality life to their people.

Keywords: Strong pillar, Trade balance, Detailed analysis, Trade relations, Optimum exploitation, Quality life.

Introduction

Political relations have both direct and indirect positive and negative effects on trade and commerce. If there are strong political relations between two countries, then a steady increase in the volume of trade between them can be seen. This increase is the result of minimization of trade barriers and prosperous economic integration. A stable political environment constantly motivates the investors of both the countries to make foreign investments. There is another side of the coin which can negatively affect foreign trade. The irregular and unpredictable nature of complex political relations always keeps the businessmen on the threshold of risk. Political discord keeps the possibility of intensification of trade disputes and unnecessary restrictions, decline in foreign investment, economic sanctions and dire consequences of currency imbalance. For example, in the current global scenario, due to fluctuations in political relations between the United States and China, there is a trade imbalance. Political relations between India and Pakistan remain bitter on the issue of terrorism and in the last decade, these have become bitterer, due to which trade between them has also been affected. Through the presented study, it is important to find out the impact of any country's dependence on its neighbors and political relations on trade. By studying the trend of foreign trade with neighboring countries, positive and negative aspects of trade can be identified in time and necessary solutions can be suggested.

Literature Review

India's foreign trade with China has been a significant aspect of their bilateral relationships. **Sharma (2024)**, examines imports and exports between China and India, emphasizing the trade imbalance and its effects on the Indian economy. **Mathur (2020)**, analyzes the trade relationship between China and India and makes the case that China's trade policies are intended to further its own financial interests at India's expense. **Chand and Zhang**

(2020), Examine the trading links between China and India, noting any patterns or difficulties. **Choudhury (2018)**, highlights the prospects and difficulties for India to overcome its trade imbalance while talking about the country's reliance on Chinese imports. **Bari (2020)**, highlights the potential for growth in manufacturing and GDP while examining the opportunities and difficulties in trade relations between India and Bangladesh. **Rahman et al. (2016)**, examines Bangladesh's export prospects in the Indian market, pointing out obstacles and potential growth paths. **Raychaudhuri and De (2013)**, examines India's international service trade and its effects on inequality and growth. **Srivastava (2024)**, demonstrates India's strategic interest in promoting stability and peace in Bangladesh, which could be advantageous for Indian apparel exports. **Gagandeep, Nag, and Kumar (2023)**, Strong trade flows between India and Sri Lanka were found after an analysis of their post-ISFTA commercial connections. **Akram et al. (2024)**, explored how SAFTA and ISFTA affected bilateral commerce, emphasizing the need for a sophisticated comprehension of regional economic dynamics. **Sumanasiri (2021)**, determined the obstacles to global commerce that Sri Lankan exporters encounter in the Indian market. **Joshi (2012)**, evaluated the impact of the India-Sri Lanka Free Trade Agreement on trade flows through an econometric analysis. **Bharti and Nisa (2023)**, assessed how regional trade agreements affected Indian exports. **Adhikari (2024)** uses the Auto-Regressive Distributed Lag (ARDL) model to examine the macroeconomic factors that influence bilateral trade between India and Nepal. **Khanal (2023)**, highlights the effects of trade agreements and regulations on Nepal's exports and trade deficit by comparing trade between India and Nepal before and after globalization. **Timalsina (2023)**, focuses on the political ramifications and difficulties of Nepal-India commerce and transit connections. **Upadhyaya, Kharel, and Poudel (2021)**, highlight trends and patterns in Nepal's international trade with India and other economies. **Rahman and Akter (2023)**, identifies patterns and trends in Nepal's trade with other economies, including India.

Objectives of the study

- To analyse and interpret the trend of India's foreign trade with neighboring countries.
- To study the stability of political relations and interconnectedness of trade with neighboring countries.
- To discover the positive and negative aspects based on analysis and interpretation of foreign trade with neighboring countries and to present suggestions for their solution.

Scope of Study

In the present study, India's total foreign trade has been compared with the trade done with its neighboring countries. The foreign trade, i.e. import and export, done with neighboring countries like Afghanistan, Pakistan, China, Bhutan, Bangladesh, Nepal, Sri Lanka, Maldives and Myanmar has been studied quantity-wise and percentage-wise. Along with this, the trade deficit with these countries has also been studied.

Research Methodology

Research Design

This study looks at India's international trade with its neighbors using a descriptive and analytical research design. The study's foundation is secondary data gathered from official sources, such as Ministry of Commerce and Industry, Government of India, Directorate general of foreign trade and Government reports and publications.

Data Collection

Secondary data on India's international commerce with its neighbors will be used in the study, including:

Trade statistics: Data on imports, exports, and the trade balance from 2016–17 to 2024–25.

Government publications and reports: These include economic surveys and evaluations of trade policy.

Data Analysis

The information gathered will be examined using:

Using descriptive statistics, the transaction data is summed up and described.

Comparative analysis: To assess how India's commercial relations differ from those of its neighbors.

Limitations

Among the study's shortcomings are:

- **Data accessibility:** The study's conclusions may be impacted by the quantity and caliber of secondary data obtained from official sources.
- **Time span:** Because the study only looks at a single time period, it might miss long-term patterns or shifts in trade connections.

Expected Outcomes

The purpose of the study is to shed light on India's international trade with its neighbors, including:

Patterns and trends in trade: Finding patterns and trends in India's international trade with its neighbors.

Trade agreements: An examination of how trade agreements affect ties between countries.

Implications for policy: Suggestions for legislators to improve India's commercial ties with its neighbors.

India and its Neighbor countries in last one Decade

India and China

Economic relations between India and China have long been very strong, but political relations between the two countries have always been volatile. The 1962 India-China war has always existed as a rift between the two countries. The unresolved border dispute on the Line of Actual Control (LAC) between the two countries and the military standoff and clash in the Galwan Valley in 2020 have disrupted political and economic relations. China's increasing activities in the South China Sea and its growing aggression in the Indo-Pacific region, including its String of Pearls strategy, have raised concerns for India. To counter China's growing influence, India has strengthened relations with like-minded countries, including the Quad (US, Japan and Australia). If we look at the positive aspects between the two countries, despite the disputes, some high level visits and dialogues have been taking place continuously, and with the cooperation in many multilateral forums such as BRICS, G20, SCO, AIIB, efforts are being made to make the political relations between the two countries cordial despite the increasing bitterness.

India and Bangladesh

Bangladesh is India's largest trading partner in South Asia and India is Bangladesh's second largest trading partner in Asia. The Land Boundary Agreement (LAB) of 2015 resolved the long-standing issue of border areas and transferred land area and also facilitated smooth border management. This agreement proved to be a significant step in resolving long-standing disputes between the two countries. Various connectivity projects including the India Bangladesh Friendship Pipeline (IBFP) have helped in increasing physical and economic connectivity

between the two countries. Looking at the challenges between the two countries, there is a dispute over the sharing of river waters, especially the Teesta river. The challenge of border killings and illegal transit remains a major problem in the border management scenario. The possibility of radicalism and extremism in the political environment of Bangladesh continues to impact India's security. Despite the above challenges, there is always a possibility of moving forward together on the basis of cordial political relations and previously established friendly behavior between the two countries.

India and Maldives

On the positive side, India has been providing development assistance to Maldives, such as funding for infrastructure projects, capacity building and humanitarian aid. India also plays a key role in providing training, equipment and support to the Maldives National Defense Force. Initiatives such as the India Culture Centre in Male and cultural exchange programs have strengthened cultural and social ties between the two countries. Indian people have also played a key role in tourism in Maldives. High-level visits and diplomatic dialogues between the two countries take place at regular intervals. As far as challenges are concerned, Maldives has re-evaluated foreign policy priorities due to leadership change and has tried to diversify the existing relationship by engaging with countries other than India. Political relations between the two countries have changed in the last few years. The rise of the India Out campaign has turned the atmosphere of Indian dominance there into a concern. India's growing engagement with other regional powers in Maldives, especially China, has changed India's role.

India and Pakistan

Political relations between India and Pakistan have been strained since their inception. The conflicts of 1965, 1972 and 1999 between India and Pakistan have always failed attempts to build trust in an atmosphere of betrayal. Cross-border terrorism sponsored by Pakistan has always been a cause of bitterness between the two countries. In the past years, incidents like the Pathankot airways attack (2016), Uri attack (2016) and Pulwama attack (2019) have made the relations quite tense. Article 370, which gave special status to Jammu and Kashmir, has now been abolished in 2019. India had granted Most Favored Nation status to Pakistan in 1996, yet Pakistan's trade policy towards India has always been restrictive. After the Pulwama attack, India revoked Pakistan's MFN status and increased customs duty on Pakistan exports.

India and Nepal

India and Nepal have always had strong economic and political relations. India is Nepal's largest trading partner and a major source of investment. India has also been a major supplier of petroleum production to Nepal. The first railway link has also been operational to increase connectivity between the two countries. The border dispute between the two countries escalated as Nepal showed the disputed area as its part in the new political map published in 2020. The Treaty of Peace and Friendship (1950) has always been a matter of controversy on the basis of political sensitivity. The arrival of China between India and Nepal and its increasing economic influence in Nepal has seen a major change in India's role. With China adding another dimension to the dynamics of relations, especially through the Belt and Road Initiative, the possibility of negative impact on India's interests seems to be strong. Despite the bitterness in political relations in the past years, religious pilgrimages and educational exchange programs have helped in increasing the closeness in cultural and social relations.

India and Bhutan

From a trade perspective, India is Bhutan's largest trading partner. India is playing an important role in the development of Bhutan's hydropower sector, where some projects have been completed and many are under construction. From a development assistance perspective, India provides significant development assistance to Bhutan and supports its five-year plans and various infrastructure projects. In the field of space cooperation, India launched India-Bhutan SAT in 2022 to assist in natural resource management. Rupay Card and Bhim App have been approved in the field of FIN TECH to strengthen financial integration. Hydropower concerns have always remained between India and Bhutan. Local and global concerns about the environmental impact of large-scale hydropower projects in Bhutan continue to be a major obstacle in social and cultural relations between the two countries. The BBIN Motor Vehicle Agreement aims to promote regional connectivity, but it still faces implementation challenges.

India and Afghanistan

India has played an important role in the reconstruction of Afghanistan since 2001. India has made a commendable contribution in the construction of dams, Parliament House, hospitals and roads in Afghanistan. The signing of the Strategic Partnership Agreement in 2011 gave a new direction to cooperation. In this cooperation, priority was given mainly to infrastructure, education and technological development. Under the High Impact Community Development

Projects (HICDP), an investment of more than \$120 million has been committed for community development projects in areas such as education, health and irrigation in 34 provinces of Afghanistan. India is trying to use the Chabahar port to promote access and trade with Central Asia through Afghanistan. Since the Taliban came to power in 2021, India is facing the challenge of re-establishing its relations with the new regime. India is working closely with Iran to provide trade and humanitarian assistance to Afghanistan through the Chabahar port.

India and Myanmar

India has contributed significantly to infrastructure development, energy projects and human resource development in Myanmar. Connectivity projects such as the India-Myanmar Thailand Trilateral Highway and the Kaladan Multi Modal Transit Transport Project are underway, which will boost trade and transport between the two countries. Myanmar is geopolitically important for India as it lies at the crossroads of India's neighborhood first and 'act East' policies.

India and Sri Lanka

Economic cooperation between India and Sri Lanka has played an important role. India is a major trading partner of Sri Lanka, and trade has increased after the free trade agreement between the two countries. In the field of defense cooperation, joint military exercises and naval exercises between India and Sri Lanka take place at various intervals. There is a dispute between India and Sri Lanka over the Kachchativu Island, which is a major issue for fishermen of Tamil Nadu. India has always been concerned about the rights and welfare of the Tamil minority community in Sri Lanka and has been pressing Sri Lanka to implement the 13th Amendment.

Table – 1

India's Export with Neighbor Countries (in Crore ₹)

S.N O	NAME OF COUNTRY	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1	Afghanistan	3397	4577	4992	7085	6106	4129	3495	2943	2696
2	Bangladesh	45740	55537	64392	58177	71509	120535	97785	91652	96999

3	Bhutan	3414	3520	4591	5235	5193	6605	8663	7980	10696
4	China	68251	85994	117289	117673	157202	158215	122774	137966	120616
5	Maldives	1325	1399	1557	1608	1452	4983	3835	7387	4743
6	Myanmar	7435	6227	8459	6910	5732	6665	6503	5549	5199
7	Nepal	36580	42624	54301	50713	50465	71939	64773	58275	62076
8	Pakistan	12222	12397	14427	5718	2415	3831	5020	9863	4720
9	Sri-Lanka	26238	28870	32996	26935	25857	43334	40923	34110	38503
	Total	204602	241145	303004	280054	325931	420236	353771	355725	346248
	Growth (Absolute)		36543	61859	-22950	45877	94305	-66465	1954	-9477
	Growth (Relative)		17.86	25.65	-7.57	16.38	28.93	-15.82	0.55	-2.66

Source : Directorate General of Foreign Trade

It is clear from the analysis of the above table that in the last 9 years, India's exports to its neighboring countries have seen positive growth from absolute and relative perspectives in 2017-18, 2018-19, 2020-21 and 2021-22. Out of these years, the growth in 2018-19 and 2021-22 being more than 25% is commendable. The growth rate in 2023-24 is nominal but it has worked to break the chain of disappointment by converting the previous negative growth into positive growth. Negative growth is seen from absolute and relative perspectives in 2019-20, 2022-23, 2024-25. Continuous negative growth is not seen in any two years, which shows positive thinking in export efforts. The main reason for the decline in exports in the year 2019-20 was the arrival of the Covid-19 pandemic, but the growth rate in the two years immediately following it has demonstrated the soundness of India's export policy. In the financial year 2022-23, weak global demand, weakness of the Indian rupee, high logistics cost, political and policy instability on the global stage, rising inflation and stagnation in service sector exports have played a role in causing a decline of 15.82% in the export rate. After this financial year, India cannot be said to be successful in increasing the export trade, but it has succeeded to some extent in preventing the previous situation.

Table – 2
India's Import with Neighbor Countries(in Crore ₹)

S. N O	NAME OF COUNTRY	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1	Afghanistan	1967	2797	3078	3766	3753	3806	3653	5327	5846
2	Bangladesh	4708	4420	7339	8975	8053	17450	16245	15269	16960
3	Bhutan	2063	2436	2590	2871	3214	4057	4310	2807	4354
4	China	411103	492236	492079	461525	482496	705123	790932	842386	959744
5	Maldives	61	37	147	42	181	517	4042	718	1001
6	Myanmar	7156	4120	3674	3911	3916	7485	7697	8914	12944
7	Nepal	2985	2825	3558	5045	4975	10208	6757	6879	10233
8	Pakistan	3049	3150	3476	98	18	19	157	24	4
9	Sri Lanka	4040	4977	10374	6407	4752	7530	8660	11804	11041
	Total	437132	516998	526315	492640	511358	756195	842453	894128	1022127
	Growth (Absolute)		79866	9317	-33675	18718	244837	86258	51675	127999
	Growth (Relative)		18.27	1.80	-6.40	3.80	47.88	11.41	6.13	14.32

Source : Directorate General of Foreign Trade

The above table shows India's import trend with its neighboring countries in the last 9 years. Apart from the year 2019-20, all other financial years are showing positive growth from absolute and relative perspective. Imports declined in 2019-20 due to the COVID-19 pandemic. The 47.88 percent increase in imports in the year 2021-22 can be seen as an effort to recover from the negative growth of 6.4% in the previous two years and the nominal positive growth of 3.8% in 2020-21. Reduction in the severity of the ill effects of Corona and increase in demand in the Indian economy have also been a reason for this. The growth rate of financial years 2017-18, 2022-23 and 2024-25 is also satisfactory. The import growth rate in financial years 2018-19, 2020-21 and 2023-24 is showing almost stability.

Table – 3
Percentage of India's Exports to its Neighboring Countries

S.NO	NAME OF COUNTRY	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1	Afghanistan	1.66	1.90	1.65	2.53	1.87	0.98	0.99	0.83	0.78
2	Bangladesh	22.36	23.03	21.25	20.77	21.94	28.68	27.64	25.76	28.01
3	Bhutan	1.67	1.46	1.52	1.87	1.59	1.57	2.45	2.24	3.09
4	China	33.36	35.66	38.71	42.02	48.23	37.65	34.70	38.78	34.84
5	Maldives	0.65	0.58	0.51	0.57	0.45	1.19	1.08	2.08	1.37
6	Myanmar	3.63	2.58	2.79	2.47	1.76	1.59	1.84	1.56	1.50
7	Nepal	17.88	17.68	17.92	18.11	15.48	17.12	18.31	16.38	17.93
8	Pakistan	5.97	5.14	4.76	2.04	0.74	0.91	1.42	2.77	1.36
9	Sri-Lanka	12.82	11.97	10.89	9.62	7.93	10.31	11.57	9.59	11.12
	Total	100	100	100	100	100	100	100	100	100

Source : Directorate General of Foreign Trade

The above table shows the percentage of India's exports to its neighboring countries in the last 9 years. Exports to Afghanistan were on an upward trend from 2016-17 to 2019-20 but after that it is showing a continuous decline, which is a matter of concern. The seriousness of the matter can be gauged from the fact that the export which was 1.66 percent in 2016-17 has come down to only 0.78 percent in 2024-25, that is, there has been a negative growth of percentage. Bangladesh is maintaining a position of about 20 to 28% in the exports made to the neighboring countries and from 2021-22, there is a significant increase in exports. Export trade with Bhutan has been 1.57 % to 3.09% and there is always volatility in the trade. A large part of India's exports to neighboring countries is being exported to China. There has been a progressive increase in it from the year 2016-17 to 2020-21, but after that it is witnessing a slight decline. Export trade with Maldives has ranged from 0.45% to 2.08%. There is also an uptrend in export trade with Maldives, but as an exception, its percentage in 2023-24 is much larger than in the past years. The percentage in export trade with Myanmar is continuously falling, which has reduced to less than half in 2024-25 as compared to 2016-17. The percentage of export trade with Nepal is showing balance. The export percentage has been 15.48 percent to 18.31%. Its

neutrality even during the Corona epidemic shows strong trade relations between India and Nepal. Deteriorating relations with Pakistan have always directly affected trade. In the last 9 years, its share in exports to neighboring countries has come down from 5.97% to 1.36 percent. After the year 2019-20, due to terrorist incidents, political relations between the two countries deteriorated, due to which trade relations also deteriorated and exports also remained untouched by this, the story of which is being told by the above figures. Exports to Sri Lanka have also maintained a stable percentage. The export percentage has decreased in 2019-20, 2020-21 as a result of Covid-19 but after that it has repeated its previous performance.

Table – 4

Percentage of India's Imports to its Neighboring Countries

S.NO	NAME OF COUNTRY	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1	Afghanistan	0.45	0.54	0.58	0.76	0.73	0.50	0.43	0.60	0.57
2	Bangladesh	1.08	0.85	1.39	1.82	1.57	2.31	1.93	1.71	1.66
3	Bhutan	0.47	0.47	0.49	0.58	0.63	0.54	0.51	0.31	0.43
4	China	94.05	95.21	93.50	93.68	94.36	93.25	93.88	94.21	93.90
5	Maldives	0.01	0.01	0.03	0.01	0.04	0.07	0.48	0.08	0.10
6	Myanmar	1.64	0.80	0.70	0.79	0.77	0.99	0.91	1.00	1.27
7	Nepal	0.68	0.55	0.68	1.02	0.97	1.35	0.80	0.77	1.00
8	Pakistan	0.70	0.61	0.66	0.02	0.00	0.00	0.02	0.00	0.00
9	Sri-Lanka	0.92	0.96	1.97	1.30	0.93	1.00	1.03	1.32	1.08
	Total	100	100	100	100	100	100	100	100	100

Source : Directorate General of Foreign Trade

The above table shows the percentage-wise imports made by India from its neighboring countries in the last 9 years. India imports about 94% of its imports from China alone and the remaining 6% with 8 countries. The import figures show the terrible situation of imbalance and also show India's dependence on China. There is always a danger of doing a large part of the import trade with a single country, that if the relations between the two countries deteriorate, the trade activities of the dependent country may be completely disrupted and it will be impossible to recover from the decline in the amount of profit due to the increase in both time

and cost in searching for another option. After 2019-20, import trade with Pakistan has become almost zero. Import trade with Maldives is also very low. Bangladesh, Myanmar, Nepal and Sri Lanka remain at a share of about one percent. Afghanistan and Bhutan are maintaining their position in the range of 0.5%.

Table – 5
India's Trade Balance (Deficit/Surplus) with its Neighboring Countries (in Crore ₹)

S. N O	NAME OF COUNTRY	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1	Afghanistan	1430	1780	1914	3319	2353	323	-158	-2384	-3150
2	Bangladesh	41032	51117	57053	49202	63456	103085	81540	76383	80039
3	Bhutan	1351	1084	2001	2364	1979	2548	4353	5173	6342
4	China	-342852	-406242	-374790	-343852	-325294	-546908	-668158	-704420	-839128
5	Maldives	1264	1362	1410	1566	1271	4466	-207	6669	3742
6	Myanmar	279	2107	4785	2999	1816	-820	-1194	-3365	-7745
7	Nepal	33595	39799	50743	45668	45490	61731	58016	51396	51843
8	Pakistan	9173	9247	10951	5620	2397	3812	4863	9839	4716
9	Sri-Lanka	22198	23893	22622	20528	21105	35804	32263	22306	27462

Source : Directorate General of Foreign Trade

The above table shows India's trade balance (deficit or surplus) with its neighboring countries. When a country exports less than its imports, it is called a trade deficit. India has the highest trade with China among its neighboring countries. While India trades about 38% of the total imports of neighboring countries with China and about 94% of its total exports, this difference is the main reason for the above trade deficit. Trade with most of the other countries is in a surplus position, which is contributing to reducing China's trade deficit. From 2016-17 to 2024 - 25, trade with Bangladesh, Bhutan, Nepal, Pakistan and Sri Lanka has been in surplus rather than deficit in any year and they have been the major centers of our exports. From the year 2022-23, imports with Afghanistan have increased compared to exports. The trade deficit with Myanmar has also been increasing continuously since 2021-22. Keep in mind that both these

countries were in a trade surplus situation before this. Trade deficit with Maldives can be seen as an exception only in 2022-23. From the study of the above data, it is known that till the year 2020-21, there was no trade deficit with any other neighboring countries except China, the main reason for this can also be the changing environment after Covid-19.

Table – 6

India's Foreign Trade in Perspective of Global Level and Asian Continent

	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Total import worldwide (in Crore ₹)	2577675	3001033	3595675	3360954	2915958
Total import with neighbor countries (in Crore ₹)	437132	516998	526315	492640	511358
% Import of neighbor countries with world	16.96	17.23	14.64	14.66	17.54
Total Export worldwide(in Crore ₹)	1849434	1956515	2307726	2219854	2159043
Total Export with neighbor countries (in Crore ₹)	204602	241145	303004	280054	325931
% Export of neighbor countries with world	11.06	12.33	13.13	12.62	15.10
Total Import with Asian continent (in Crore ₹)	1546334	1802415	2229852	2069770	1811555
% import of neighbor countries with Asian continent	28.27	28.68	23.60	23.80	28.23
Total Export with Asian continent (in Crore ₹)	923504	964579	1127258	1038582	1005425
% Export of neighbor countries with Asian continent	22.15	25.00	26.88	26.97	32.42
% import of Asian countries with total World	59.99	60.06	62.01	61.58	62.13
% Export of Asian countries with total World	49.93	49.30	48.85	46.79	46.57

	2021-2022	2022-2023	2023-2024	2024-2025
Total import worldwide (in Crore ₹)	4572775	5749801	5616042	6099261
Total import with neighbor countries (in Crore ₹)	756195	842453	894128	1022127
% Import of neighbor countries with world	16.54	14.65	15.92	16.76
Total Export worldwide(in Crore ₹)	3147021	3621550	3618952	3701907
Total Export with neighbor countries (in Crore ₹)	420236	353771	355725	346248
% Export of neighbor countries with world	13.35	9.77	9.83	9.35

Total Import with Asian continent (in Crore ₹)	2918573	3605034	3403195	3760500
% import of neighbor countries with Asian continent	25.91	23.37	26.27	27.18
Total Export with Asian continent (in Crore ₹)	1413148	1504610	1507500	1474063
% Export of neighbor countries with Asian continent	29.74	23.51	23.60	23.49
% import of Asian countries with total World	63.82	62.70	60.60	61.66
% Export of Asian countries with total World	44.90	41.55	41.66	39.82

Source : Directorate General of Foreign Trade

In the above table, India's total foreign trade has been shown in the perspective of global level and Asian continent. Imports and exports with neighboring countries have been seen in relation to global and Asian continent. Imports from neighboring countries have remained 14.5 percent to 17.5% of the total imports done globally. Imports from neighboring countries have been reduced as a result of COVID-19 and reduction in global demand in 2022-23. The import percentage has been the highest in the financial year 2017-18 and 2020-21. Looking at the trend of exports made with all the countries of the world, it is known that till 2020-21, India used to export more to its neighboring countries, but after that there is a continuous decline in it. The minimum has been 9.35 percent in the financial year 2024-25. This decline can be indicative of two situations, first there is a decline in trade relations with neighboring countries and second, there is an increase in exports with the rest of the world. If we analyze foreign trade with neighboring countries in the context of the Asian continent, the share of import trade with neighboring countries has ranged between 23.3% and 28.7%. Export trade has seen a continuous fluctuation in the last 9 years and it has ranged between 22.15 % and 32.42. Since the advent of Covid- 19 pandemic it was on growing trend but after that it has caught the declining path.

Conclusion

- India imports about 94% of its goods from neighboring countries from China, which shows its high dependence on its neighboring country. In the event of adverse and complex relations, it is not possible to find quick alternatives. As a result, India's commercial and consumer activities may face dire consequences.

- China and Bangladesh have been our strong partners from the export point of view. Then Nepal and Sri Lanka are also playing an important role in the export trade.
- India has recovered well from the sharp decline in imports from neighboring countries due to Covid-19, but there have been fluctuations in the export perspective, which is a matter of concern.
- The percentage of imports from neighboring countries has maintained a stable balance in comparison to the global level. But the progressive decrease in exports has negative and positive effects. The bitterness of political relations with neighboring countries shows negativity and the possibility of strong cordial relations with the remaining countries shows positivity.
- Trade deficit with China is constantly increasing which shows India's dependence on China. Afghanistan and Myanmar being in the category of trade deficit countries in the last few years is also making the danger of their dependence on other countries possible.

Suggestions

- India should try to increase its imports from Bangladesh, Myanmar, Nepal and Sri Lanka from 1% to 2%, import trade from Afghanistan and Bhutan from 0.5% to 1% and trade with Maldives to 0.5%. By adopting the above strategic approach, import dependence on China can be brought down to 85%.
- India should maintain strong political relations with China, Bangladesh, Nepal and Sri Lanka from an economic perspective and try to address export trade promotion efforts with Afghanistan, Bhutan, Maldives and Myanmar.
- India should step up export promotion efforts and strive to sustain progressive growth in export performance under adverse circumstances.

- Efforts should be made to continuously increase exports with neighboring countries to counter the adverse impact of the global economic slowdown due to the extreme divergence of developed economies.
- India should reduce the amount of imports from China and solve the problem of adverse trade balance by increasing exports. Efforts should be made to achieve the previously established balance with Afghanistan and Myanmar.

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SOCIAL MEDIA AS A CATALYST FOR ECONOMIC EMPOWERMENT AMONG INDIAN WOMEN: A LITERATURE BASED ANALYSIS

Rupam Gogiyar

Junior Research Fellow, Department of Commerce
SRT Campus, H.N.B. Garhwal University, Srinagar Garhwal, Uttarakhand, India
Email: roopam.sre@gmail.com

Ravi Kumar

Junior Research Fellow, Department of Commerce
SRT Campus, H.N.B. Garhwal University, Srinagar Garhwal, Uttarakhand, India
Email: phdscholar.kravi@gmail.com

Prof. Subodh Kumar Sharma

Professor, Department of Commerce, SRT Campus, H.N.B. Garhwal University,
Srinagar Garhwal, Uttarakhand, India
Email: drsksharma.in@gmail.com

Abstract

Despite significant advances in economic growth, India still grapples with persistent gender disparities in economic participation. Women contribute only 18% to the national GDP despite making up nearly half of the population. This study explores the role of social media platforms in enhancing women's economic empowerment, focusing on two key areas: access to financial resources and involvement in financial decision-making. Through a thorough literature review, this research examines how platforms like Instagram, YouTube, LinkedIn, and Facebook facilitate entrepreneurial activities, freelancing, content creation, and the sharing of financial knowledge among Indian women. It emphasizes that social media is a cost-effective and scalable tool for promoting employment and financial literacy, enabling women to engage more actively in the economy. However, the study also identifies significant challenges, including digital illiteracy, limited access to digital infrastructure, cyber harassment, and privacy concerns, which hinder women's effective use of these platforms. The findings highlight the transformative potential of information and communication technology (ICT), particularly social media, in closing gender gaps in economic participation while calling for activities to

mitigate associated risks and enhance digital inclusion.

Keywords: Women empowerment, social media, Economic empowerment, financial decision-making, financial knowledge.

Introduction

Gender disparity in economic participation raises global concern about women's economic empowerment due to its crucial role in accelerating the nation's growth and development (Hussain & Amin, 2018; Gupta, 2020; I. Gupta & Roy, 2023). The 5th goal of the Sustainable Development Agenda highlights gender disparity in different contexts, specifically among developing countries like India. India is currently strengthening its position as the world's fastest-growing economy, with a projected 6.7% growth rate. Women account for nearly half (48.4%) of the population but contribute only 18% to the GDP, falling below global average (The Economic Times, 2023). Key factor behind this challenge would be lack of access to financial resources due to low levels of women's employment participation and lack of participation in financial decision-making. In India women's labour force participation is only 21.7%, almost one-third compared to male participation. In fact, majority of employed women are working in the unorganised sectors or low-paying work (Indian Employment Report 2024 Team, 2024; I. Gupta & Roy, 2023) and lack independent decision-making capability, especially in financial matters (Banerjee et al., 2022). This gender gap in employment and decision-making participation has remained a challenge over the two decades, highlighting that women's status in India is worse. Hence, the country needs to empower women to ensure their economic contribution and achieve gender equality (Chandra Debnath et al., 2020; Gupta, 2020).

Empowerment is an active process that enables people to realise their power in multidimensional spheres of life, such as social, political and economic (Malhotra & Schuler, 2002). It ensures decision-making rights among women equal to men in the context of almost all the fields of life such as health, education, marriage, mobility, social interactions, employment, and so on which raise their status in society. The economic dimension is the key to achieving empowerment in other domains, measured based on multiple sub-dimensions specific to the concern under study. Access to financial resources and participation in financial decision-making are key dimensions of economic empowerment (I. Gupta & Roy, 2023; Showkat et al., 2025). According to the Bill & Melinda Gates Foundation (2021), women are

said to be economically empowered when they have access to and control over financial resources to participate in economic decisions effectively.

Recognizing the importance of economic empowerment of women in the nation's growth. The Indian government, NGOs, and other institutions have introduced various initiatives to promote employment opportunities for women in society. However, these efforts are insufficient to achieve its targeted objective effectively some key reasons behind this failure are as follows: lack of confidence, illiteracy, lack of knowledge and awareness towards available opportunities, etc. (M. Gupta, 2020; Chandra Debnath et al., 2020). Women's studies suggest that these factors can be addressed using Information & Communication Technology (ICT) enabled services such as social media platforms (Hussain & Amin, 2018; Nord et al., 2016).

Social media platforms stand out as a highly effective and fastest medium to disseminate information and raise awareness with minimal efforts to the broader population (Melissa et al., 2015; Ju et al., 2023). In the digitalization era, social media is widely adopted in India, with 462 million active social media users, of whom 31.4% are women (Simon Kemp, 2024).

Social media platforms such as Instagram, YouTube, LinkedIn, and Facebook were initially limited to communication and social interaction among users to build social capital. However, these platforms have also emerged as powerful tools for engaging in economic activities and generating income through content creation, expanding existing businesses in online space, entrepreneurship, and freelancing. These platforms facilitate knowledge sharing, enabling individuals to develop entrepreneurial skills. Additionally, the widespread reach of social networks allows businesses to connect with a diverse customer base, enhancing market accessibility and business growth. Beyond income generation sources, social media platforms play a crucial role in enhancing financial and digital, equipping individuals with the knowledge and skills necessary to ensure their participation in household financial decisions and autonomy in personal financial decisions. While existing research explores the role of social media in women's empowerment through employment opportunities, current studies adopt a broader perspective by examining its influence on employment and decision-making ability considering fundamental indicators of economic empowerment.

Roadmap: Current research is structured into seven sections. Section I, introduces the study. Section II, outlines the research objectives. Section III, presents a literature review includes various headings and subheadings ensuring the fulfilment of the first two objectives of the study. Section IV, represents research methodology. Section V, involves key challenges

associated with social media. Section VI, explains discussion and conclusions. Section VII covers limitations and future scope. Finally, the research is authenticated with the references section.

Research Objectives

The following are the objectives of the Study:

- To access the status of women empowerment in India.
- To review the existing literature to get insight into the effectiveness of social media platforms in accelerating women's economic empowerment.
- To evaluate the challenges of using social media platforms for women's economic empowerment.

Literature Review

Status of women empowerment in India.

During the Vedic period, women enjoyed empowerment in almost every domain (Ghosh, 1996). However, their status declined over time, and reached its worse during the Mughal period. This deterioration drew the attention of various leaders and social reformers who recognized the significance of women's empowerment in achieving economic growth. After Independence, gender equality was introduced in the constitution, and the government introduced various policies and programs to enhance empowerment among several domains such as economic participation, raising their voice against domestic and social violence, freedom of mobility, healthcare decisions, political participation, financial literacy, right to vote etc. These domains can comprise three significant dimensions of women's empowerment: social, political, and economic. Most of the existing literatures measured economic empowered status of women based on two key indicators: Access to financial resources which is possible through their active participation in labour force and ability to make financial decisions. Indian women generally restricted access to financial resources due to low level of economic participation, in fact decline in paid activities (Singh & Pattanaik, 2019) and their involvement in decision-making processes has been minimal. Historical evidence shows that women have faced significant barriers in achieving financial independence and empowerment, with inadequate financial literacy further worsening their economic condition over time (Patkar, 1995).

Although the situation is gradually improving, the current status of women's labour-force participation is 41.7% during 2023-24, which is 30% in 2019-20, which highlights an upliftment in labour-force participation of women in both rural and urban areas, the same for males is 78.8% in 2023-24 which clearly indicates there is still existence of gender disparity of economic participation. A low level of women's labour force participation leads to a lack of access to financial resources among women, hampers not only the financial well-being but also their economic participation.

Discussion

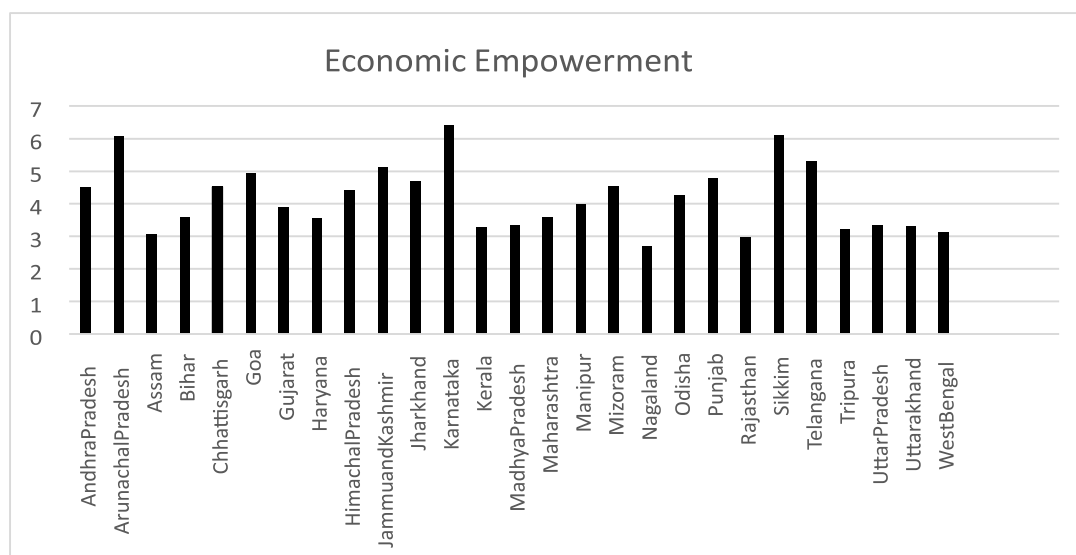
Table 1 *Gender-wise Labour Force Participation*

Labour Force Participation Rate (LFPR) in usual status (ps+ss) for persons of age 15 years and above						
survey period	Rural		Urban		Rural + Urban	
	Male	Female	Male	Female	Male	Female
2019-20	77.9	33	74.6	23.3	76.8	30
2020-21	78.1	36.5	74.6	23.2	77	32.5
2021-22	78.2	36.6	74.7	23.8	77.2	32.8
2022-23	80.2	41.5	74.5	25.4	78.5	37
2023-24	80.2	47.6	75.6	28	78.8	41.7

Source: PIB. (2024a)

Further, Vignitha et al., (2024) provides a detailed analysis of women's empowerment in India using data from the National Family Health Survey-5 (2019–2021). It focuses on assessing and comparing economic empowerment scores across states, in the context of employment status of women, access to money, credit, and freedom of movement and ownership of economic assets by women in India showed the lowest in Nagaland with 2.68 followed by Rajasthan and Assam and the highest in Karnataka with 6.41.

Figure 1 *State wise status of Economic Empowerment in India*



Source: Vignitha et al., (2024)

Social Media Platforms and women's economic empowerment

Empowerment is a process that contributes to the growth and development of individuals in multiple dimensions, such as social, political and economics (Hussain & Amin, 2018; AlAmmar, 2022; Malhotra & Schuler, 2002). Economic empowerment is defined as a process which involves creating opportunities for women to enhance their involvement in entrepreneur activities and ensuring their participation in economic decision-making (Golzar, 2020; Showkat et al., 2025; Besnier et al., 2024; C S Mohapatra & Depannita Ghosh, 2024). It is also defined as the process by which women increase their right to economic resources and power to make decisions that benefit themselves, their families and communities (Hordofa & Badore, 2023).

Economic empowerment has complexity and multidimensional nature, make it challenging to cover all indicators within a single study. Therefore, only those indicators that are most relevant to the specific context under consideration should be selected. In the current study access to financial resources and participation in financial decision-making are two significant indicators of the economic empowerment index.

Women involved in economic activities to earn income or significantly contribute to family earnings and get greater control over their earning and saving decisions are more likely to be empowered than other women. A study revealed that income and education are among the several factors such as age, property ownership, education, training social networks and so on that significantly influence women's economic empowerment in the agriculture sector (Hordofa & Badore, 2023).

India's rapid economic growth has significantly influenced employment, with a 36% increase (170 million jobs) in the employment rate over the past three years PIB. (2024b). However, India continues to face the highest gender gaps in economic participation, ranking 142nd out of 146 countries in the world (Eliza Jo Varghese, 2025). Even status of working women is more shameful as most of them are engaged in the agricultural sector or low-paid jobs and low literacy levels. Furthermore, India's patriarchal society structure perpetuates male dominance not only over access and control of economic resources but also over financial decision-making, negatively impacting the country's economic growth.

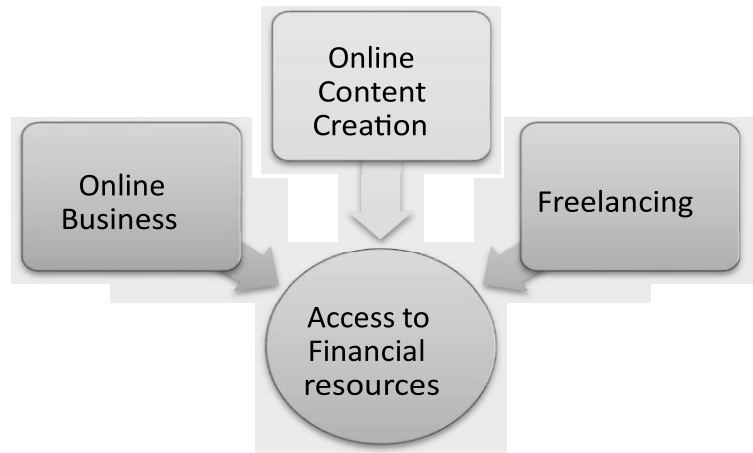
Recognizing the importance of gender equality in economic participation the Government of India has introduced various initiatives to provide access to financial resources such as subsidies to start their businesses and Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) one of the largest employment generation schemes. However, these efforts have had limited success in achieving their intended goals. Indian women's labour force participation remains among the lowest globally. Research indicates that despite women's aspirations to start their businesses lack of awareness, social barriers, low levels of literacy, limited access to funding, and lack of entrepreneurial skills restricted them from effective participation in economic activities (Lavilles et al., 2023; Chandra Debnath et al., 2020; Gupta, 2020, p.02). These challenges could be eliminated by using information and communication technology (ICT) effectively.

ICTs has brought new hopes to women's entrepreneurs by enabling reach to online market, access to information, online marketing etc in cost-effectively manner (Melissa et al., 2015; Nord et al., 2016; Akhter & Al-Zaman, 2024). ICT provides a wide range of technologies from which social media is widely used especially among youth. Social media has been adopted for real-time information access, information dissemination, and social support seeking across social groups. Social media tools such as Instagram, Snapchat, LinkedIn, YouTube, etc., are primarily utilized for social interactions and knowledge sharing. However, in the present era they have evolved to empower users through transition from being job seekers to job owners (AlAmmary, 2022).

Social-Media and Earning opportunities

Social media platforms is cost-effective and influential communication medium critical to women's empowerment (Nord et al., 2016). It facilitates women's engagement in internet-based activities such as online business, freelancing, and content creation (Akhter & Al-Zaman, 2024). These activities raise opportunities to earn income via social media platforms.

Figure 2 *Social-Media based source of access to financial resources*



Source: Akhter & Al-Zaman, 2024

Social media platforms make it possible to start online businesses with a nominal investment, as there is no need for physical infrastructure (AlAmmary, 2022; Melissa et al., 2015). Starting an online business has numerous benefits such as low cost, broad reach, immediate feedback, customer interaction, convenience, etc. (Beninger et al., 2016; Lavilles et al., 2023). A study stated that online environment offers new opportunities for women to expand their economic participation by marketing their products and services, connecting with peers and establishing business contacts through interaction with the global community and all these significantly contribute to their business growth (Golzard, 2020). 24/7 availability to manage their business conveniently allow them to balance household responsibilities and professional goals simultaneously. Therefore, social media platforms provide the flexibility needed for economic independence and work-life- balance. In India, women generally engage in manufacturing home-made products often face limited market reach, which hampers their earning potential. However, social media platforms have emerged as powerful tool to expand their business reach to wider online market. Furthermore, increased social interactions through digital platforms strengthen business relationships, leading to greater customer loyalty (Hajli, 2015; Chandra Debnath et al., 2020).

Freelancing involves short-term contract-based jobs that rely on an individual's skills and expertise. Freelancers are considered self-employed professionals who often manage multiple

projects with different clients simultaneously (Salamon, 2020). They enjoy freedom to choose their work and have flexibility in setting their service rates. However, finding clients through traditional methods can be challenging. With the rise of social media platforms freelancing has become a cornerstone of the gig economy, as it now makes it easier for freelancers to connect with clients globally including major brands and also enhance the sphere of opportunities across various domains such as video editing, graphic design, web design, photography, videography, and more (Upwork team, 2025)

Some social media users engage in content-creating activities to earn income from social media platforms (Hajli, 2015; Akhter & Al-Zaman, 2024). Monetisation is a prominent feature of social media platforms that allow content creators to earn revenue through advertisements placed alongside their content. This is especially common on platform where short ads often appear before videos begin. To access monetisation benefits, creators must meet certain eligibility criteria such as achieving a specific number of subscribers, total watching hours, and maintaining an active presence on these platforms. These conditions vary from platform to platform, as each has its own monetisation policies. In addition to ad revenue, creators can further expand their income by collaborating with brands for sponsored content, turning their channels into profitable business ventures.

Social media and Financial decision-making ability

Providing employment opportunity is not sufficient to promote their economic empowerment until they participate in the decision-making at both household and individual levels (Showkat et al., 2025). Mere access to financial resources is only one indicator of economic empowerment; women also need to poses ability to participate in financial decision-making independently to achieve true empowerment. Hence, decision-making ability is another key domain of economic empowerment. However, Indian women generally lack confident to involved in decision regarding financial matters and lead to dependency on male members for the same.

According to the UN Women report, even working women depend on spouses and parents for their financial decisions including investments and those who have their personal bank account use it in a limited manner (Nandi et al., 2020). Gender disparity in decision-making particularly in financial matters has become a crucial challenge for decades (Banerjee et al., 2022). This dependency needs to be resolved because it can lead to financial anxiety, hamper financial well-being and a low level of standard of living. There could be several factors contribute to this

dependency persistence of patriarchal culture in India, including limited access to resources, limited technical knowledge, illiteracy level, and other social-economic barriers. However, among all financial knowledge emerges as a central and critical factor (Singh & Kumar, 2017). Limited financial knowledge and awareness prevent women from making informed financial choices, reinforcing their dependence and further widening the gender inequality in financial decision-making and negatively influencing women's economic empowerment.

The existing literature emphasizes the importance of financial knowledge in boosting confidence to make independent decisions. However, traditional financial literacy programs have limited outreach especially among women of remote or underserved areas. In contrast, social media platforms offer an accessible and interactive medium through which financial institutions, influencers, and users share valuable information about budgeting, saving, investment, and cyber security behaviour (Yanto et al., 2021; Olajide et al., 2024). The perceived credibility and accuracy of social media financial advertisement play a vital role in shaping their investment intentions (Dogra et al., 2024). Hence, Social media advertisements have emerged as a key source of financial information. This tends to critically assess the financial content available on these platforms, which significantly influences their financial decision-making ability.

Social Media Platforms: Key highlights of Instagram, LinkedIn, YouTube, and Facebook

Instagram- One of the social networking platforms that enables users to share information and entertain themselves through posting and sharing photos, videos, and reels. Instagram is among the most popular platforms in India, especially among youth. Instagram provides businesses valuable opportunities to promote their products and services through celebrities and influencers in a cost and time-effective manner. Nearly 90% of users follow at least one business profile and often visit the platform before purchase of goods and services for seeking information, customers reviews, trends and other market and product information (Kate Bojkov, 2024). Due to its wider audience businesses are also increasingly adopting social media advertising techniques for marketing product and services on online mode but also creates income-generating opportunities for content creators through monetization, brand collaborations, and paid promotions.

Instagram is not limited to advertising it is also widely used to conduct online businesses. The platform facilitates to create business pages, showcase of their products and services, and

ensures effective customer engagement through interactive stories, new content posts, comments, and reviews (Agrawal, 2022; Kiely Kuligowski, 2024).

Its broad reach and networking capabilities help users find new clients and collaborate with other freelancers and service providers, thereby enhancing skills and advancing careers as freelancers.

LinkedIn- It is a professional social networking platform widely recognized for business networking and career development. It facilitates job seekers to upload their curriculum vitae (CVs) and self-presentations in a manner that creates their profile for a favourable impression on potential recruiters and companies looking for capable employees (Ahuja, 2024; Knight, 2019). LinkedIn is also known for offering freelance project opportunities to gig workers. Users can showcase their skills and experience through posts, thereby attracting clients for project-based work (Salamon, 2020). LinkedIn is known for its feature of building professional relationships to promote career opportunities. It is also used for marketing purposes through banner-based advertisement (Natarajan et al., 2014).

This platform is also well-known for sharing valuable information. Social media users frequently disseminate insights, opinions, and concerns about various financial topics. Such content can significantly contribute to raising awareness and enhancing the financial literacy levels of other users. By engaging in these discussions and shared experiences, users can stay informed about financial trends, practices, and decision-making strategies.

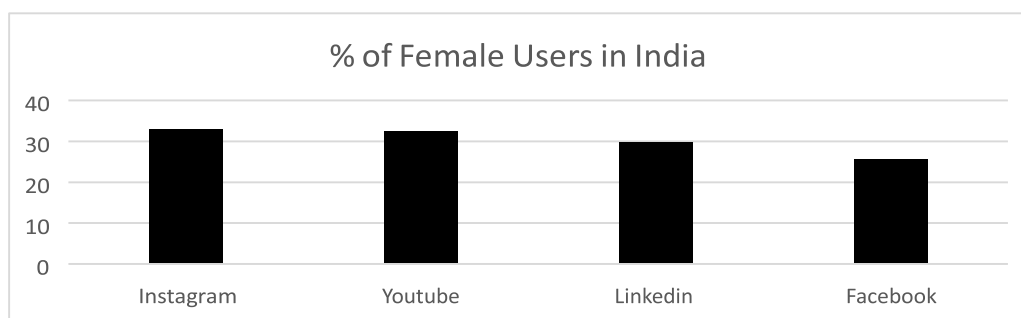
However, studies have shown that women often face disadvantages compared to men in securing specific job opportunities on LinkedIn (Ahuja, 2024). This disparity is primarily due to a lack of essential skills such as professional self-promotion, effective communication, and entrepreneurial abilities. These skill gaps hinder women from fully benefiting from LinkedIn's opportunities.

YouTube- A online video-sharing platform owned by Google, YouTube one of the most visited websites in the world. In India, there has been a significant rise in the number of women YouTubers in recent years (Shriyesh Sonekar, 2025), with many gaining substantial subscriber bases. It facilitates a vast learning content and entertainment database through shorts, music, movies, etc. However, it widely serves as a powerful medium for accessing educational content across various domains including entrepreneurial skills, refining freelancing skills and financial knowledge. The study concluded that among social media platforms, banks

significantly utilised YouTube to generate awareness regarding the effective use of financial products (Kuchciak & Wiktorowicz, 2021).

Facebook - According to Dasgupta, (2021) Facebook offers a wide range of powerful free and paid tools that businesses can leverage to market their products and services. Financial institutions primarily utilize Facebook's paid advertising services to disseminate information on how to use various financial products (Kuchciak & Wiktorowicz, 2021). Additionally, Facebook supports the growth of internet-based businesses through features like Facebook Shops and Marketplace enabling users to directly list and sell their products and services (Agrawal, 2022). The platform also provides a Content Monetization (beta) feature that allows content creators to earn revenue through integrated ads. Moreover, Facebook facilitates social interactions that helps freelancers to connect with potential clients and expand their professional networks.

Figure 3 Social- Media adoption by female in India



Source: T. R. Behera, 2024

Table 2 Comprehensive summary of literature reviewed

Social Media Platforms/ Opportunities	Instagram	YouTube	LinkedIn	Facebook
% of female users in India	32.8	32.4	29.7	25.5

Online Business	The business Page feature offers a list of product details available for direct purchase from the platform and immediate feedback via review. Platforms also help to reach wider potential consumers through influencer marketing	Individuals can develop entrepreneurial skills by watching video content. Also utilized as a marketing tool by business	Widely used for marketing products and services through paid advertisement.	Business page and marketplace features on Facebook enable online business by offering products and services for purchase to the broader audience of the platform, which is also used to gain attention through advertisements.
Freelancing	freelancers attract more clients by showcasing their work through social media posts and targeted advertisement	Enable freelancers to enhance their skills and knowledge by accessing a wide range of learning content available on the platform.	Supports professional relationship building, offering opportunities to connect with companies and networks in their field of expertise.	Connecting with potential clients, building strong employer employee relationships, and using advertisements to increase visibility and engagement are helpful.

Content Creation	It provides a versatile platform to showcase their creativity to a broader audience. This Platform offers a wide range of content creation opportunities, such as vlogging, blogging, reels and shorts.	It allows creators to share video content for both entertainment and information dissemination purposes. Sharing video content in the context of entertainment and information.	Includes professional content such as text posts, images and documentation. It helps content creators establish credibility and build professional links.	It allows users to share diverse content formats, such as photos, videos, text, reels, shorts, etc., in different domains to interact with followers and create social connections.
Financial Knowledge	Advertisements and user-generated content on financial aspects available on platforms that contribute towards financial knowledge of content consumers	Renowned for its vast educational content repository, it is a significant platform for learning about different terminologies regarding financial decisions such as savings, investments, budgeting, etc.	Often, users share personal experiences and professional insights that influence the financial knowledge of their networks.	Widely used by banks and other financial institutions to advertise financial products. Additionally, the platform offers a variety of content sources that collectively support the financial knowledge of its users.

Source: (Agrawal, 2022; Kate Bojkov, 2024; Kiely Kuligowski, 2024; Kuchciak & Wiktorowicz, 2021; Natarajan et al., 2014; Salamon, 2020; Shriyesh Sonekar, 2025; T. R. Behera, 2024)

Research Methodology

A literature-review-based research design was adopted to gain insights into the current aspect, which includes collecting information from various secondary sources such as scholarly literature, statistical data from government websites, articles, books and latest reports (Odine, 2013). To ensure the effectiveness of the collected data, literature was selected only from peer reviewed and reputable journals such as Elsevier, Springer, Taylor and Francis and Emerald. Additionally, citation frequency was considered to filter high-quality literature for inclusion in the study.

Since the study was conducted on a broader scale rather than being limited to a specific region of India, going for empirical research or collecting primary data for the current study is merely not possible at this instance because the majority of women in India may not be able to respond effectively to survey questions due to possessing a lower level of financial literacy, decision-making ability, and empowerment. Therefore, conducting a literature review survey method is assumed to be highly significant for the study. This method allows researchers to use multiple databases to compile, summarise, and analyse data rather than rely on a single database. This approach ensures a comprehensive and well-rounded understanding of the role of social media platforms in facilitating economic empowerment opportunities among Indian women. The current study discussed the role of some of the most popular social media platforms, such as Instagram, YouTube, LinkedIn, and Facebook, in boosting women's empowerment. These platforms have been selected as the percentage of women users is higher on these four platforms in India. Each platform has features- LinkedIn is used for professional networking and blogging, YouTube is popular for disseminating information through vlogging, and Facebook and Instagram are mainly used for entertainment and creating social groups. However, each platform has the potential to provide opportunities to have access to financial resources and financial knowledge to a diversified women population.

Challenges of Using Social Media Platforms

As every coin has two sides, technology also comes with both benefits and challenges. No doubt, social media platforms bring numerous benefits and opportunities in the form of creating social and professional networks, communication and marketing of a product and services to the internet population, easy reach to a job advertisement, earnings through creating own content and raising knowledge and awareness through informative, creative and entertaining content, etc. but it also has some challenges or limitations that restrict users to benefit in an

effective manner. This section highlighted challenges faced by social media women users in achieving the goal of economic empowerment. Based on the literature, some significant challenges have been identified, including Limited access to the internet or other digital infrastructure, Low level of Digital literacy, Cyberbullying and harassment, and Privacy Security risks (Akhter & Al-Zaman, 2024; Boruah, 2024).

Figure 4 *Challenges for women using social media platforms*



Source: Authors own creation

- **Limited access** – India is a country where ICT adoption is increasing drastically due to sizable disparity based on socio-economic and geographical factors (Asrani, 2022). ICT enabled techniques such as Social Media Platforms facilitate communication, access to information, a platform to raise voices, create social networks and avail various services rendered by suppliers beyond boundaries with just a few clicks, but to avail of these benefits, one must need digital infrastructure such as Internet, Mobile phone, Laptop and so on. Unequal access to digital infrastructure limits access to technology, a significant barrier to women's participation in online platforms, restricting their engagement and opportunities (Jafar et al., 2023; Laskar, 2023)

The Digital India program (DIP) is an initiative of the government of India aimed to transform the country into a digitally empowered and knowledge-based society by expanding digital access, especially in rural areas (Sindakis & Showkat, 2024). DIP has played a vital role in providing access to digital infrastructure, especially in digitally

empowering women in rural areas. However, there is evidence of significant disparity in the context of access to digital infrastructure nationwide. ICT-enabled technology, specifically social media usage, is tremendously growing in India. However, access to these technologies in rural areas continues to lag mainly due to limited internet access and inadequate digital assets compared to urban areas. This substantially shows the disparity in social media usage based on geographic factors. According to Statista Report 2024, the rate of social media usage was 59% in urban areas whereas it was only 35% in rural areas (Manya Rathore, 2025).

- **Low level of Digital literacy** – Social media platforms are a crucial component of Information and Communication Technology (ICT) that requires essential skills and knowledge for the effective utilization of the services and to grow in the digital era. However, Indian people especially women continue to face the challenge of digital literacy, with a significant portion of the population lacking the necessary skills to navigate the digital landscape. Generally, people live in rural and under-resourced urban areas have either low levels of digital literacy or lack basic knowledge of digital tools (Laskar, 2023). In the journey of economic empowerment through social media platforms, one must require digital knowledge to navigate digital platforms effectively. The concern of digital literacy has become even more critical after demonetization, as financial services have transitioned mainly to online platforms. Raise the need to possess not only basic digital literacy but also digital literacy in a financial manner. To address this issue, the Government of India has launched various initiatives such as the National Digital Literacy Mission (NDLM), Digital Saksharta Abhiyan (DISHA), and Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA). These programs aim to enhance knowledge about practical usage and Awareness of threats or risks associated with digital tools, particularly among rural women. Equipped people with the necessary digital skills, these initiatives empower individuals to make informed decisions, contributing to overall socio-economic progress (Asrani, 2022). Despite these efforts, Indian women remain hesitant or unconfident about using digital tools.
- **Cyberbullying and harassment** - Social media platforms undoubtedly provide women with opportunities for economic growth by enabling their participation in economic activities, thereby contributing to their economic empowerment. However, these platforms remain ineffective in protecting women from online harassment. Online harassment includes repeated misbehaviour by individuals posting and sending

unethical messages, sharing or false content against the victims and threatening to share the patient's personal information publicly (Abarna et al., 2022; Kaur & Saini, 2023). Researchers highlighted that among major cybercrimes; online harassment ranks as the most prevalent issue (Abarna et al., 2022).

A Study identified various factors responsible for cyber victimization, including gender, area of residence, qualification, number of hours of social media usage and parent's talk and among these, the number of hours of social media usage emerged as the most significant factor according to the study findings individual with higher social media usage are more likely to experience bullying compared to others (Kaur & Saini, 2023). Cyberbullying and harassment not only cause emotional distress, anxiety, and depression but can also lead to severe mental health issues, including suicidal thoughts.

- **Privacy risks** - Social networking platforms are primarily used for sharing photos, videos, and other information to enhance social capital without geographical and economic limitations, which increases vulnerability to cyber threats such as hacking, phishing, spam and other manipulation by third parties generally to cause financial harm (Xie & Karan, 2019). Knowing the perceived organizational and social threats, individuals tend to control the information they share while using online social networks (Krasnova et al., 2009). However, many users, particularly online shoppers, unknowingly disclose some crucial information due to a lack of Awareness, knowledge, and concern about technological ubiquity (Xie & Karan, 2019). Sometimes, job seekers are attracted to fake job advertisements and share their personal information with unknown parties.

A study suggests several easy-to-implement precautions to mitigate privacy risks, such as avoiding personal email IDs for social media logins, being cautious of unknown links and third-party applications, and using strong passwords (Rathore et al., 2017). These measures can help users protect their privacy to some extent, as with time, malicious users and third-party organizations update themselves and introduce unique tricks to make frauds. Therefore, only those with the knowledge and skill to stay informed and aware of emerging threats can effectively safeguard their privacy.

Discussion and Conclusion

The findings of this study reinforce the growing importance of digital platforms—particularly social media—in supporting women's economic empowerment in India. The economic

dimension of empowerment, defined as access to financial resources and decision-making autonomy, has historically remained out of reach for many Indian women due to systemic issues, including low literacy levels, limited labour force participation, and socio-cultural constraints (Chattopadhyay et al., 2023).

Social media platforms such as Instagram, YouTube, LinkedIn, and Facebook are no longer limited to social networking but have evolved into powerful tools for economic engagement. These platforms enable women to engage in entrepreneurial ventures, freelancing, content creation, and learning opportunities with minimal (Sachdeva et al., 2024). This flexibility is especially crucial in a patriarchal society where many women juggle domestic responsibilities alongside professional ambitions (Gandhavalla Ganiger, 2024).

Furthermore, the study highlights that social media also improves women's financial literacy—a critical yet often overlooked aspect of economic empowerment. Through access to content on budgeting, savings, investments, and financial products, women can build confidence in making independent financial decisions (Showkat et al., 2025). This ability is vital in combating the traditional male-dominated decision-making landscape in Indian households (Banerjee et al., 2022).

However, the potential for empowerment of social media is not without limitations. Digital literacy remains significantly lower among women, particularly in rural areas, where only 21% of females above age 15 possess basic digital knowledge (Anjali Ram, 2024). Coupled with limited internet access and infrastructure, especially in non-urban settings, the digital divide hinders equitable participation (Aiswarya, 2025). Additionally, cyberbullying, harassment, and privacy threats pose serious risks that can discourage women from fully engaging on these platforms (Sambasivan et al., 2019).

Given these insights, the study concludes that while social media offers immense potential to foster women's economic empowerment, realizing this potential requires an enabling digital ecosystem. This includes targeted digital literacy programs, stricter cyber safety regulations, and inclusive policy frameworks to bridge the digital gender divide. Government initiatives such as Digital India and PMGDISHA are steps in the right direction, but their implementation needs to be strengthened, particularly in rural and underprivileged communities (Anita Gurumurthy & Nandhini Chami, 2018; Showkat et al., 2025).

In sum, integrating social media into India's women empowerment strategies can catalyse broader socio-economic transformation, but it must be supported by structural changes to ensure equitable access, digital safety, and financial inclusivity.

Limitations and Future Scope

The study is subject to several limitations. Firstly, due to time and resource constraints, as well as other factors outlined in the methodology section, the research design is purely based on a literature review rather than an empirical investigation. Future researchers and academicians are encouraged to undertake primary data- based studies to provide deeper insights into the topic. Secondly, most of studies were carried out outside India, therefore, this study contributes to the existing body of knowledge and serves as a foundational reference for future research in Indian Scenario. Further, current study covers one demographic variable; women only, future research could expand the scope by examining factors such as income, age, gender disparity and regional differences for a more comprehensive understanding. Lastly, the study considered only a limited set of latent variables related to economic empowerment. Future researchers can incorporate a broader range of indicators such as access to credit, ownership of assets, health care, mobility, etc. to gain a more comprehensive understanding of economic empowerment.

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OPEN NETWORK FOR DIGITAL COMMERCE (ONDC) AND THE FUTURE OF E-COMMERCE IN INDIA: TOWARDS AN OPEN AND INCLUSIVE DIGITAL MARKETPLACE

Tushar Dhiman

Research Scholar, Faculty of Management Studies
Gurukula Kangri (Deemed to be University) Haridwar (Uttarakhand)
Email- tushardhiman.gkv@gmail.com

Pankaj Madan

Professor, Faculty of Management Studies
Gurukula Kangri (Deemed to be University) Haridwar (Uttarakhand)
Email- pankaj.madan@gkv.ac.in

Abstract

This research paper critically examines the transformative role of the ONDC in reshaping India's e-commerce ecosystem. Conceptualized as a digital public infrastructure, ONDC aims to democratize digital commerce by unbundling and decentralizing platform monopolies, thereby empowering micro, small, and medium enterprises (MSMEs), especially those traditionally excluded from mainstream e-commerce. The paper situates ONDC within the broader policy landscape of India Stack, Digital Public Infrastructure (DPI), and frameworks like the Open Credit Enablement Network (OCEN). Through a multidisciplinary lens, it evaluates ONDC's technological architecture, policy design, and operational mechanisms. The study delves into the socio-economic implications of ONDC, analyzing its potential to promote inclusivity, enhance consumer choice, and enable interoperability across diverse buyer and seller applications. It also investigates adoption challenges, infrastructural limitations, trust-building among stakeholders, and the readiness of small businesses to adapt to an open-network paradigm. Emphasis is placed on the empowerment of marginalized groups, including women and specially-abled entrepreneurs, in the context of India's MSME clusters. By triangulating secondary data, policy analysis, and conceptual frameworks, the paper provides a nuanced understanding of ONDC's potential and pitfalls. It argues that while ONDC promises to disrupt conventional digital marketplaces, its success hinges on effective policy alignment, user-centric design, digital literacy, and robust grievance redressal mechanisms. The research concludes by

suggesting a roadmap for sustainable implementation, advocating for collaborative governance and continuous capacity-building to ensure equitable participation. This study contributes to the growing discourse on open digital ecosystems and their role in shaping inclusive, resilient digital economies in the Global South.

Keywords: Open Network for Digital Commerce, E-Commerce, Digital Marketplace, Open Credit Enablement Network.

Introduction

The Indian e-commerce sector has witnessed an unprecedented surge over the last decade, driven by increasing internet penetration, digital payment systems, mobile adoption, and a growing middle-class consumer base. However, despite the rapid expansion, the digital commerce space in India has largely been dominated by a few tech giants, creating monopolistic tendencies that challenge the principles of inclusivity and equal access. Because of the ONDC- an initiative from the government- the digital commerce landscape is changing because it focuses on bringing open protocols and interoperable tools to everyone. The Department for Promotion of Industry and Internal Trade (DPIIT) has designed ONDC to help uncover the e-commerce sector and strengthen the position of all traders throughout the country. The ONDC framework seeks to eliminate the dependency on platform-centric e-commerce models by introducing a neutral and open network layer, where sellers and buyers can transact regardless of the specific platforms they use. This approach contrasts starkly with the traditional ‘walled garden’ ecosystems dominated by a handful of private entities, such as Amazon and Flipkart, which control both consumer interfaces and backend logistics. Scholars argue that this concentration of digital power has led to practices such as predatory pricing, algorithmic bias, and exclusion of small and medium-sized enterprises (SMEs) from the mainstream digital economy. ONDC, through its architecture and policy direction, aspires to reverse this trend by empowering Micro, Small, and Medium Enterprises (MSMEs) and promoting innovation and consumer choice.

India’s ONDC project is built on the principles of Digital Public Infrastructure (DPI), similar in spirit to transformative initiatives like Aadhaar, UPI (Unified Payments Interface), and DigiLocker. These foundational layers of digital governance have already played a critical role in expanding financial and identity inclusion across the country. ONDC aspires to become the fourth pillar of this stack- an e-commerce infrastructure that is non-discriminatory, transparent, and accessible to all ecosystem participants. By leveraging APIs and open-source protocols,

the ONDC model ensures interoperability between different service providers- including logistics, warehousing, payments, cataloging, and order management- thereby facilitating a plug-and-play model for new entrants and existing players alike.

Multiple researchers have emphasized that ONDC holds the potential to transform not just retail commerce but also adjacent sectors like food delivery, mobility, grocery supply chains, and even services like home repair and diagnostics. Moreover, ONDC's core value proposition lies in its ability to standardize transactions across heterogeneous digital platforms, thereby improving transparency, discoverability, and data portability. This will particularly benefit Tier-II and Tier-III cities and rural areas, where traditional platforms have limited reach and onboarding costs are prohibitive for local businesses. In this way, ONDC is aligned with the broader national objective of digital inclusion and economic empowerment, especially under the ambit of initiatives like *Atmanirbhar Bharat* and *Digital India*. However, the implementation of ONDC is not without challenges. As recent case studies and field research have shown, various seller-side frictions such as digital illiteracy, lack of working capital, supply chain inefficiencies, and resistance to change remain major bottlenecks. From the consumer perspective, establishing trust in a decentralized system where multiple parties are involved in a single transaction (e.g., buyer app, seller app, logistics provider, and payment gateway) also poses serious concerns about grievance redressal, data security, and service consistency. Therefore, while ONDC promises a radical overhaul of the current model, its success will largely depend on stakeholder adoption, effective regulatory oversight, and collaborative innovation among public and private actors. The global relevance of such open network models cannot be understated. As countries around the world confront similar challenges of platform monopolization and digital inequity, India's ONDC could emerge as a replicable framework for digital commerce reform. It also presents a unique case study in how governments can harness digital public infrastructure to regulate markets more equitably and foster inclusive economic growth. Comparative studies with earlier attempts at open network commerce, such as EINet in the United States, further highlight how India's approach is distinguished by its integration into a broader DPI framework and its grounding in grassroots entrepreneurship. The academic and policy discourse around ONDC is rapidly evolving, with scholars evaluating its structural design, impact on MSMEs, implications for consumer welfare, and its transformative potential in redefining the e-commerce value chain. Some view ONDC as a digital equivalent of the "Open Access" movement in energy or the "National Logistics Policy" in freight- creating common standards and breaking monopolies to increase

efficiency and equity across the system. As ONDC scales nationally, these conversations will become even more pertinent in shaping its governance, performance metrics, and global positioning.

This research paper aims to critically analyze the ONDC in the context of India's evolving e-commerce landscape. It explores ONDC's policy framework, technological architecture, and impact potential while highlighting the challenges of implementation, stakeholder adoption, and regulatory balance. Through a multidisciplinary approach, the paper contributes to understanding how open networks like ONDC can shape the future of digital commerce in emerging economies, especially in fostering inclusion, competition, and innovation.

Literature Review

Open Network for Digital Commerce is a government project built to change India's e-commerce environment by supporting online shopping for consumers and sellers, strengthening MSMEs by providing fair chances and providing competition to digital monopolies. ONDC wants to overhaul India's e-commerce sector by launching an open network platform that helps MSMEs grow and remain competitive (M N & Harshitha M, 2023).

The Indian government created the ONDC which strives to increase fairness in digital commerce, build interoperability, boost the strength of small businesses and offer more choices to consumers, depending on existing safe and effective systems used by parties involved (Islam et al., 2024).

ONDC aims to transform digital markets by being open to everyone, secure, easy to connect and focused on privacy, users' empowerment and support for all types of merchants. ONDC is built to change the way digital commerce works by emphasizing openness, inclusivity, the ability to link services and data privacy. Its purpose is to enable all users, merchants and businesses, large or small and found anywhere, to benefit from the digital economy (Malik et al., 2023).

The ONDC aims to broaden the access to digital commerce, restrict large monopolies, help small businesses use the internet, make all transactions possible with a common system and improve visibility for sellers to drive up GDP growth (Kumar M N & M, 2023). Promoting innovation, decentralization and inclusivity, as well as backing SMEs/MSMEs, developing digital infrastructure and offering online platforms to small merchants and consumers are the

primary purposes of the ONDC. In another case, ONDC mentioned here is an open-source e-commerce platform, much like UPI, that shares equal opportunities with Amazon and Flipkart for the ecommerce market (K. M. et al., 2022).

ONDC is working to give equal access to e-commerce, encourage inclusivity and help startups expand their markets. This report highlights the main difficulties sellers on the network face when taking up ONDC in India, including technical issues, awareness, the cost of adoption, competition and difficulties with scale and these problems are affecting its growth and ability to increase its market share (Manmadhan et al., 2024).

The ONDC is designed to support openness, inclusion, safe and easy data trading, higher protection for users' privacy, managing one's online data and helps sellers, no matter the size, transact smoothly online. ONDC is built to help digital commerce change and encourage openness, inclusion, interoperability and respect for users' data privacy. The mission is to boost user, merchant and business involvement in the digital world, no matter where they operate. ONDC was created in 2021 to level the playing field for e-commerce in India by encouraging small businesses, helping small startups and merchants and promoting a multi-party digital ecosystem where digital monopolies can be dismantled. The research points out that ONDC adoption by seller network nodes in India is hindered by technical problems, a lack of knowledge, high expenses, struggling against current competition and issues with expanding market share (Manmadhan et al., 2024).

The use of open architecture allows different parts of digital commerce to collaborate and work together without difficulty. They support innovation and allow companies to grow and also help save money, but at the same time risks like data security and privacy problems can arise. This article studies the pros and cons of open network architectures in relation to e-commerce, covering their effects on accessibility, interoperability, innovation, scalability and the economy (MBA, Department of Management Studies, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu, INDIA & P, 2024). A framework for doing business across a network that spreads across different organizations so that remote computer users can purchase goods from a merchant server, with all transactions secured by a financial clearing house server that is separate and protected (Craig, J., 2005).

A public key infrastructure and electronic transactions can be successfully and safely used thanks to a network of Internet user and server types that includes smart tokens (Muftic, S., 1998). EINet is a network built for online trading that offers important security for

organizations to integrate and safely complete transactions. Single sign-on, user authentication and data integrity are features, making sure commercial business operations are secure (Rosenthal, 1994).

ONDC is a not-for-profit organization whose network will make certain that items and services from many e-commerce platforms are available in search results used by all participating network apps. ONDC is thought to enable digital changes across the supply process, uniformity in operations, welcoming more suppliers, bolster logistics and boost consumer interest. If all goes as expected, in August 2022 when the ONDC is implemented, even popular e-commerce brands in India will need to follow the same standards as Android apps. New e-commerce sites would gain from improved findability, compatibility and a more inclusive system. If these powerful platforms are overcome, customers and suppliers can push for new ideas and help shape retail, food and mobility sectors (Dash et al., 2023).

The impressive rise and influence of e-commerce and digital platforms in India is thanks, in large part, to government programs like Digital India and rolling out 5G technology. Helping to develop this system is the ONDC which is innovate, inclusive and combines multiple platforms to make e-commerce work better for small and medium enterprises. The goal of ONDC is to decrease Amazon's and Flipkart's monopoly, encourage fairness and give everyone easier access to ecommerce in both rural and urban areas. Rising internet and smartphone use, as well as more investment, has given e-commerce a big boost, benefiting both small enterprises and kiranas. AI, AR, VR, blockchain and Web3 are bringing big changes to consumer tendencies and how businesses work. It is estimated that online shopping will play a big role in boosting GDP, growing employment and improving retail sales, reaching \$350 billion by 2030. The industry has to face infrastructure issues, inflated advertisement prices, data safety challenges and staff shortages. On the whole, these changes turn India into a key global e-commerce destination, helping to level the economic field, inspire digital learning and boost innovation among all segments of society (Mahesh K. et al., 2022).

India's ONDC program aims to democratize digital trade. Even though the internet is widely used, many local kiranas and small enterprises are still not part of the digital economy. In order to lessen monopolies and make it easier for small businesses to join, ONDC seeks to provide an open, interoperable platform built on open protocols like Beckn. While tackling issues like trust, data privacy, and opposition from major companies, the platform fosters innovation, fair competition, and digital inclusion. In order to promote inclusive growth and revolutionize

India's digital economy, ONDC aims to increase e-commerce penetration from 8% to 25% (Dr. A.Shaji George & A.S. Hovan George, 2022).

The following table summarizes the main objectives of the Open Network for Digital Commerce based on the provided research papers. Each objective is described, and the relevant sources are cited.

Table 1: Author's Contribution in ONDC

Objective	Description	Authors Citation
Democratize Digital Commerce	ONDC aims to create an inclusive ecosystem for e-commerce, facilitating even the smallest startups and merchants to benefit from digital commerce.	(Islam et al., 2024) (Manmadhan et al., 2024)
Empower Small Businesses and Local Retailers	The initiative seeks to enhance interoperability, empower small businesses, and diversify consumer choices by streamlining transactions and data security.	(Islam et al., 2024) (Malik et al., 2023) (M et al., 2022)
Ensure Secure and Interoperable Transactions	ONDC provides standard formats and APIs for cross-compatibility between platforms, ensuring secure, robust transactions, and data privacy.	(Malik et al., 2023) (M et al., 2022)
Promote Inclusivity and Reduce Digital Monopolies	ONDC dismantles digital monopolies, creating a level playing field and fostering innovation and inclusivity in the digital market.	(Manmadhan et al., 2024) (M et al., 2022)
Support SMEs and MSMEs for Sustainable Growth	ONDC integrates small traders with big tech, providing equal opportunities and promoting sustainable digital economic growth.	(M et al., 2022) (HarshithaM, 2023) (N & Harshitha, 2023)
Create a Level Playing Field	The platform challenges major e-commerce players, assisting micro, small, and medium-sized businesses in joining online marketplaces.	(HarshithaM, 2023) (N & Harshitha, 2023)

1. A Conceptual Model of ONDC:

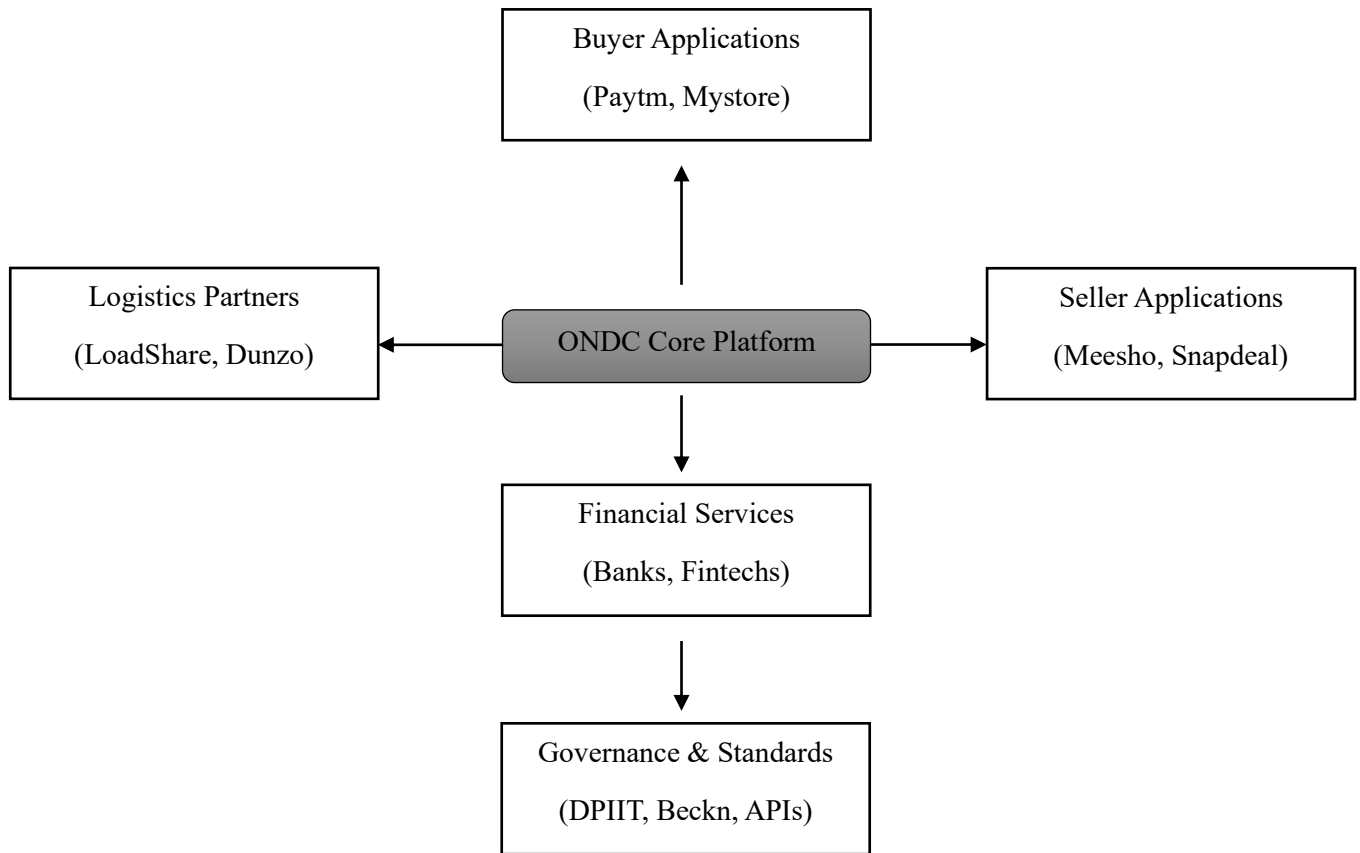


Figure:1 Conceptual Model of ONDC

The conceptual framework titled "ONDC and the Future of E-Commerce in India: Towards an Open and Inclusive Digital Marketplace" presents a holistic view of the Open Network for Digital Commerce as a decentralized digital infrastructure that redefines e-commerce in India. At the heart of the framework lies the ONDC Platform, functioning as the core layer that interconnects various ecosystem participants through open protocols and interoperable architecture. This central node facilitates seamless communication and transactions between five key components: Buyer Applications, Seller Applications, Logistics Partners, Financial Services, and Governance & Standards. Each of these components plays a critical role in building a transparent, inclusive, and efficient digital commerce environment. Buyer Applications such as Paytm, Mystore, and Magicpin allow consumers to browse and purchase goods and services listed by various sellers across the ONDC network. These applications act as front-end interfaces for users, offering product discovery, search, and checkout functionalities. On the supply side, Seller Applications like Meesho, Snapdeal, and GrowthFalcons enable businesses especially MSMEs to list their products, manage inventory,

and receive orders. The ONDC framework allows sellers to be visible across multiple buyer platforms, increasing their reach without needing to invest in proprietary e-commerce infrastructure. Complementing these components are Logistics Partners such as LoadShare and Dunzo, which provide delivery and fulfillment services. One of ONDC's key innovations is allowing buyers or sellers to independently choose logistics providers, enhancing flexibility and cost-efficiency. Additionally, Financial Services play a pivotal role by offering payment processing, credit, and financing solutions. Banks and fintech firms integrate into the ONDC network to support digital transactions and offer embedded financial services that empower small retailers with working capital and faster settlements. The backbone of the framework is Governance & Standards, which ensure that the system operates securely and fairly. Oversight by the DPIIT and the use of open protocols like the Bechn framework help maintain interoperability, privacy, and compliance. This component also drives policy alignment, ecosystem coordination, and scalability. Overall, the ONDC conceptual framework illustrates a modular and inclusive approach to digital commerce, allowing each stakeholder to participate independently while benefiting from shared infrastructure. It promotes innovation, competition, and empowerment of local businesses, aligning with India's vision for a digitally enabled, self-reliant economy under the broader goals of Digital India and Viksit Bharat @2047.

2. ONDC Platforms in India: An Overview

The ONDC is not a single platform but a network-based framework that enables interoperability across multiple e-commerce service providers. It is designed to separate the various functions of e-commerce- such as buyer interface, seller interface, logistics, cataloging, and payment allowing each participant to plug into the network independently. ONDC promotes decentralization and inclusion, especially of small businesses and non-traditional players in the digital economy.

Buyer Applications (Buyer Apps)

Buyer applications are digital platforms that enable consumers to access the ONDC network to search, compare, and purchase products or services. These apps are built on open protocols that allow them to interact with multiple seller apps and service providers. Unlike traditional e-commerce platforms, buyer apps on ONDC do not control the entire value chain; instead, they

act as access points where users can discover sellers registered through various seller-side platforms. This democratizes consumer access to products and services from across the country. For instance, a consumer in Delhi using the Paytm app (an ONDC buyer app) can purchase handmade products from a seller registered in Tamil Nadu via a different seller application. Other notable buyer apps include PhonePe's Pincodes, which emphasizes hyperlocal commerce, Magicpin, which connects users to local retail outlets and restaurants, and Craftsvilla, which provides access to curated ethnic fashion and lifestyle products through the ONDC framework. These apps play a crucial role in creating a more competitive and inclusive digital marketplace by removing the dominance of centralized platforms.

Seller Applications (Seller Apps)

Seller applications are platforms responsible for onboarding and enabling sellers- particularly small retailers, MSMEs, local businesses, and service providers- to list their offerings on the ONDC network. These apps assist sellers with critical tasks such as catalog creation, order management, transaction processing, and integrating logistics and payment gateways. The goal is to empower sellers who traditionally lack digital capabilities or reach by providing them with tools and interfaces that are ONDC-compliant. A seller onboarded via one app can be discovered by customers using any buyer app connected to the network. GoFrugal, for instance, offers software solutions to help retailers manage inventory and sales efficiently while being ONDC-ready. eSamudaay enables local entrepreneurs to build community commerce hubs. SellerApp and Ushop focus on simplifying the onboarding process and providing analytics to improve visibility and sales. These seller-side platforms play a vital role in democratizing digital commerce by giving sellers more autonomy, visibility, and access to a wider customer base without depending on dominant e-commerce platforms.

Logistics Providers

In the ONDC ecosystem, logistics providers form a critical pillar of the infrastructure by ensuring that goods are picked, transported, and delivered reliably across India. Unlike traditional e-commerce models where logistics is typically controlled by the platform, ONDC decouples this function, allowing independent logistics partners to integrate and serve various sellers and buyers on the network. These providers handle essential services such as last-mile delivery, real-time tracking, return management, and even cash-on-delivery (CoD) where applicable. Shiprocket is one of the early logistics platforms integrated with ONDC, offering

national shipping options and catering to small businesses. LoadShare collaborates with local courier services, making it easier to reach rural or semi-urban areas. Delhivery, a leading logistics aggregator, and Shadowfax, known for its hyperlocal delivery capabilities, have also joined the network. Their participation reduces barriers for smaller sellers who previously lacked the logistics support required to fulfill e-commerce orders. This open logistics framework enhances efficiency, cost transparency, and regional accessibility in digital commerce.

Network Participants and Gateways

Network participants and gateways form the core technical backbone of ONDC. They ensure that all communications, transactions, and data exchanges between buyer apps, seller apps, and logistics partners are conducted smoothly and securely. These participants are responsible for verifying compliance with ONDC protocols, maintaining data standards, and matching transactions in real-time. ONDC Ltd., a non-profit Section 8 company, has been established by the Government of India to manage and govern the network. It provides policy guidance, monitors interoperability standards, and ensures that no single platform can dominate the system. Additionally, the Beckn Protocol Foundation has contributed significantly by developing the open-source protocols on which ONDC is built. The adoption of these protocols ensures that the network is modular, extensible, and neutral, thereby fostering trust and innovation. Gateways also manage registry services and support the onboarding of new participants, making them essential for the growth and scalability of the network.

Domain-Specific Platforms

While ONDC began with a focus on retail commerce, it is rapidly expanding to include domain-specific verticals like food delivery, groceries, mobility, healthcare, and professional services. This diversification reflects the network's broader ambition to transform all facets of digital transactions. For example, in the food delivery domain, companies like Magicpin and Dunzo have enabled restaurants and food sellers to participate in ONDC, offering a lower-cost alternative to aggregators like Swiggy and Zomato. In the grocery sector, apps like Paytm and Spicesmart allow kirana stores to list their inventories online, making them visible to a wider customer base. Pilot programs for mobility services such as taxi aggregators and auto-rickshaw booking are being tested in cities like Kochi and Bengaluru. In the coming years, ONDC plans to expand into healthcare, insurance, and educational services, creating a truly inclusive digital

service economy. These vertical expansions will further reduce digital inequality and promote access to essential services across socio-economic groups.

The ONDC framework is fundamentally reshaping digital commerce in India by enabling a decentralized, inclusive, and interoperable network of platforms. Buyer and seller applications empower consumers and businesses alike, logistics providers ensure seamless fulfillment, and network gateways maintain integrity and compliance. The domain-specific expansions demonstrate ONDC's potential to go beyond retail and address deeper societal needs. Unlike traditional e-commerce models that operate as closed ecosystems, ONDC allows multiple entities to compete and collaborate simultaneously, reducing monopolistic control and enhancing consumer choice. By opening up digital commerce to local businesses, artisans, small traders, and underserved regions, ONDC is paving the way for a more equitable digital economy in India.

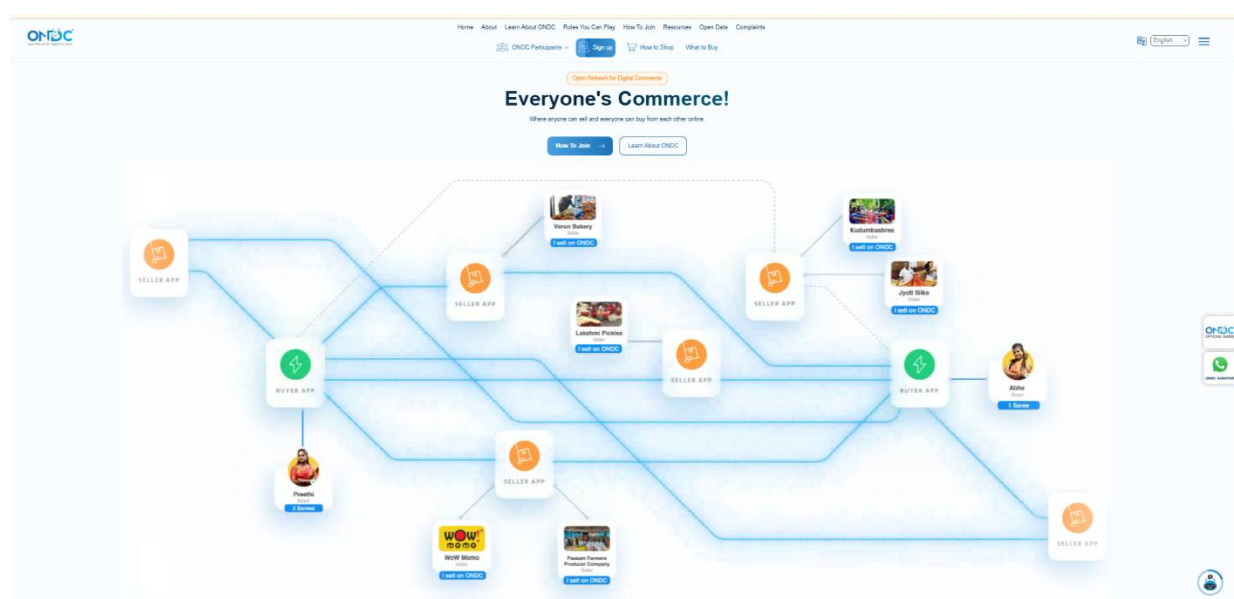


Figure 2: ONDC Platform in India <https://ondc.org>

The ONDC is a flagship initiative launched by the Government of India in 2021 under the aegis of the DPIIT. It is envisioned as a game-changing intervention to democratize the e-commerce ecosystem in India. Unlike conventional e-commerce platforms that are centralized and often monopolized by a few large corporations, ONDC seeks to establish an open, inclusive, and interoperable digital marketplace. It is designed to function similarly to how the Unified Payments Interface (UPI) revolutionized digital payments by creating a common protocol that enables seamless interaction across diverse platforms. ONDC is incorporated as a not-for-profit

Section 8 company and aims to enable the participation of small and medium enterprises (SMEs), local retailers, start-ups, and consumers on a level playing field, reducing dependency on dominant e-commerce players. The core philosophy behind ONDC is to unbundle the e-commerce value chain and allow various stakeholders buyers, sellers, logistics providers, payment gateways, and others to operate independently while still being connected through a common set of open protocols.

The ONDC platform facilitates interoperability through a decentralized architecture based on open-source protocols, notably the Bechn protocol. This framework enables sellers to list their products and services without being tied to a particular buyer-facing platform. In this model, a buyer using one app can purchase goods listed on a completely different seller app, creating a seamless cross-platform experience. This drastically enhances competition, fosters innovation, and reduces entry barriers for smaller businesses. Sellers can maintain ownership over their data and operations, and buyers benefit from greater choices, transparency in pricing, and ease of use. The platform supports various domains such as grocery, food and beverage, fashion, electronics, mobility, and even financial services, making it a comprehensive digital commerce solution. It also incorporates logistics integration, allowing consumers to select logistics partners at the time of checkout, enhancing delivery efficiency and customer satisfaction.

As of early 2024, ONDC has made significant progress in scaling its network. It has extended its presence to over 800 cities and towns in India and onboarded more than 370,000 sellers across multiple sectors. According to data available on the official ONDC website (<https://ondc.org>), the platform fulfilled over 7.1 million orders in February 2024 alone, with a cumulative order volume exceeding 16 million by January 2024. This growth is fueled by a robust ecosystem of buyer and seller applications, logistics providers, and financial institutions. Buyer-side platforms such as Paytm, Magicpin, and Mystore allow consumers to access products from multiple seller-side platforms like Meesho, Snapdeal, and GrowthFalcons. Logistics players such as LoadShare and Dunzo support deliveries, while banks and fintech companies provide credit and transaction infrastructure. This layered and modular architecture not only enhances operational flexibility but also ensures resilience and adaptability as the digital commerce landscape evolves. ONDC offers substantial benefits for all stakeholders. For sellers, particularly SMEs and local kirana stores, it provides an opportunity to digitize their business without incurring heavy commissions or being constrained by platform-specific rules. For buyers, it offers a richer and more diverse shopping experience, better pricing, and the

ability to shop across platforms using a single interface. For technology service providers and fintechs, ONDC opens up new avenues to integrate value-added services such as inventory management, invoicing, payments, and logistics. In its essence, what ONDC offers is an open and inclusive e-commerce system that fits Digital India's vision and promotes the objective of Viksit Bharat @2047. Looking ahead, ONDC plans to expand into new sectors such as travel, hospitality, and cross-border trade, while also focusing on increasing rural participation through tools like the e-Grameen app. As it matures, ONDC is poised to redefine the future of e-commerce in India by empowering consumers and businesses alike with transparency, affordability, and choice.

Findings & Discussions

The ONDC represents a paradigm shift in India's e-commerce landscape by attempting to dismantle centralized platform monopolies and foster an open, interoperable digital ecosystem. The findings of this study underscore the transformative potential of ONDC in enhancing inclusivity, transparency, and competitiveness in digital commerce. Through an analysis of policy documents, stakeholder insights, and the technological architecture of ONDC, several key themes emerge.

Firstly, ONDC's unbundled architecture comprising buyer apps, seller apps, logistics providers, and payment gateways creates a level playing field for small and medium enterprises (SMEs) by reducing entry barriers and dependence on large e-commerce intermediaries. This design allows businesses, regardless of scale, to digitally participate in commerce using open protocols. MSMEs, street vendors, and other informal sector players can leverage this infrastructure to access wider markets without hefty commissions or algorithmic biases favoring dominant sellers. Secondly, ONDC has strong potential to promote socio-economic inclusion. By integrating with Digital Public Infrastructure (DPI) components such as Aadhaar, UPI, and OCEN, the network can facilitate financial inclusion, credit access, and digital identity verification—particularly benefiting women entrepreneurs, rural sellers, and specially-abled individuals. The interoperability of services and transparent discovery mechanisms offer consumers more choice and encourage innovation among service providers.

However, the findings also reveal several operational and behavioral challenges. Digital literacy gaps, especially among rural and first-time users, could impede adoption. Trust and grievance redressal mechanisms remain underdeveloped, and the absence of a single dominant

interface raises concerns about user experience and accountability. Furthermore, onboarding MSMEs at scale will require targeted capacity-building, digital skilling programs, and policy incentives. ONDC holds significant promise to democratize e-commerce in India, but its success depends on collaborative governance, a robust regulatory framework, and continuous stakeholder engagement. The findings suggest that while ONDC is a bold step toward inclusive digital commerce, its long-term impact will hinge on addressing infrastructural, behavioral, and institutional barriers through iterative policy design and participatory implementation.

Conclusion

The emergence of the ONDC marks a pivotal moment in India's journey toward democratizing digital commerce and empowering underserved economic segments. As a public digital infrastructure initiative, ONDC aims to disrupt entrenched platform-centric models by introducing an open, inclusive, and interoperable network that aligns with the broader vision of Digital India and the India Stack ecosystem. This study has critically examined ONDC's policy rationale, architectural design, and socio-economic implications through a multidisciplinary lens. It finds that ONDC has the potential to significantly enhance the participation of) in the digital economy by reducing dependency on dominant e-commerce intermediaries, fostering fair competition, and enabling access to a wider customer base. Additionally, the integration of ONDC with initiatives like the Open Credit Enablement Network (OCEN) can unlock new avenues for credit and financial inclusion, especially for marginalized and underbanked communities, including women and specially-abled entrepreneurs. However, the implementation of such an ambitious framework is fraught with challenges. Issues of digital literacy, trust, institutional readiness, and technological adaptability among small sellers need urgent attention. Without effective capacity-building, onboarding support, and sustained policy incentives, the risk of replicating existing digital divides within a new framework remains high. Moreover, the absence of robust grievance redressal mechanisms and standardization across network participants could undermine user trust and slow adoption. Therefore, the success of ONDC will require more than just technological innovation it will necessitate a strong commitment to collaborative governance, responsive policy frameworks, and inclusive stakeholder engagement. The government, civil society, private players, and technology partners must work in tandem to build a resilient and equitable digital commerce environment. In sum, ONDC is not merely a technological intervention but a socio-economic opportunity to reimagine e-commerce through the lens of

equity, access, and innovation. If implemented thoughtfully, it can serve as a model for open digital ecosystems across the Global South, contributing to more inclusive, sustainable, and decentralized digital economies.

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A STUDY ON INVESTORS AWARENESS LEVEL REGARDING SAVING SCHEMES OF PUBLIC SECTOR BANKS: WITH SPECIAL REFERENCE TO REWARI DISTRICT OF HARYANA

Mr. Pawan

Research Scholar, PNG Government PG College, Ramnagar
Kumaun University, Nainital

Dr. Dharmendra Kumar

Professor, Faculty of Commerce & Management
Pandit Lalit Mohan Sharma Campus, Rishikesh
Sri Dev Suman Uttarakhand Vishwavidyalaya, Badshahithaul.

Abstract

The Bank is well-known as a secure, trustworthy, and traditionally formal institution that offers investment options. This study focused on the investor's awareness level regarding saving schemes of public sector banks in Rewari District of Haryana. This study, uses Exploratory cum Descriptive research approach, with a sample size of 300 respondents using structured questionnaires and secondary sources such as published articles and the annual report of the RBI. A comprehensive statistical analysis using the Pearson Chi-Square test has been applied to test across various demographics like Area of residence, Gender, Age-group and Education and Income level assess the association in Level of awareness in several critical aspects on Saving Schemes of Banks. The study concluded that investor awareness of saving schemes in public sector banks varies significantly across key areas such as interest rates, investment periods, maturity periods, and partial withdrawal options. These disparities highlight the need for improved financial literacy and communication. However, consistent awareness was noted regarding the minimum required amount, indicating effective messaging in this area. Overall, the findings emphasize the importance of inclusive financial education to ensure all investors can make informed decisions.

Keywords: Awareness, Investors, Public sector banks, Nationalization, Saving Schemes.

Introduction

A country's banking network is referred to as a bonded structure of financial institutions. The holding of banks, the design of the financial state, the duties carried out, and the customs of business are all covered. The financial institutions and central banks are the components of the banking network. Commercial banks take deposits, and investment banks handle capital market concerns and trading, loans, and advances, and the central bank, among many other tasks, including currency issuance, oversees the banking system by establishing monetary policies. A banking network may also refer to a system provided by the bank that assists clients with cash management services and reports the activities of their portfolios and accounts on an ongoing basis. A banking company is defined as "any company which transacts the business of banking" by the Indian Banking Company Act of 1949. Banking is the act of taking deposits from the general public for lending or investing, repayable on demand or otherwise, and withdrawable by check, draft, or other means

As it embarked on a road of planned economic advancement as soon as it gained independence, India, like any other country, needed a strong and efficient financial system to accommodate the different demands of credit and development. To achieve this goal, it used a diverse pattern of economic growth and constructed a financial infrastructure to support it. There aren't many instances of success like it in the world, particularly in terms of democratising banking and transforming the financial sector into an effective weapon for advancing public policy. The banking sector quickly expanded in terms of presence and penetration in the 20 years following bank nationalisation in 1969, which was impressive. By 1980, the majority of the nation's financial activity was in the hands of public-sector banks.

All public-sector banks had an outstanding branch network by March 1992, with 60,646 locations across the whole nation. Early in the 1990s, it became evident that the efficiency of the financial system could not be gauged only by quantitative growth in the form of branch expansion and increases in deposits and advances. This was true even as the banking system's branch network expanded quickly. Indian banks and financial institutions operate in a highly protected and regulated environment, yet their financial stability and operational effectiveness for short of international norms. Corrections were required as a result of internal and international changes, especially to improve the financial system and bring it into line with institutions overseas.

The government owns a sizable shareholding– 51% or more– in public sector banks. The majority ownership of these banks is held by the Indian government. Such PSBs are owned by the government, which is also in charge of exercising management supervision over the businesses. With a 72% market share, public-sector banks dominate the Indian banking system. The combination will help the economy to grow and improve production and efficiency. Two of the biggest public sector banks, SBI and PNB, were selected for the study as part of the present research.

Review Literature

(Sushmitha & Jayabal, 2023), “A Study on Women Investors' Awareness towards Investment”, the focus of this research was on finding out working women’s awareness of different investing opportunities in Chennai. To collect data for the study, 356 working women in various sectors completed a standardized questionnaire. The data was analyzed using chi-square tests and exploratory component analysis. It was concluded that investing awareness and financial discernment were significantly correlated. According to the study’s conclusion, the majority of working women decided to make their investments through conventional routes.

(Bhadauriya, 2022), “Customer satisfaction in public and private sector banks: A case study NCR”, study examined the association between customer satisfaction in public and private banks on five quality dimensions-tangibility, dependability, responsiveness, assurance, and empathy- by using the Service quality gap model (SERVQUAL). The study found that dependability and empathy characteristics had a significant influence on their satisfaction, regardless of whether they were speaking of public or private sector banks. As a result, banks should concentrate on these areas of their service offerings.

(P & A, 2020), “A Study on Investor's Awareness towards Various Saving Schemes Offered by SBI”, this study showed the awareness about the various saving schemes provided by SBI. It was concluded that the majority of the respondents invested in various saving accounts of SBI moreover the customers were interested in investing in SBI old scheme to meet future contingencies. The researcher found that the Coimbatore city SBI customers were highly satisfied with the SBI Tax Saving schemes and SBI’s multi-optional deposit scheme (MODS).

(Agarwal, Vipin Jain, & Goel, 2020), “Awareness and Investment Preferences of Women: An Empirical Study on Working and Non-Working Females”, this research aimed to ascertain women’s investing choices and awareness levels. The researchers selected working

women from diverse sectors as well as non-working women as respondents for their study. The outcome of the study indicated that though women were aware of outdated schemes, they also concluded that tax savings schemes were a significant factor in raising purchasing power. The majority of women relied more on provident funds and life insurance policies than other ways to save money on investments and taxes.

(S. Gurav, 2017), “A study of investment awareness and avenues especially through banks concerning Lchalkaranji city”, through the collection of primary and secondary data, the researcher gathered crucial information. The study included structured questionnaires, and a random selection technique was used to select of 100 Respondents. It was found that regular and large returns on investment were the main objectives of the vast majority of respondents when it came to savings. The majority of respondents strongly agreed that they should save money for future security, and it was discovered that most of them made a comfortable enough monthly income to consider investing.

Research Methodology

The term 'Research Methodology' refers to the precise periods or methods used to gather, select, manage, and analyze data on a certain subject. The methodology section of a research paper helps the reader to assess the study's overall validity and dependability.

Research Objective

To find out the level of awareness among the investors regarding saving schemes of public sector banks.

Research Design

The Study is Exploratory cum Descriptive in Nature.

Hypothesis

H₁: There is a significant difference between the levels of awareness of the investors regarding Public Sector Banks' saving schemes.

Data Collection

A systematic questionnaire was developed to assess investors' understanding of numerous essential features, including interest rates, minimum investment amounts, Investment periods, maturity periods, and partial withdrawal alternatives. The study included both primary and secondary data collecting methods. The primary data was acquired via a planned questionnaire filled out by investors in public sector banks in Haryana's Rewari District. Secondary data was acquired from a variety of online and offline sources, including journals, research papers, periodicals, and articles. A sample of 300 respondents from the Rewari District of Haryana was obtained.

Statistical Tools

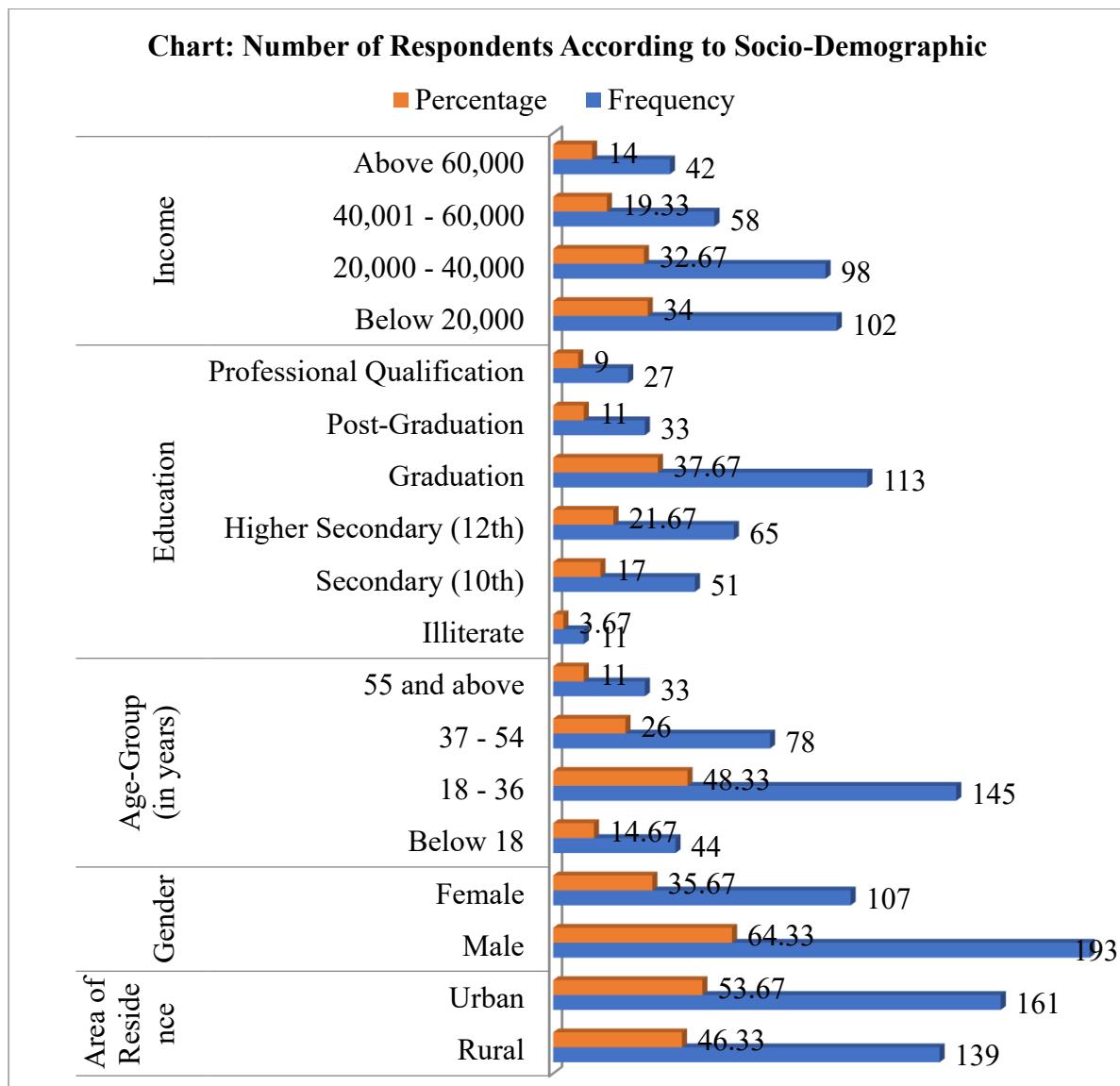
The purpose of the study is to assess investors' regarding Public Sector Banks' saving schemes in the Haryana district of Rewari. IBM SPSS-20 was used to further analyze the information gathered from the scheduled questionnaire. The statistical methods used in data analysis include the chi-square test and descriptive statistics.

Analysis and Interpretation

Demographic Profile

Variable	Parameter	Frequency	Percentage
Area of Residence	Rural	139	46.33
	Urban	161	53.67
Gender	Male	193	64.33
	Female	107	35.67
Age-Group (in years)	Below 18	44	14.67
	18 – 36	145	48.33
	37 – 54	78	26
	55 and above	33	11
Education	Illiterate	11	3.67
	Secondary (10th)	51	17
	Higher Secondary (12th)	65	21.67
	Graduation	113	37.67
	Post-Graduation	33	11
	Professional Qualification	27	9

Income	Below 20,000	102	34
	20,000 - 40,000	98	32.67
	40,001 - 60,000	58	19.33
	Above 60,000	42	14



Source: Primary Data

The above table and the chart above the total 300 respondents shows that among the respondents of banks, 46.33% are rural and 53.67% are residing in urban, and among the bank respondents, 64.33% are male, and 35.67% are female. Among bank respondents, 14.67% are from the below 18 years age group, 48.33% are from the 18-36 year age group, 26% are from the 37-54 year age group, and the remaining 11% are 55 and above years. Among the bank

respondents, 3.67% are illiterate, 17% are 10th pass, 21.67% are 12th pass, 37.67% are graduates, 11% are postgraduates, and the remaining 9% possess a professional degree. Among the bank respondents, 34% earn less than 20,000 per month, 32.67% earn from 20,000-40,000 per month, 19.33% earn from 40,001-60,000 per month, and the remaining 14% earn more than 60,000 per month.

Collected information and data are coded and entered into the SPSS software. Data analysis was performed by using the statistical package SPSS software 24 version. The measurement scale was divided into two score zones. If the sum of all the responses ranges between 0-4 respondents shall be considered Aware and value “0” will be marked, 5-9 respondents shall be considered unaware, and value “1” shall be marked. Chi-square tests are determined to accept or reject the hypotheses of this study.

Table 1 Demographic variables and Investors' Awareness Regarding Rate of Interest

	Rate of Interest	Test	Value	df	P-Value	Decision
1.	The significant difference between the awareness levels of Rural and Urban respondents	Pearson Chi-Square	31.110	1	.000	Retain the Alternative Hypothesis
2.	The significant difference between the awareness levels of Male and Female respondents	Pearson Chi-Square	20.050	1	.000	Retain the Alternative Hypothesis
3.	The significant difference between the awareness levels of different Age groups of respondents	Pearson Chi-Square	15.871	3	.001	Retain the Alternative Hypothesis
4.	The significant difference between the awareness levels of different Education levels of respondents	Pearson Chi-Square	21.688	5	.001	Retain the Alternative Hypothesis
5.	The significant difference between the awareness levels of different Income levels of respondents	Pearson Chi-Square	.660	3	.882	Reject the Alternative Hypothesis

Source: Primary Data

*Sig.: at 5% level

Interpretation:

Table 1 shows the awareness among the investors regarding saving schemes (rate of interest) of banks. For the analysis of respondent awareness, the Pearson Chi-Square test has

been applied to test across various demographics like “Area of residence, Gender, Age group, Education levels, and Income levels”. The Pearson Chi-Square test found that Areas of residence, Gender, Age group, and Education levels have significant differences. The findings have been explained in the following:

- The Chi-square value is 31.110, P-value = .000, indicates that a significant difference between the Rural and Urban respondents' awareness regarding the rate of interest.
- The Chi-square value is 20.050, P-value = .000, indicates that a significant difference between the Male and Female respondents' awareness regarding the rate of interest.
- The Chi-square value is 15.871, P-value = .001, indicates that a significant difference between the Age groups respondents' awareness regarding the rate of interest.
- The Chi-square value is 21.688, P-value = .001, indicates that a significant difference between the Education levels in respondents' awareness regarding the rate of interest.
- The Chi-square value is .660, P-value = .882, indicates that no significant difference between the Income levels in respondents' awareness regarding the rate of interest.

Table 2. Demographic variables and Investors' Awareness Regarding Minimum Required Amount

	Minimum Required Amount	Test	Value	df	P-Value	Decision
1.	The significant difference between the awareness levels of Rural and Urban respondents	Pearson Chi-Square	.209	1	.648	Reject the Alternative Hypothesis
2.	The significant difference between the awareness levels of Male and Female respondents	Pearson Chi-Square	10.449	1	.001	Retain the Alternative Hypothesis
3.	The significant difference between the awareness levels of different Age groups of respondents	Pearson Chi-Square	5.606	3	.132	Reject the Alternative Hypothesis
4.	The significant difference between the awareness levels of different Education levels of respondents	Pearson Chi-Square	17.703	5	.003	Retain the Alternative Hypothesis

5.	The significant difference between the awareness levels of different Income levels of respondents	Pearson Chi-Square	11.508	3	.009	Retain the Alternative Hypothesis

Source: Primary Data

*Sig.: at 5% level

Interpretation:

Table 2 shows the awareness among the investors regarding the saving schemes (minimum required amount) of banks. For the analysis of respondent awareness, the Pearson Chi-Square test has been applied to test across various demographics like “Area of residence, Gender, Age group, Education levels, and Income levels”. The Pearson Chi-Square test found that Gender, Education levels, and Income levels have significant differences. The findings have been explained in the following:

- The Chi-square value is .209, P-value = .648, indicates that no significant difference between the Rural and Urban respondents' awareness regarding the minimum required amount.
- The Chi-square value is 10.449, P-value = .001, indicates that a significant difference between the Male and Urban respondents' awareness regarding the minimum required amount.
- The Chi-square value is 5.606, P-value = .132, indicates that no significant difference between the Age groups respondents' awareness regarding the minimum required amount.
- The Chi-square value is 17.703, P-value = .003, indicates that a significant difference between the Education levels in respondents' awareness regarding the minimum required amount.
- The Chi-square value is 11.508, P-value = .009, indicates that a significant difference between the Income levels in respondents' awareness regarding the minimum required amount.

Table 3 Demographic variables and Investors' Awareness Regarding Investment period

	Investment Period	Test	Value	df	P-Value	Decision
1.	The significant difference between the awareness levels of Rural and Urban respondents	Pearson Chi-Square	.292	1	.589	Reject the Alternative Hypothesis

2.	The significant difference between the awareness levels of Male and Female respondents	Pearson Chi-Square	16.470	1	.000	Retain the Alternative Hypothesis
3.	The significant difference between the awareness levels of different Age groups of respondents	Pearson Chi-Square	8.287	3	.040	Retain the Alternative Hypothesis
4.	The significant difference between the awareness levels of different Education levels of respondents	Pearson Chi-Square	14.950	5	.011	Retain the Alternative Hypothesis
5.	The significant difference between the awareness levels of different Income levels of respondents	Pearson Chi-Square	14.142	3	.003	Retain the Alternative Hypothesis

Source: Primary Data

*Sig.:at 5% level

Interpretation:

Table 3 shows the awareness among the investors regarding the saving schemes (investment period) of banks. For the analysis of respondent awareness, the Pearson Chi-Square test has been applied to test across various demographics like “Area of residence, Gender, Age group, Education levels, and Income levels”. The Pearson Chi-Square test found that Gender, Age group, Education levels, and Income levels have significant differences. The findings have been explained in the following:

- The Chi-square value is .292, P-value = .589, indicates that no significant difference between the Rural and Urban respondents' awareness regarding the investment period.
- The Chi-square value is 16.470, P-value = .000, indicates that a significant difference between the Male and Female respondents' awareness regarding the investment period.
- The Chi-square value is 8.287, P-value = .040, indicates that a significant difference between the Age group respondents' awareness regarding the investment period.
- The Chi-square value is 14.950, P-value = .011, indicates that a significant difference between the Education levels in respondents' awareness regarding the investment period.
- The Chi-square value is 14.142, P-value = .003, indicates that a significant difference between the Income levels in respondents' awareness regarding the investment period.

Table 4 Demographic variables and Investors' Awareness Regarding Maturity Period

	Maturity Period	Test	Value	df	P-Value	Decision
1.	The significant difference between the awareness levels of Rural and Urban respondents	Pearson Chi-Square	4.234	1	.040	Retain the Alternative Hypothesis
2.	The significant difference between the awareness levels of Male and Female respondents	Pearson Chi-Square	14.818	1	.000	Retain the Alternative Hypothesis
3.	The significant difference between the awareness levels of different Age groups of respondents	Pearson Chi-Square	4.783	3	.188	Reject the Alternative Hypothesis
4.	The significant difference between the awareness levels of different Education levels of respondents	Pearson Chi-Square	13.285	5	.021	Retain the Alternative Hypothesis
5.	The significant difference between the awareness levels of different Income levels of respondents	Pearson Chi-Square	16.454	3	.001	Retain the Alternative Hypothesis

Source: Primary Data***Sig.:** at 5% level**Interpretation:**

Table 4 shows the awareness among the investors regarding the saving schemes (maturity period) of banks. For the analysis of respondent awareness, the Pearson Chi-Square test has been applied to test across various demographics like “Area of residence, Gender, Age group, Education levels, and Income levels”. The Pearson Chi-Square test found that Areas of residence, Gender, Education levels, and Income levels have significant differences. The findings have been explained in the following:

- The Chi-square value is 4.234, P-value = .040, indicates that a significant difference between the Rural and Urban respondents' awareness regarding the maturity period.
- The Chi-square value is 14.818, P-value = .000, indicates that a significant difference between the Male and Female respondents' awareness regarding the maturity period.
- The Chi-square value is 4.783, P-value = .188, indicates that no significant difference between the Age group respondents' awareness regarding the maturity period.

- The Chi-square value is 13.285, P-value = .021, indicates that a significant difference between the Education levels in respondents' awareness regarding the maturity period.
- The Chi-square value is 16.454, P-value = .001, indicates that a significant difference between the Income levels in respondents' awareness regarding the maturity period.

Tble 5 Demographic variables and Investors' Awareness Regarding Availability Partial Withdrawal

	Availability Partial withdrawal	Test	Value	df	P-Value	Decision
1.	The significant difference between the awareness levels of Rural and Urban respondents	Pearson Chi-Square	.597	1	.440	Reject the Alternative Hypothesis
2.	The significant difference between the awareness levels of Male and Female respondents	Pearson Chi-Square	8.809	1	.003	Retain the Alternative Hypothesis
3.	The significant difference between the awareness levels of different Age groups of respondents	Pearson Chi-Square	4.852	3	.019	Retain the Alternative Hypothesis
4.	The significant difference between the awareness levels of different Education levels of respondents	Pearson Chi-Square	7.201	5	.206	Reject the Alternative Hypothesis
5.	The significant difference between the awareness levels of different Income levels of respondents	Pearson Chi-Square	12.259	3	.007	Retain the Alternative Hypothesis

Source: Primary Data

*Sig.: at 5% level

Interpretation:

Table 5 shows the awareness among the investors regarding the saving schemes (availability partial withdrawal) of banks. For the analysis of respondent awareness, the Pearson Chi-Square test has been applied to test across various demographics like “Area of residence, Gender, Age group, Education levels, and Income levels”. The Pearson Chi-Square test found that Gender, Age group, and Income levels have significant differences. The findings have been explained in the following:

- The Chi-square value is .597, P-value = .440, indicates that no significant difference between the Rural and Urban respondents' awareness regarding the availability of partial withdrawal.
- The Chi-square value is 8.809, P-value = .003, indicates that a significant difference between the Male and Female respondents' awareness regarding the availability of partial withdrawal.
- The Chi-square value is 4.852, P-value = .019, indicates that a significant difference between the Age group respondents' awareness regarding the availability of partial withdrawal.
- The Chi-square value is 7.201, P-value = .206, indicates that no significant difference between the Education levels in respondents' awareness regarding the availability of partial withdrawal.
- The Chi-square value is 12.259, P-value = .007, indicates that a significant difference between the Income levels in respondents' awareness regarding the availability of partial withdrawal.

Findings

- The data (Ref. Table: 1) reveals a significant difference in the awareness levels of bank respondents regarding interest rates. This factor is essential for assessing their financial literacy and the extent of their access to relevant information. Identifying this difference helps uncover existing knowledge gaps and highlights the importance of targeted educational initiatives or communication strategies aimed at enhancing understanding of interest rates. Such efforts can enable users to make more informed and effective financial decisions.
- The data (Ref. Table: 2) shows that there is a significant difference in the awareness of the minimum required amount among bank respondents. This aspect is important for evaluating how consistently basic financial information is understood across different user groups. The similarity in awareness suggests that both groups have a comparable grasp of the minimum amount criteria. This finding can assist service providers in assessing the success of their communication efforts and support the continued delivery of consistent information across all channels.

- The data (Ref. Table: 3) reveals a significant difference in the level of awareness among bank respondents concerning the investment period. This factor is key to understanding variations in financial knowledge related to investment durations. Analyzing these differences helps identify specific areas where one group may lack sufficient information, which could affect their financial planning and decision-making. These insights can guide the development of targeted educational programs and improved communication strategies to ensure that all users have a clear and comprehensive understanding of investment timelines.
- The data (Ref. Table: 4) highlights a significant difference in bank respondents' awareness of the maturity period. This factor is essential for assessing their understanding of when financial products reach completion. Awareness of maturity timelines is critical for effective financial planning and decision-making. Acknowledging this disparity allows the study to pinpoint gaps in knowledge and recommend measures to enhance information dissemination, helping ensure that all respondents clearly understand maturity periods and their implications for financial outcomes.
- The data (Ref. Table: 5) indicates a significant difference in the awareness of partial withdrawal options among bank respondents. This aspect is crucial for evaluating their understanding of the flexibility to access funds before the investment reaches maturity. Variations in awareness may point to inconsistencies in how information is conveyed or interpreted across different institutions. Analyzing this gap can help identify the need for better communication or enhanced customer education, ensuring that all users are well-informed about their entitlements and choices regarding partial withdrawals.

Conclusion

The study concluded that the level of awareness among investors regarding various saving schemes offered by public sector banks. The findings reveal notable disparities in awareness across several key variables. A significant difference was observed in respondents' understanding of the rate of interest, investment period, maturity period, and availability of partial withdrawals, highlighting even access to critical financial information. These gaps point to the urgent need for targeted financial literacy programs and improved communication strategies to ensure that all investors, regardless of their background or banking institution, are well-informed and empowered to make sound financial decisions. Conversely, the study found

a significant difference in awareness regarding the minimum required amount, suggesting that communication around this aspect is relatively consistent and effective across institutions. This insight reinforces the importance of maintaining uniform messaging while enhancing clarity around other critical areas. Overall, the findings underscore the need for public sector banks to adopt more inclusive and accessible financial education efforts, ultimately contributing to better-informed investors and a more financially aware population.

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INFLUENCE OF AI ON GREEN CONSUMER BEHAVIOR TOWARDS FMCG PRODUCTS USING THEORY OF PLANNED BEHAVIOR

Ms. Jyoti Rani

Research Scholar, MJPRU, Bareilly
Email: Jyotishubham067@gmail.com

Dr. Saurabh Verma

Associate Professor, MJPRU, Bareilly
Email: saurabhverma@mjpru.ac.in

Abstract

Purpose: The purpose of the study is to analyze the impact of green marketing on consumer behavior within the context of FMCG products. This study has been conducted in the NCR region.

Research Methodology: A well-structured questionnaire was prepared for data collection. The 285 respondents participated in this survey. The data was analyzed with the help of Excel.

Findings: The result of the study indicated a positive effect of green marketing on consumer behavior. The findings suggest that consumers are more concerned about environmental protection and prefer the use of environmentally friendly products.

Implications: The practical implication of this study suggests more exploration for green marketing among consumers to maintain a sustainable environment. Moreover, the findings of the study would be beneficial for policymakers, industrialists, and stakeholders in formulating strategies toward sustainable consumer products.

Originality: The originality of the study is that we have selected the green marketing variable which was not used prior in any research. Another novelty of the research is that we have chosen the FMCG industry for conducting this research study.

Keywords: Green consumer behavior, AI, green consumer purchase intention, green customer, subjective norms, attitude, and perceived behavioral control

Introduction

The environment has suffered with the increasing economic growth of the nations. This economic growth has generated various severe side effects on the environment (Shu-Ing et al., 2014). Over-utilization of natural resources has led to an adverse impact on nature and population explosion is an outcome of this, it leads to consumption by consumers (Kates, 2000). Global warming is a major issue in environmental degradation, it is caused by human activities, if this situation does not change then global warming will reach up to 1.5 degrees C between 2030 to 2052 (Klein Goldewijk et al., 2010).

Environment protection is always a discussed topic of study. In the present context. Sustainable development goal's developed at United Nations Conference held in Rio de Janeiro, Brazil. 2012 to address the serious issues of the planet and sustainable environment is one of the goals in SDG'S 12 goals "Ensure sustainable consumption and production pattern". Green consumer is one of the environmental protection activities to achieve this SDG'S goal 12 (Gordon-Wilson & Modi, 2015). With awareness of environmental safety consumers become more eco-conscious and prefer eco-friendly products (Nimse et al., 2017). This consciousness for environmental protection is termed "green consumerism" (Moisander, 2017).

The term "Green Marketing" came into existence at the end of 1980 and beginning of the 1990. The American Marketing Association organized the first workshop on green marketing "Ecological Marketing" in 1975. The emergence of green marketing started with the financial report of ice cream seller Ben & Jerry's corporate social responsibility. Sustainable development was defined by World Commission on Environment and Development in 1987 as "the needs of the present without sacrificing the needs of future generations to fulfill their own needs". The first paper on green marketing was published "Green Marketing by Ken Peattie (1992) in the United Kingdom and Jacquelyn Ottman (1993) "Green Marketing: Challenges & Opportunities for the New Marketing" in the United States of America. Companies are now adopting green marketing as a competitive advantage. According to the survey, the FMCG sector adopts 12 kinds of trends for green marketing (Shweta et al., 2014). Customers and marketers are using AI more and more to promote sustainable development. Marketers can use AI analytics to better understand sustainable behavior. Artificial Intelligence (AI) in marketing helps customers make eco-friendly choices. The use of AI in the production, development, and distribution of eco-friendly products is advantageous for e-commerce companies (Phuangsuwan et al., 2025).

Literature Review

Green Marketing

Different authors gave different views related to “Green Marketing”. According to the American Association Of Marketing-“ Green Marketing as Ecological Marketing”. Green Marketing encompasses a broad range of commercial endeavors aimed at meeting consumer demands and preferences while reducing adverse effects on the environment (Tiwari, Tripathi, Srivastav & Yadav, 2011). American Marketing Association stated that - The marketing of products with an emphasis on environmental safety is known as” Green Marketing”, which includes business practices including changing the packaging, improving the production process, and using green advertising (Yazdanifard & Mercy, 2011).

Green marketing, seen through the lens of the business, emphasizes corporate social responsibility (Suganthi et al., 2020). Green marketing is a newly emerging concept that caters to the needs of business and consumer requirements while maintaining the ability of future generations to inherit knowledge (Nekmahud et al., 2020). It is a vital tool for advancing environmental preservation and ecological development since it is based on a thorough understanding of people, society, and the natural environment (LI, Liu, et al., 2023). Green Marketing is defined as the use of marketing instruments to promote trade that meets individual and organizational objectives while preserving, safeguarding, and conserving the natural world (Lam & Li 2019). Green Marketing is a purposeful attempt to present organization’s-friendly products to consumers (Ahmadzadeh et al., 2017). Green marketing is the term used to describe an organization’s strategic, tactical, and internal actions and procedures that are all directed towards developing, promoting, and delivering goods with the least amount of negative environmental impact (Papadas et al., 2017). Green marketing is sustainable marketing, organic marketing, and eco-friendly marketing (Vilkaite-Vaitone et al., 2019). The fact that the terms “green marketing” are used interchangeably illustrates how much green marketing has improved product benefits, environmental effects, and product design. Promoting environmental initiatives to a target audience is known as “green marketing” (Kisieliauskas&Jančaitis, 2022). It aims to create an assess image of environmental consciousness. Going green means that firms must adapt their messaging and production methods in addition to promoting products and environmental features.

Contextual Development of Green Marketing-

The term “green” was originally used in American English in 1990’s. Green marketing evolved into a green movement in 1990’s and the year 1990 was dubbed “ the era of the green revolution” (Vandermerwe & Oliff 1990). Since then academics have turned to green marketing as a major topic of research study (Fuller, 1990; Herman et.al., 2005; Juwaheer et al., 2012; Peattie , 1995; Polonsky and Mintu- Wismatt, 1995).

The time for organizational management to learn about the impact of green marketing on performance has long since passed. In the early 1990’s , businesses began to realize that their customer’s growing environmental concerns would make them unwise to ignore green marketing (Yazdanifard& Yan, 2014).

Green Consumer behaviour-

In the present era, consumers are more conscious of environment-friendly products and their empathy for th green products has increased the profitability in green marketing. Many researchers have studied green consumer behavior to understand the impact of green marketing strategies on their purchasing preferences. Green consumer behavior refers to the groups of individuals who are more concerned about environmental sustainability (Twum, Kojo &Yalley, Andrews, 2021). The consumers are also called eco-friendly consumers because they are more serious and concerned about the sustainability of the environment. Green consumers always want to consume products that are environmentally friendly and have minimum adverse effects on the environment. Many of consumers now demand organic products and herbal products to avoid chemical consumption for safe health. Environmental concerned consumers are an essential factor for emerging green marketing. Many of the developing countries' consumers now changing their consumption habits for environmental sustainability. Green consumers are reticent to consume products that are risky for health or other’s health and need lots of natural resources, and energy to manufacture them (Lubowiecki- vikuk et al).

Sustainable environmentally conscious consumers are a group of consumers that consider the natural features of the products while making their purchase and follow all the rules for maintaining environmental sustainability. Green consumers are always looking forward to those products that are environmentally friendly and have a minimum adverse impact on nature (Sivapalan, A et al.,2021). In the present era, consumers are now more health-conscious, they are well aware of the inside impact of foods that they have taken and the outside impact of that food on the environment (Nielsen, 2010). Green consciousness has been characterized as an

essential pre-existing element behind green consumer behavior (Brochado et al., 2017). High eco-friendly conscious consumers are more loyal to buying eco-friendly products as compared with low eco-friendly consumers (Jnag et., 2017). These consumers are well known and aware of the impact of production, distribution, consumption of the products have an impact on the environment and can negatively affect nature, therefore they should try to reduce at extent level.

Theory of Planned Behaviour-

The theory of planned behavior states that three factors-conduct, subjective norms, and perceived behavioral control are essential to the development of behavioral intention, which in turn sequentially influences human conduct (Ajzen, 1985). Muchenje et al., 2023. This theory is the foundation theory of green consumer behavior.

Eco-buying behavior, perceived attitude, and subjective norms are the main factors for making predictions about the intended behavior.(Ajzen , 1991, 1985).

USE OF TPB has now changed with time, it includes a direct and indirect variable, in which PBC is considered as a direct variable and subjective norms and attitude are considered as indirect variables in consumer intended behavior.

Many of the research on TPB has been done to assess the relationship between attitude and intention and analyze the effect of internal and external variables on the Theory of Planned Behaviour (TPB).

Many researcher has done their study to find out the indirect impact of attitude on green consumer behaviour by taking intention as a mediating variable (Al Mamun et al., 2018; Taufique and Vaithianathan, 2018; Trivedi et.,al 2018).

TPB helps in measuring the impact of personal factors and situational factors on consumer buying intention. (Han et al., 2010).

AI and Green Subjective Norms-

According to Ajzen (1975) subjective norms are composition of social pressure and social groups. After some time Ajzen (1991) discovered that subjective norms are performed by social pressure and obedience motivation. Subjective norms refer to the evaluation of an individual based on other's influence (Werner, 2004). The effect of subjective norms is about the impact of various referencing groups on consumer behavior (Hsu et al., 2006; Yang et al.,2007). The

impact of subjective norms is measured based on the culture in which consumer belongs and their behavior is affected by members of the society. The consumer is a part of a society in which he establishes relations with others based on his liking and disliking so his way of behaving and thinking is directly influenced by that particular society atmosphere, he belongs to (Werner, 2004). This is our human tendency to get influenced by other's behaviors and try to copy their style in our own life by adopting their way of thinking. Based on the above literature review, subjective norms refer to the emerging trends of society that influence consumer behavior and their purchasing pattern.

H1: AI has a positive influence on the green subjective norms for FMCG products.

AI and Green Attitude-

Attitude is a positive and negative perspective of an individual behavior toward any specific object or situation (Fishbein & Ajzen 1975). Behavioral attitude is determined by favorable and unfavorable evaluations of an individual's behavior (Ajzen 1991). Assessment of attitude must be done based on two factors- cognitive and affective (Mackenzie et al., 1986). Cognitive attitude is about an individual way of thinking and understanding the situation whereas the affective domain of attitude is concerned with individual emotional response towards any object or particular situation (Sears, Peplau, Taylor 1991). In the environmental scenario, attitude is referred to as a cognitive and effective assessment of consumer behavior for environmental safety (Bamberg, 2003). Most of the research studies argued that attitude is one of the most significant factors affecting sustainable consumer behavior (Ellen 1994; Zhao et al., 2014; Zsoka, 2008). Many Indian researchers also support the impact of attitude on green consumer behavior related to environmental sustainability in their study (Verma & Chandra, 2017; Yadav & Pathak, 2016). Prior studies have discovered a positive correlation between the intention to use AI technology sustainably and general attitudes toward it (Fishbein & Ajzen 1975). A positive outlook is essential for adjusting to the rapid advancements of artificial intelligence technology in the current era of rapid development and digitization (Aldoseri et al., 2024).

H2: AI has a positive influence on green attitudes toward FMCG products.

AI and Perceived Behavioural Control-

Perceived behavioral control refers to the observation of an ease or difficulty in performing a particular action that is based on past experiences and hurdles (Ajzen, 1991). Perceived

behavioral control helps in determining behavior (Zhou et al., 2013). PBC is an individual response towards an event that leads to the successful performance of his conscious action, which he wants to achieve intentionally (Averill, 1973). Behavioral control must be actual instead of perceived (Bateson 2000). In the context of green marketing, PBC reflects the consumer's determination and willingness for environmental safety and sustainability. Higher willingness efforts will result in successful behavior (Ajzen, 1988).

H3: AI has a positive influence on perceived behavioral control for FMCG products.

Green Subjective Norms and Green Purchase Intention-

Sustainable behavior is combined with normative and learned behavior, normative based on the specific culture of the nation whereas learned is a self-value expressive behavior to fulfill hedonic motives (Tellstrom et al., 2006). Previous studies recognized that differences in the value of the nation have a direct impact on sustainable consumer behavior (De Maya et al., 2011). Consumer behavior is governed by acceptable norms of the country (Vermeir & Verbeke 2006). India is also one of the nations where consumer behavior is influenced by cultural norms of the nation.

H4: Green subjective norms have a positive influence on green purchase intention for FMCG products.

Green Attitude and Green Purchase Intention-

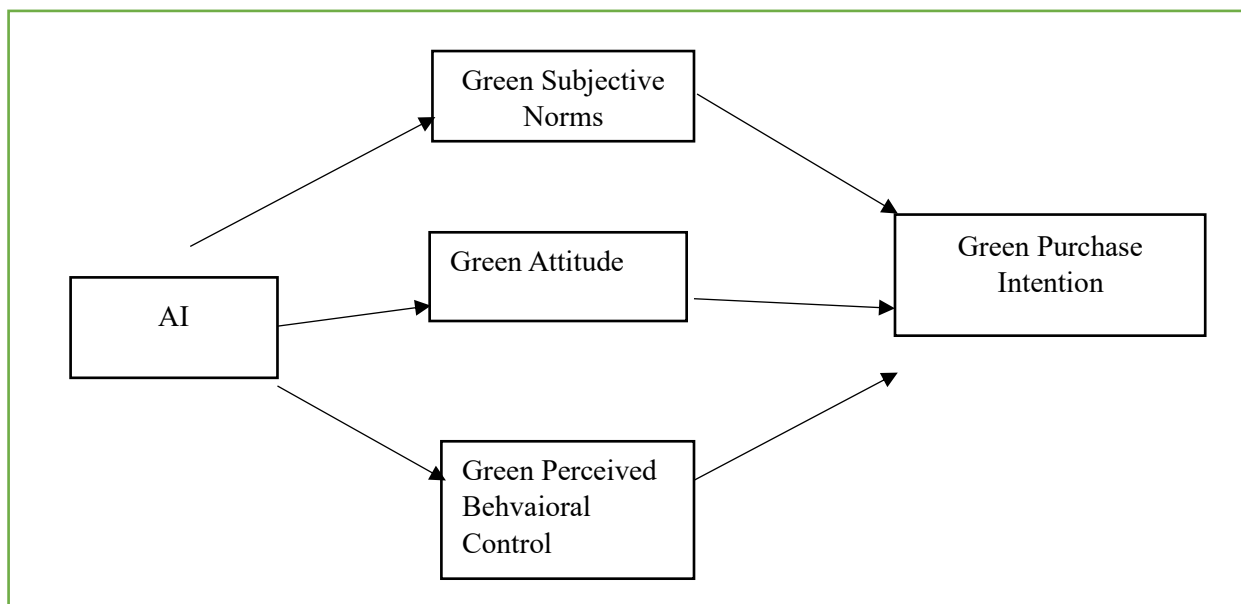
Attitude has been recognized as a reflection of behavior (Caslo&Escario, 2018). An eco-friendly attitude concentrates solely on consumer attitude as related to the environment, which involves reducing environmental degradation and saving natural resources (Caslo&Escario, 2018). Consumer behavior depends on his attitude, how much he likes or dislikes things, and how he reacts to situations. Environmental friendly attitude consumers prefer products with minimum use of energy and water, less waste generation, and lead to minimum pollutants in the environment (Vazifehdoust et al., 2013). A sustainable consumer behavior attitude refers to buying eco-friendly, bio-degradable products and following the principles consciously for environmental sustainability (De Paco et al., 2019). Some research argued that altruism is one of the factors behind eco-friendly purchasing (Gilg, A et al., 2005).

H5: Green attitude has a positive influence on green purchase intention for FMCG products.

Green Perceived behavioral Control and Green Purchase Intention

In the context of environmental sustainability, high perceived behavior control encourages consumers to be eco-friendly and strengthens their buying intentions whereas low perceived behavior control represents low buying intentions (Yadav & Pathak, 2016). Motivating consumers through high PBC is a significant factor in generating positive attitudes toward sustainability (Thøgersen, 2005). Behavior control has two aspects, self-efficacy as an internal factor and PBC as an external factor (Terry & O’Leary 1995). There is a direct influence of PBC on consumer behaviour (Terry & O’Leary 1995). PBC has multi-dimension (Sparks et al., 1997). It is opposed to the statement given by (Terry & O’Leary 1995). Perceived Behavior Control can be evaluated by difficulty level, with the inclusion of internal factors as the consumer's ability to perform intentionally and external factors as control of the consumer on his behavior (Sparks et al, 1995).

H6: Green perceived behavioral control has a positive influence on green purchase intention for FMCG products.



Conceptual Framework

Research Methodology

This study examines how consumer behaviour and purchase intentions towards eco-friendly beauty products are influenced by artificial intelligence (AI)-enabled green marketing tools using a quantitative, cross-sectional, and descriptive research design based on the Theory of Planned Behaviour (TPB).

Research Design

By applying Ajzen's TPB model as a conceptual lens to comprehend green consumer behaviour, the research design is theory-driven. Within the TPB framework, the study incorporates AI as an external influencer to evaluate its effects on the three main determinants: Perceived Behavioural Control (PBC), Subjective Norms (SN), and Attitude (AT), which in turn affect Purchase Intention (PI). The method is deductive and aims to test theories and literature-based hypotheses. Five-point Likert scales were used to create a structured questionnaire.

Population and Sample

The target audience consists of Indian consumers who have heard of or used green beauty products, as well as those who have used AI-powered tools or recommendations. To guarantee relevance to the research theme, a non-probability purposive sampling technique was employed. A structured survey instrument was used to gather 285 responses in total. A final sample of 260 valid responses was examined after the data was cleaned for missing values and inconsistencies.

Data Analysis

Table 1: Correlation Matrix

Variables	AI	AT	SN	PBC	PI
AI	1	0.58	0.52	0.55	0.60
AT		1	0.65	0.61	0.68
SN			1	0.57	0.64
PBC				1	0.66
PI					1

In accordance with the Theory of Planned Behaviour (TPB), the correlation analysis showed some significant relationships between the variables being studied: Artificial Intelligence (AI), Attitude (AT), Subjective Norms (SN), Perceived Behavioural Control (PBC), and Purchase Intention (PI). AI and attitude were found to have a moderately strong positive relationship ($r = 0.58$), suggesting that users of AI-driven features—like eco-information and personalised recommendations—tend to form more positive opinions about green products. Similar to this, the correlation between AI and Subjective Norms ($r = 0.52$) indicates that AI also fosters the growth of peer influence or perceived social approval, most likely through mechanisms like customer reviews, influencer content, and peer-driven recommendations built into intelligent

platforms. Perceived behavioural control and AI was also positively correlated ($r = 0.55$), indicating that integrating AI makes decision-making easier and boosts consumer confidence in their capacity to buy environmentally friendly products. Above all, AI showed a strong positive correlation with Purchase Intention ($r = 0.60$), highlighting its direct influence on consumers' intent to make sustainable purchases. This is in line with the extended TPB model, which views AI as an external variable that enhances behavioural intentions by positively influencing the three main TPB constructs of attitude, SN, and PBC, rather than just being a supporting technology.

Further demonstrating how social influence frequently reinforces favorable opinions of green products is the correlation between attitude and subjective norms ($r = 0.65$). Customers who have positive opinions about environmentally friendly options are more likely to follow peer and societal norms. Additionally, there was a strong correlation between attitude and PBC ($r = 0.61$), indicating that people who value sustainable choices are also more likely to feel capable of making them. Additionally, the TPB proposition that attitude significantly predicts the likelihood of engaging in a specific behavior—in this case, buying green beauty products—was supported by the strongest relationship in the matrix between attitude and purchase intention ($r = 0.68$).

Additionally, subjective norms showed a positive correlation with PBC ($r = 0.57$), suggesting that social validation may help consumers feel more confident about their capacity to make environmentally friendly decisions. The idea that peer pressure and cultural norms have a significant impact on consumers' willingness to act sustainably is supported by the correlation between SN and PI ($r = 0.64$). The significance of perceived control is also demonstrated by the correlation between PBC and PI ($r = 0.66$); customers are more likely to plan to buy green products if they believe they can easily access and afford them.

The correlation matrix as a whole demonstrates that the integration of AI tools positively reinforces the individual's sense of control, perceived social pressure, and personal attitudes, all of which have an impact on Purchase Intention. These results highlight the usefulness of AI in encouraging sustainable consumer behaviour and provide solid empirical support for the expanded TPB framework. AI helps close the gap between green awareness and green action by bolstering all three antecedents of intention.

Table 2: Regression Analysis

Predictor	Coefficient	t-Stat	p-Value
AI	0.34	3.21	0.002
AT	0.28	2.87	0.005
SN	0.21	2.45	0.014
PBC	0.25	2.65	0.009

The findings of the regression analysis provide convincing information about the variables influencing consumers' propensity to buy eco-friendly cosmetics. With p-values significantly below the conventional cutoff of 0.05, the predictors looked at Artificial Intelligence (AI), Attitude (AT), Subjective Norms (SN), and Perceived Behavioural Control (PBC) were all determined to be statistically significant. AI has the greatest impact on purchase intention, as evidenced by its highest regression coefficient ($\beta = 0.34$). This implies that customers are more likely to form a strong intention to purchase sustainable goods after interacting with AI-enabled tools, such as virtual try-ons or tailored eco-friendly recommendations. With a coefficient of 0.28, attitude came in second, supporting the notion that consumers' positive assessments of green products significantly influence their propensity to buy.

Additionally, subjective norms had a positive effect ($\beta = 0.21$), emphasising how social influence shapes environmentally conscious behaviour. When consumers believe that important people, like friends, family, or influencers, support or endorse their decision to buy green products, they seem more likely to do so. Finally, Perceived Behavioural Control ($\beta = 0.25$) was found to be a significant factor, suggesting that people are more likely to intend to buy eco-friendly products when they feel confident about their ability to access or afford them. Together, these results support the extended Theory of Planned Behaviour and demonstrate how social, personal, and technological factors influence sustainable consumer intentions.

Conclusion

The findings of this study reveal that artificial intelligence (AI) influences important psychological factors listed in the Theory of Planned Behaviour (TPB), thereby greatly improving green consumer behavior. The results demonstrate that AI-enabled tools are essential for influencing consumers' favorable opinions, enhancing social influence, and increasing their sense of control over the acquisition of environmentally friendly goods. With AI having the largest individual influence, all three of these factors perceived behavioural control, attitude, and subjective norms were found to be statistically significant predictors of

purchase intention. This suggests that intelligent, tailored digital experiences actively encourage sustainable decision-making in addition to enhancing consumer engagement. Because AI acts as a link between awareness and actual behavior, the study emphasizes the growing significance of incorporating AI into green marketing strategies.

Future Implication

The study's inferences have some significant ramifications for future research, marketing strategies, and legislative decisions. Future research can examine AI's long-term effects on sustainable behaviour in a variety of cultural and demographic contexts as it develops and becomes more integrated into consumer experiences. Researchers might also look at the distinct ways that various AI tools, like chatbots, recommendation engines, or augmented reality, influence consumers' decisions to make green purchases. The findings highlight the potential of AI for marketers to influence social norms, boost consumer confidence, and personalise eco-friendly messaging—all of which increase purchase intentions. Companies can use these insights to create more intelligent, environmentally friendly campaigns that speak to people's values and current social trends. Regarding policy, governments, and environmental groups could work with technology

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A COMPARATIVE STUDY BETWEEN ONLINE AND OFFLINE SHOPPING PATTERN OF CUSTOMERS IN DEHRADUN REGION

Dr. Rohit Sharma

Asst. Professor, Govt. Degree College, Tanakpur, Uttarakhand

Email: rohit.sharma.utt@gmail.com

Abstract

The objective of this research paper is to find and compare the various attributes which are helpful in understanding the pattern of consumers and their satisfaction level on online and offline shopping. The research conducted on the basis of survey done to highlight the experience of both online and offline shopping. The study is done to find the various factors contributing in deciding the pattern of consumers in terms of online and offline shopping modes. The various research conducted in this field have also been discussed in this research paper. Analysis has been done between online and offline shopping variables in experiencing the behavior of consumers. The findings depict various advantages of using online and offline shopping either of the each other. The samples collected by forming demographic base of age, gender, income levels etc. The choice of shopping depends on situation. Like, a coin has two faces, the online and offline shopping have their own advantages and disadvantages.

This research paper throws light on the significant difference between online and offline shopping on various attributes which have been discussed below in this paper.

Keywords: attributes, satisfaction level, survey, shopping variables, demographic

Introduction

In general, there are two types of shopping means- Online shopping and Offline shopping. In Current scenario people in metro or tier 2 cities are more inclined towards online shopping comparing with offline shopping. With the changing lifestyle, shortage of time, internet penetration and choices available the significant growth has been witnessed specially after Post-covid. Online shopping is much popular but at the same time traditional shopping is still

on demand and has not lost its existence because customers prefer to examine the products by visiting personally to the shops. They do so to check the utility and keep possession of the products. The India online shopping market has witnessed a significant rise since the last past decade due to transformation of economy to the new era of digital world where digital transactions have occupied prominence in Indian economy. These all has happened due to the Governments' initiatives like 'Digital India'. Moreover, high internet penetration found mostly in all the remote areas especially in Tier 2 and Tier 3 cities. With rising awareness and changing lifestyles, online shopping has now become a new trend. The increasing demand and wide surge in choices, convenience, and comfort provided by E-commerce has empowered emerging young aspirants to shop more online, and to fulfil their aspirations. Major players like **Amazon** and **Flipkart**, niche market players such as **Meesho** and others, and conglomerates like **Tata** and **Reliance** are fiercely competing in these markets.

Among e-commerce platforms **Amazon** has topped with **73%** is the most preferred platform followed by **Flip cart 70%**, **Meesho 30%** and **Jio-mart 20%** and others.

Consumers have two choices online shopping and offline shopping for purchase preferences to satisfy either of these two. Besides, online shopping offline shopping also offers various advantages like benefits to personally visit the shops to touch and inspect the goods of its own. As the items are tangible they can be touched and seen. A conscious consumer could remove the doubts before making purchase and the salesperson or shop owner removes the doubts arises in the mind of consumers on the spot. This social component generates a sense of bonding between a consumer and a retailer and enhances the overall experience.

A consumer derives benefits from both online and offline shopping in terms of price, affordability, acceptance, product availability and many others. Nowadays lot of consumers prefers both methods of shopping depends upon their choice of preferences and looking benefits in each.

Online Shopping

Online shopping is well known as electronic shopping where shopping takes place through online mode or you can say web or internet. Due to advancement in technology and intensive internet user online shopping has got a new pace of development. One can buy anything from anywhere by sitting at one place just by clicking the button. The online shopping provides the virtual market where buyer and seller interact with each other to share common words by clinching deal online in exchange of goods with money. Goods and services are

delivered at the doorstep of consumer conveniently as per requirements. There are plenty of advantages an online shopping offer:

Advantages:

- Time saving
- Money saving
- Convenient
- Doorstep delivery
- Availability of various payment modes
- Exchange the goods facility

Offline Shopping / Traditional Shopping

Offline shopping is traditional way of shopping which mostly Indians prefer. Here, the consumer personally visits the market or shop and clinch the deal. Both buyer and seller interact personally to close the sale deed. This method offers satisfaction to consumer as his/her doubts are removed on the spot. She/he can personally see, touch and feel the product or service.

Advantages:

- Physically check the product
- Make assurance and acceptance of the product
- Instant removal of doubts
- Replacement of Goods
- Easy Accessibility

Literature Review

Mehta, S. (2014) studied the influence of promotional offers on online buying behavior. According to the research, sales based on discounts during festive seasons hugely impacted buying decisions, especially in Tier 2 cities.

Agarwal, K. (2015) offered a comparative analysis of shopping behavior both online and offline and reported that Tier 2 consumers utilized online sites for product search but made the majority of purchases offline due to concerns of trust.

Singh, D. (2017) researched the social media platforms' contribution to driving consumers' purchase decisions. In its findings, social media recommendations were seen to contribute substantially towards consumers' purchase decision-making, particularly among youth.

Patel, A. (2018) analyzed consumer trust in e-commerce, highlighting the importance of brand reputation and return policies in building consumer confidence in online transactions.

Nair, R. (2019) examined why cash-on-delivery is increasing popularity in Tier 2 cities, and why it is emerging as a significant enabler of first-time online consumers.

Khan, M. (2020) analyzed delivery timelines and logistics, demonstrating that Tier 2 consumers would be more likely to leave carts behind if delivery timelines were longer than expected.

Verma, H. (2021) evaluated the contribution of vernacular interfaces to e-commerce adoption among consumers who do not speak English, a driver of increased penetration within Tier 2 markets.

Red Seer (2022) covered the boom in e-commerce in smaller cities, crediting better internet penetration and the availability of digital modes of payment.

Statista (2022) gave insight into the market share of key e-commerce giants in India and consumer buying choices in various city tiers.

Amazon India (2023) explained changes in consumer behavior, such as a higher demand for grocery and essential items in Tier 2 cities.

Flipkart Insights (2023) identified the rising trend of affordability-driven shopping with an emphasis on EMI and budget-friendly products in non-metro areas.

Reserve Bank of India (2023) analyzed digital payment trends and the increasing reliance on UPI transactions across both metro and Tier 2 cities.

Research Objectives

- To study the pattern of shopping among customers in Dehradun region only.
- To study the variables effecting the consumers' behavior.
- To identify the needs and expectations of consumers.

- To examine the purchase frequency pattern of a consumer in terms of online and offline shopping.

Research Methodology

The explorative and descriptive research methodologies have been conducted with the use of secondary sources which includes reports from Red Seer, Statista, Amazon India, Flipkart Insights, RBI. The research utilizes information from various sources including research journals, business periodicals etc.

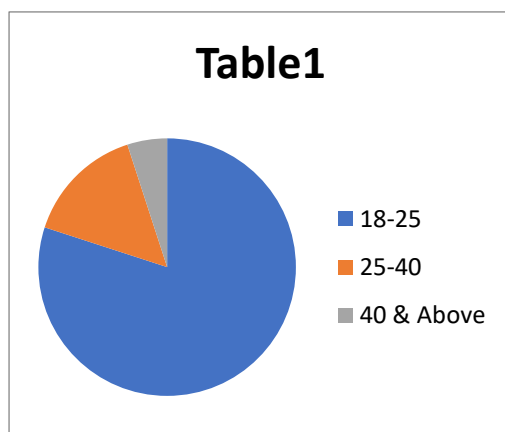
Sample Size- 50 responses have been collected.

Sampling Area- Dehradun and nearby areas.

Primary data has been collected through structured questionnaire and there by responses has been sought.

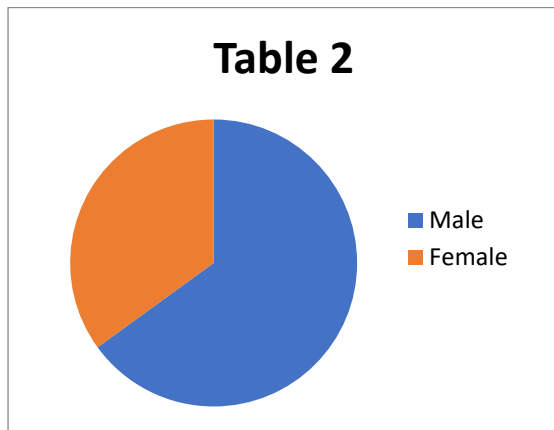
Data Analysis & Interpretation

1) Age



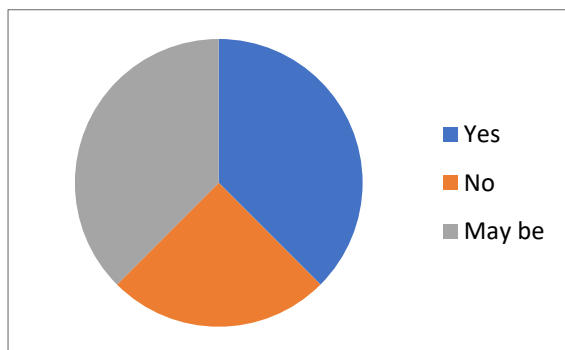
Options	Respondents	Percentage
18-25	40	80
25-40	7	15
40 & Above	3	5
Total	50	100

2) Gender



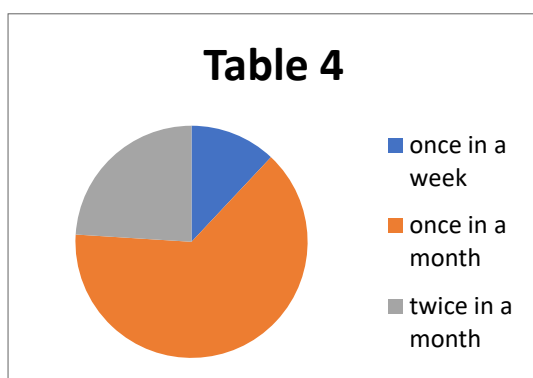
Options	Respondents	Percentage
Male	33	65
Female	17	35
Total	50	100

3) Do you trust on Online shopping?



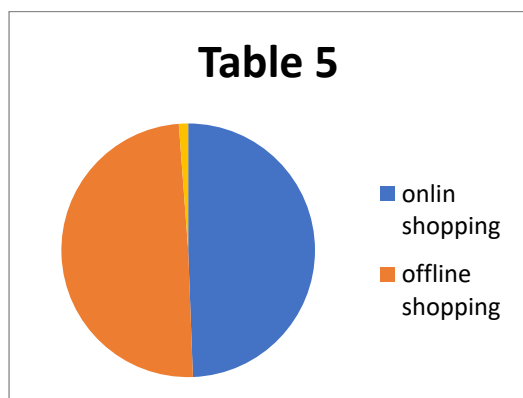
Options	Respondents	Percentage
Yes	19	37.5
No	12	25
May Be	19	37.5
Total	50	100

4) How frequently do you prefer online shopping?



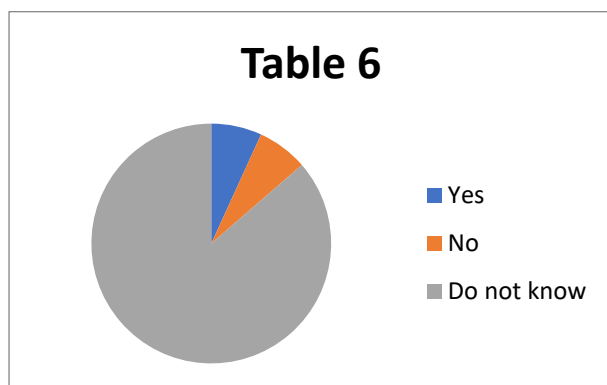
Options	Respondents	Percentage
Once in a week	7	14
Once in a month	31	62
Twice in a month	12	24
Total	50	100

5) Which option do you prefer most?



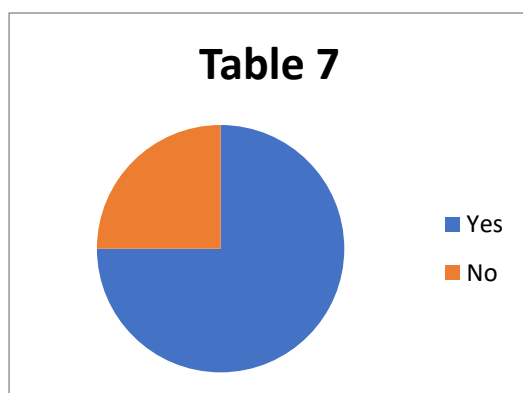
Options	Respondents	Percentage
Online Shopping	25	50
Offline Shopping	25	50
Total	50	100

6) Is online shopping is better than offline shopping?



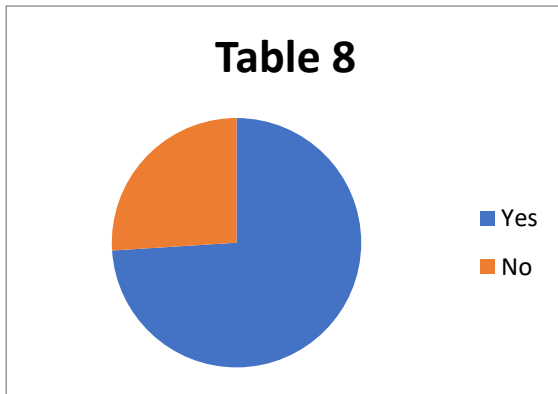
Options	Respondents	Percentage
Yes	6	12
No	6	12
Do not Know	38	76
Total	50	100

7) Is online shopping has far reaching effects on the minds of customers than offline shopping?



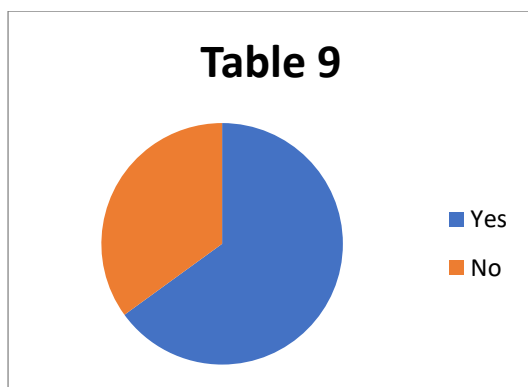
Options	Respondents	Percentage
Yes	38	75
No	12	25
Total	50	100

8) Is online shopping is better in terms of convenience?



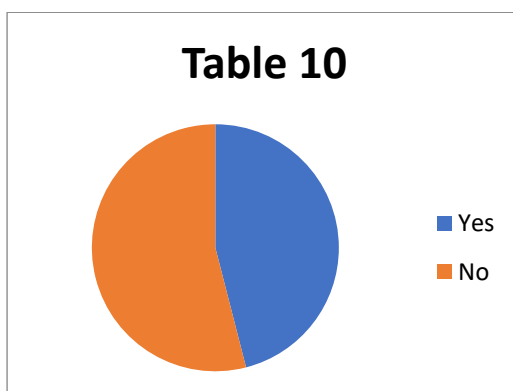
Options	Respondents	Percentage
Yes	38	75
No	12	25
Total	50	100

9) Is Online shopping is cheapest in terms of price?



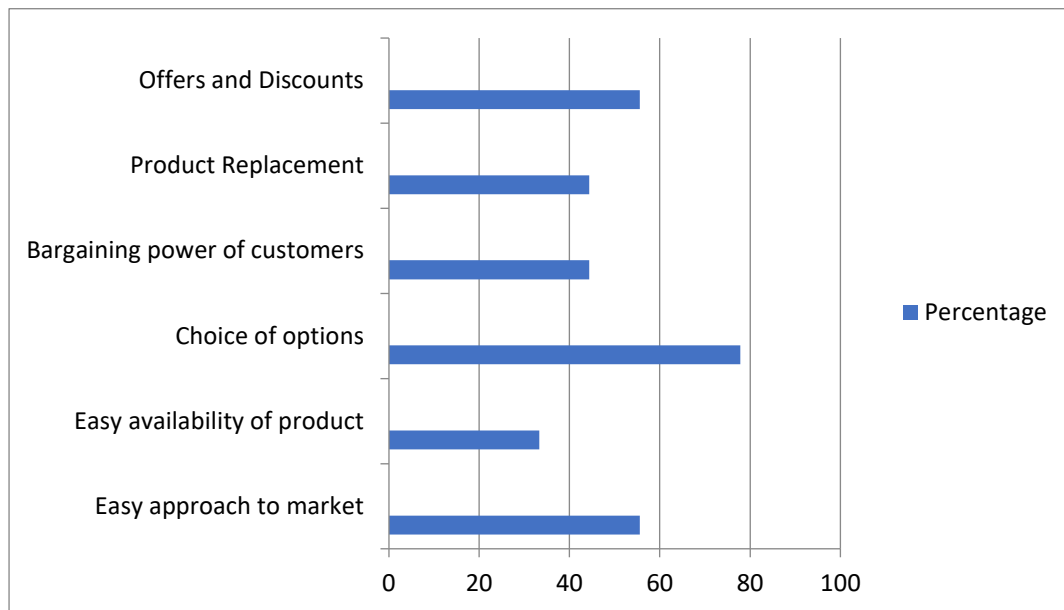
Options	Respondents	Percentage
Yes	33	65
No	17	35
Total	50	100

10) Is quality of products or services is better in terms of offline shopping?

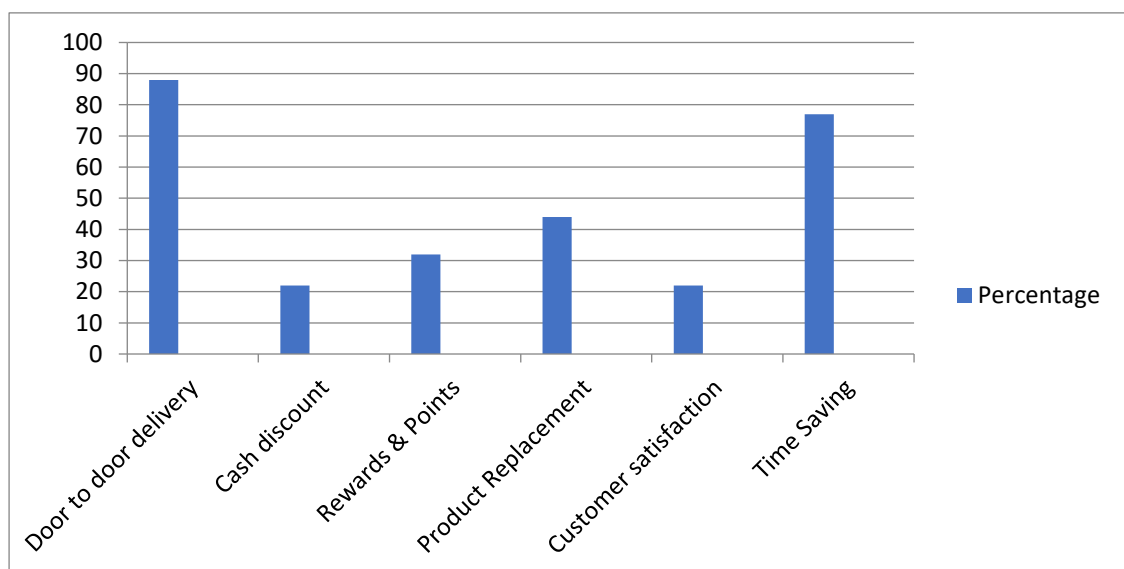


Options	Respondents	Percentage
Yes	23	45
No	27	55
Total	50	100

11) The reasons why do you choose offline shopping?



12) The reasons why do you choose online shopping?



Interpretation

- According to age differences, 80% of the customers are between the range of 18-25 years, while who responded 15% of the total is in the range of 25-40 years and only 3% above 40 years are considered for study.
- As per the basis of responses on gender basis 65% males and 35% responded.
- 37.5% shown interest in online shopping while 25% did not show any interest and 37.5% could prefer either online or offline shopping.
- On the basis of frequency of online shopping 62% do shopping online once in a month, 24% do twice in month and only 14% prefer to do online shopping once in a week.
- According to the choices of preference 50-50% prefer equally online and offline shopping.
- 76% respondents do not know which shopping mode is better. 12% go for online shopping while rest 12% prefer offline mode.
- 75% customers admit that online shopping has good impact on the minds of the customers.
- 65% of the total respondents show online shopping as a cheapest mode while only 35% suggests offline shopping is cheaper.
- In terms of quality of products or services 45% like offline shopping and 55% respondents think online shopping is good.
- In terms of offline shopping nearly 78% have better choices of options available, followed by easy approach to market as another factor stands nearly 56% and same percentage is for offers and discounts too. While, product replacement and bargaining power of consumers have the same percentage of nearly 42%. On the other hand nearly 36% responded any shortage of product.
- Nearly 88% respondents like delivery at door-step following 78% timesaving. Less than 45% respondents only give priority to product replacement. While only 30% perceives rewards and points better option in online shopping. Cash discount and customer satisfaction factors put at the last.

Conclusions

Online and offline shopping each have their unique advantages and disadvantages. The choice between the two depends upon individual preferences, the type of products being bought, and the overall shopping experience sought. The choice of preferences of the mode of

shopping varies from customer to customer. Though due to large internet penetration and changing lifestyle consumers are more inclined towards online shopping. But still offline shopping occupies its position which is not much as less far behind online shopping in terms of customer involvement, accessibility, bargaining e.t.c. Mostly the youngsters and youth like to do shopping online in comparison to elders. There are various factors considered under online and offline shopping actually decides the pattern of shopping. These patterns keep changing from time to time according to the preferences of the consumers. So it could not be say that which way of shopping is most preferable as circumstances decide the buying habits and motives of consumers. The consumer likes one factor of particular mode of shopping while ignoring the other one of different shopping mode. He/she might also do comparison among various factors before making any purchase. But overall as keen of interest online shopping is most preferable in comparison to offline shopping.

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EMPLOYMENT GENERATION THROUGH RENEWABLE ENERGY: A CASE STUDY OF MUKHYAMANTRI SAUR SWAROJGAR YOJANA IN UTTARAKHAND

Prof. (Dr.) Chatar Singh Negi

Faculty of Commerce

Pt. L. M. S. Campus, Rishikesh (Dehradun)

E-Mail: negics75@gmail.com

Dr. Sanjay Kumar

Assistant Professor

Department of Commerce

Govt. Degree College, Narendra Nagar (T.G)

E-Mail: drsanjay.kumar55@gmail.com

Abstract

The study Employment Generation through Renewable Energy: A Case Study of Mukhyamantri Saur Swarojgar Yojana in Uttarakhand explores the role of renewable energy, particularly solar power, in promoting self-employment and sustainable rural development. Launched in 2020 by the Government of Uttarakhand, the Mukhyamantri Saur Swarojgar Yojana (MSSY) is a targeted initiative designed to address rural unemployment, especially among youth, small farmers, and returning migrants, by facilitating the establishment of small-scale solar power plants. These solar units, ranging from 25 kW to 200 kW, are supported by a structured financial model including low-interest loans and capital subsidies, while the electricity generated is purchased by Uttarakhand Power Corporation Limited (UPCL) at a fixed rate for 25 years. This ensures a stable income source for the beneficiaries and encourages investment in clean energy. The scheme also promotes integrated land use, allowing cultivation or apiculture under solar panels, thus enhancing land productivity.

The research highlights the socio-economic and environmental benefits of the scheme, such as reduced rural-to-urban migration, increased income levels, and alignment with India's clean energy goals. However, it also identifies key challenges including lack of awareness, financial constraints, logistical issues in hilly terrains, and bureaucratic delays. The study

concludes with recommendations for improving policy execution, enhancing technical support, and expanding awareness programs to ensure the scheme's long-term success. Overall, the MSSY stands as a model of how decentralized renewable energy projects can foster inclusive growth, empower rural communities, and contribute to environmental sustainability. Through a comprehensive analysis of implementation, impact, and challenges, this case study offers valuable insights into the potential of renewable energy as a catalyst for employment generation and rural economic transformation in mountainous states like Uttarakhand.

Keywords: UREDA, MSSY, Self-Employment, Renewable Energy, Entrepreneurship.

Introduction

Unemployment and lack of livelihood opportunities are among the most pressing challenges faced by hilly and remote regions of India. In Uttarakhand, a largely mountainous state, these challenges are intensified by difficult terrain, limited infrastructure, and restricted industrial development. Recognizing the need for sustainable and localized employment generation, the Government of Uttarakhand launched the Mukhyamantri Saur Swarojgar Yojana (MSSY) in 2020. This innovative scheme aims to promote self-employment through solar energy, aligning with the dual objectives of clean energy promotion and rural economic empowerment.

The Mukhyamantri Saur Swarojgar Yojana is designed to encourage individuals, especially youth, migrants, and small-scale farmers, to establish solar power plants and sell electricity to the grid or use it for commercial activities like irrigation, poultry farming, or agro-processing. By providing financial assistance, capital subsidies, and technical guidance, the scheme intends to create a new class of solar entrepreneurs in Uttarakhand, thereby reducing migration from rural areas and generating steady income locally. The significance of the MSSY lies in its integration of sustainable development and employment generation. With the growing emphasis on renewable energy to combat climate change and reduce carbon emissions, this scheme places Uttarakhand at the forefront of India's clean energy transition while simultaneously addressing grassroots economic challenges. It enables beneficiaries to utilize idle or barren land for solar installations, thus converting underutilized resources into productive assets.

Since its launch, the scheme has been implemented under the aegis of the Uttarakhand Renewable Energy Development Agency (UREDA), which plays a crucial role in evaluating applications, approving projects, and facilitating technical execution. The scheme offers financial assistance of up to 70% for individuals and 60% for cooperative groups, with a clear focus on inclusivity and outreach to marginalized communities. This project report aims to study the progress and impact of the Mukhyamantri Saur Swarojgar Yojana over the five-year period from 2019–2024. It explores key areas such as the number of beneficiaries, solar capacity installed, investment trends, challenges in implementation, and the socio-economic impact on rural households. The report also includes data analysis, feedback from stakeholders, and recommendations to enhance the effectiveness of the scheme.

By critically examining the MSSY, this project seeks to understand how public policy, when combined with green technology and local entrepreneurship, can play a transformative role in state-level development. The findings of this report are expected to provide valuable insights into policy execution at the grassroots level and the potential for replicating such models in other Indian states.

Objectives

The objective of this study is to analyze the Mukhyamantri Saur Swarojgar Yojana in Uttarakhand, understand its role in promoting solar-based self-employment, evaluate its implementation and impact on beneficiaries, identify challenges faced, and suggest measures to improve its effectiveness in fostering sustainable development. The main objectives are-

- To understand the key features and goals of the Mukhyamantri Saur Swarojgar Yojana in Uttarakhand.
- To examine the role of the scheme in promoting self-employment through solar energy.
- To analyze the implementation process and identify the challenges faced by beneficiaries.
- To assess the impact of the scheme on the rural economy and sustainable development.
- To suggest possible improvements for better outreach and effectiveness of the scheme.

Research Methodology

The study is based on both primary and secondary data. Primary data was collected through informal interviews with selected beneficiaries of the scheme and local government officials. Secondary data was gathered from government reports, official websites (such as UREDA), newspaper articles, and research papers. The research follows a descriptive method, focusing on understanding the structure, implementation, and outcomes of the scheme in real-world settings. Simple tools like charts and tables are used for analysis.

Review of Literature

The Mukhyamantri Saur Swarojgar Yojana (MSSY), initiated by the Government of Uttarakhand in 2020, has attracted scholarly and policy-level attention for its focus on renewable energy and rural self-employment. Literature on solar energy initiatives in India provides a foundational context for understanding MSSY. According to Bhattacharyya (2019) in *"Energy Economics: Concepts, Issues, Markets and Governance"*, decentralized solar energy systems have the potential to revolutionize rural livelihoods by enabling local entrepreneurship and reducing dependency on grid electricity. MSSY builds on this framework by integrating employment generation with solar power production.

Jain and Sharma (2021), in their article *"Rural Solar Energy Schemes in India: A Policy Review"* published in the *Renewable Energy Journal*, note that Uttarakhand's approach stands out due to its use of state-specific geography and return migration patterns post-COVID-19. They highlight MSSY as a model for engaging returning migrants through sustainable livelihood schemes, which utilize barren land for solar power plants ranging from 25 kW to 200 kW.

Kumar et al. (2022), in a case study published in *Energy Policy and Management Review*, examine the socio-economic impacts of MSSY in districts such as Almora and Pithoragarh. Their findings show that beneficiaries experienced a 20–30% increase in household income within the first year of installation. The study also notes increased awareness of renewable energy and reduced urban migration pressures.

In the book *"Renewable Energy and Sustainable Rural Development"* by Purohit (2020), MSSY is referenced as a promising scheme aligning with the Ministry of New and

Renewable Energy's broader goals. Purohit emphasizes the importance of financial incentives, such as subsidies and interest-free loans, which are core components of MSSY. Thus, the existing literature supports the view that MSSY is not only an employment scheme but also a vehicle for energy transition in hill states. The scheme has generated academic interest due to its multi-dimensional impact—social, economic, and environmental—especially in post-pandemic rural India.

Objectives of the Scheme:

- **Promote Self-Employment:** Encourage entrepreneurship among youth and returning migrants by providing opportunities in the renewable energy sector.
- **Utilize Renewable Energy:** Harness solar energy to meet the state's power requirements sustainably.
- **Economic Development:** Stimulate economic growth in rural areas by creating employment opportunities.
- **Environmental Conservation:** Reduce dependence on fossil fuels, thereby mitigating environmental degradation.

Implementation and Monitoring:

The scheme is implemented through the Uttarakhand Renewable Energy Development Agency (**URED**A), which provides technical support and ensures adherence to quality standards. District-level committees, headed by the District Magistrate, are responsible for project allocation and monitoring, ensuring transparency and efficiency in execution.

Eligibility Criteria:

- **Residency:** Applicants must be permanent residents of Uttarakhand.
- **Age Limit:** Individuals aged between 18 to 50 years.
- **Land Ownership:** Must own or have legal rights to the land where the solar plant is to be installed.
- **Financial Capacity:** Ability to invest the margin money required for the project.

Financial Structure:

Under MSSY, beneficiaries can install solar power plants (20 kW to 200 kW) on owned or leased land. UPCL purchases the generated electricity at ₹4.64 per unit for 25 years, ensuring stable income. A 25 kW plant requires 1.5–2 Nali (about 300 sq. m.) and costs around ₹10 lakhs, generating 38,000 units annually—yielding ₹1.76 lakhs per year. Financial support includes loans covering up to 70% of project cost at 8% interest over 15 years, with a 30% margin contribution by the beneficiary. Capital subsidies of 15%–30% are also offered, depending on the district’s classification, to ease initial investment.

Implementation Process:

1. **Application Submission:** Interested individuals apply through the official MSSY portal.
2. **Verification:** District-level committees verify the applications and land documents.
3. **Sanctioning:** Upon approval, banks sanction the loan amount.
4. **Installation:** Beneficiaries install the solar plant with assistance from designated agencies.
5. **Commissioning:** After installation, the plant is commissioned, and the PPA is signed with UPCL.

Analysis of Data

Table: Year-wise Progress under Mukhyamantri Saur Swarojgar Yojana in Uttarakhand (2019–2024)

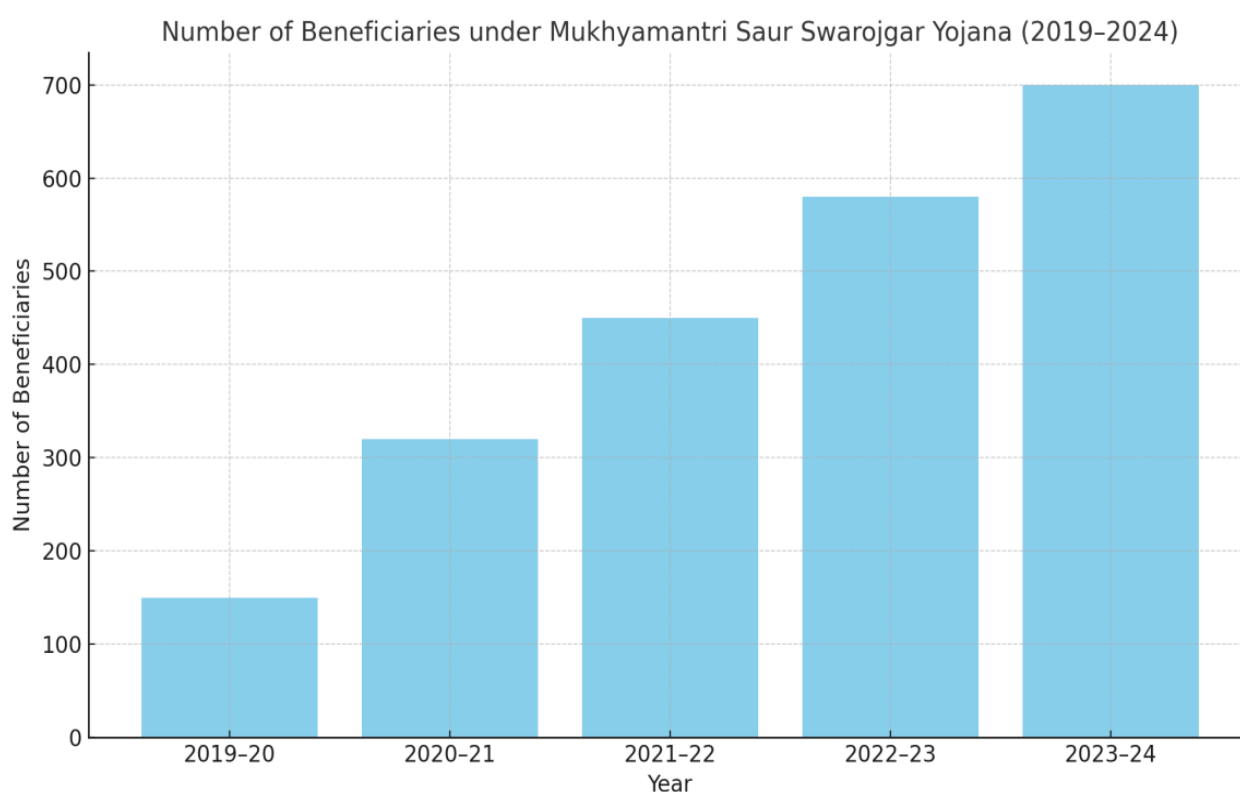
Year	Number of Beneficiaries	Total Installed Capacity (kW)	Total Investment (₹ Lakhs)
2019–20	150	600	225
2020–21	320	1280	480
2021–22	450	1800	675
2022–23	580	2320	870
2023–24	700	2800	1050

Source- Uttarakhand Renewable Energy Development Agency (UREDA)

The table indicates a steady and significant increase in the adoption of the Mukhyamantri Saur Swarojgar Yojana over the five-year period. From 150 beneficiaries in

2019–20, the number rose to 700 in 2023–24, reflecting growing awareness and accessibility of the scheme. Correspondingly, the installed solar capacity expanded from 600 kW to 2800 kW, while total investment surged from ₹225 lakhs to ₹1050 lakhs. The consistent growth highlights the scheme’s positive reception among rural entrepreneurs and its contribution to promoting renewable energy and self-employment. The rise in investment and capacity suggests effective implementation and increasing confidence among beneficiaries. Overall, the scheme appears to be achieving its objectives of sustainable development and economic empowerment in Uttarakhand.

Chart: Number of Beneficiaries Over 5 Years(2019–2024)



Source- Uttarakhand Renewable Energy Development Agency (UREDA)

Chart: Number of Solar Plants Installed Over 5 Years(2019–2024)

Year	Solar Plants Installed
2019–20	 (e.g., 50)
2020–21	 (e.g., 250)
2021–22	 (e.g., 700)
2022–23	 (e.g., 1,500)
2023–24	 (e.g., 3,000+)

Source- Uttarakhand Renewable Energy Development Agency (UREDA)

Employment Generation:

The **Mukhyamantri Saur Swarojgar Yojana (MSSY)** has emerged as a promising initiative for employment generation in the rural and semi-urban regions of Uttarakhand. Launched with the objective of promoting solar-based self-employment, the scheme has enabled individuals—especially returnee migrants, unemployed youth, and small farmers—to establish solar power plants and engage in related entrepreneurial activities. From 2019 to 2024, the scheme has directly benefited hundreds of individuals by creating avenues for sustainable income generation through electricity production, irrigation services, agro-processing, and allied businesses. Indirect employment has also been generated in the form of solar panel installation, maintenance, equipment supply, and technical support services. Each solar project under MSSY typically engages multiple local workers during both construction and operational phases.

Moreover, by utilizing idle land and supporting decentralized power generation, the scheme has helped reduce migration by creating viable livelihood opportunities within the state itself. It has also fostered entrepreneurial thinking and increased awareness about renewable energy among the rural population. Overall, MSSY has played a vital role in linking clean energy with employment, thereby supporting the state's broader goals of economic development, energy sustainability, and rural youth empowerment.

Renewable Energy Contribution:

The Mukhyamantri Saur Swarojgar Yojana (MSSY) has made a meaningful contribution to the promotion of renewable energy in Uttarakhand, aligning with India's national commitment to sustainable development and clean energy goals. Introduced in 2020, the scheme aims to harness solar power for both economic upliftment and environmental conservation by encouraging decentralized energy production through small-scale solar plants. Over the five-year period from 2019 to 2024, the scheme has facilitated the installation of several megawatts of solar capacity through individual and cooperative projects. These decentralized solar units contribute directly to the state's renewable energy mix, reducing dependency on fossil fuels and the conventional power grid. The program also optimizes the use of barren or underutilized land in hilly regions, transforming it into productive solar farms.

Beyond energy production, MSSY has helped raise awareness among rural populations about the benefits of clean energy, fostering a culture of sustainability. The solar systems set up under this scheme supply power for irrigation, small businesses, and grid integration, which not only support rural livelihoods but also reduce the carbon footprint of these activities. By linking self-employment with green technology, the Mukhyamantri Saur Swarojgar Yojana exemplifies how state-level policy can contribute to India's larger mission of transitioning to a low-carbon economy. It demonstrates the potential of renewable energy as a driver of both environmental and economic transformation in a geographically diverse state like Uttarakhand.

Income Generation:

The Mukhyamantri Saur Swarojgar Yojana in Uttarakhand, launched in 2019, aims to empower local entrepreneurs by promoting solar energy-based businesses. This initiative aligns with the state's goal of sustainable development and job creation, particularly in rural areas. Under this scheme, individuals can set up solar energy-based units, thus creating employment opportunities while addressing the state's energy needs.

The project promotes small-scale solar ventures, such as the installation of solar panels, solar-powered irrigation systems, and solar-powered street lighting. By providing financial assistance, technical training, and infrastructure support, the scheme enables entrepreneurs to start their businesses with minimal investment.

1. **Solar Panel Installation:** Entrepreneurs can earn by setting up solar panels for homes, schools, and industries, contributing to renewable energy production.
2. **Solar-powered Irrigation Systems:** Farmers benefit from affordable irrigation systems, and entrepreneurs generate income by installing and maintaining these systems.
3. **Maintenance and Services:** Regular maintenance of solar equipment, including cleaning and repairs, provides additional income opportunities.
4. **Solar Product Distribution:** Distribution of solar-powered devices like lights, fans, and water pumps can create retail opportunities.

This scheme significantly improves the economic conditions of marginalized communities, promotes green energy, and contributes to a sustainable future by reducing dependency on non-renewable energy sources. By 2024, the Mukhyamantri Saur Swarojgar Yojana is expected to have a significant impact on rural development and the promotion of clean energy in Uttarakhand.

The **Mukhyamantri Saur Swarojgar Yojana (MSSY)**, launched in 2020 by the Government of Uttarakhand, aims to promote self-employment through solar energy generation. This initiative targets unemployed youth, farmers, and returning migrant workers, providing them with opportunities to establish solar power plants ranging from 20 kW to 200 kW on their land.

Income Generation Potential:

The income generation depends on the capacity of the installed solar plant. For instance:

- **25 kW Plant:** Generates approximately 38,000 units annually. At the rate of ₹4.64 per unit, the annual income is around ₹1,76,320. After accounting for maintenance costs and loan repayments, the net monthly income is approximately ₹12,610.
- **100 kW Plant:** Produces about 152,000 units per year, leading to an annual income of ₹7,05,280. Post-expenses, the monthly income is estimated at ₹52,523.
- **200 kW Plant:** Yields approximately 304,000 units annually, with an annual income of ₹14,10,560. After deductions, the monthly income stands at ₹1,05,047.

The government facilitates this by offering loans covering up to 70% of the installation cost at an 8% interest rate, with repayment terms extending up to 15 years. Additionally, subsidies are provided, varying by district, to further ease the financial burden on beneficiaries. Beyond electricity generation, the scheme encourages integrated farming practices, such as cultivating shade-tolerant crops and beekeeping, on the land beneath the solar panels, thereby diversifying income sources. In summary, the MSSY not only contributes to sustainable energy production but also offers a viable avenue for income generation, thereby fostering economic development in rural Uttarakhand.

Challenges and Recommendations

Challenges: The Mukhyamantri Saur Swarojgar Yojana faces challenges such as limited awareness among rural populations, difficulties in securing land and loans, delayed approvals, and inadequate technical expertise. Additionally, high initial costs and maintenance issues hinder widespread adoption, affecting the scheme's overall reach and long-term sustainability in remote areas.

- **Lack of Awareness-**

Many rural residents, especially in remote hilly regions, remain unaware of the scheme and its benefits. Inadequate dissemination of information limits participation.

- **Financial Barriers-**

Although the scheme provides subsidies, the initial investment required for setting up solar units remains high for small-scale entrepreneurs. Access to affordable financing is still limited.

- **Technical Expertise-**

Beneficiaries often lack the technical know-how for installation, maintenance, and operation of solar units. Training facilities are not uniformly available across districts.

- **Delays in Implementation-**

Bureaucratic procedures and delays in subsidy disbursement discourage applicants. In some cases, there are long waiting periods between application and project approval.

- **Infrastructure Constraints-**

Limited road connectivity and logistics issues in hill areas make transportation of solar equipment challenging and costly.

Recommendations: To enhance the effectiveness of the scheme, awareness campaigns should be intensified, loan procedures simplified, and technical training provided to beneficiaries. Strengthening local support systems, ensuring timely approvals, and promoting integrated land use can improve participation, sustainability, and income generation under the Mukhyamantri Saur Swarojgar Yojana.

Enhanced Awareness Campaigns-

The government should conduct focused awareness drives using local media, panchayats, and NGOs to educate people about the scheme's benefits and application process.

- **Simplified Application Process-**

Streamlining documentation and offering online and offline support centers can ease access to the scheme, especially for less literate applicants.

- **Access to Microfinance-**

Partnerships with banks and microfinance institutions can help beneficiaries secure low-interest loans to cover upfront costs beyond the subsidy.

- **Skill Development Programs-**

Regular training workshops on solar technology, entrepreneurship and skill development that can empower beneficiaries to manage and maintain their installations efficiently.

- **Improved Coordination-**

Strengthening coordination between UREDA, local authorities, and implementing agencies can reduce delays and ensure faster project execution.

- **Localized Logistics Support-**

Establishing local service centers for equipment delivery and maintenance can overcome infrastructure challenges in hilly terrain.

Conclusion

The Mukhyamantri Saur Swarojgar Yojana, introduced by the Government of Uttarakhand, is a progressive initiative aimed at fostering self-employment through solar energy. From 2019 to 2024, it has steadily empowered rural populations by creating sustainable income sources, promoting clean energy, and reducing reliance on conventional employment. The rise in beneficiaries, increasing solar capacity, and growing investments reflect its

successful adoption. The scheme has contributed significantly to both employment generation and environmental sustainability, especially in remote regions. However, it faces several challenges, including low awareness, financial hurdles, and logistical difficulties in hilly areas. Bureaucratic delays and insufficient technical support have also slowed implementation in certain zones. To maximize its impact, efforts must focus on enhancing awareness, easing financial access, developing skills, and improving inter-agency coordination. Strengthening infrastructure and technical capacity can ensure broader outreach. Overall, with robust support and monitoring, the scheme can drive rural development while advancing India's renewable energy ambitions.

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CORPORATE SOCIAL RESPONSIBILITY IN PUBLIC SECTOR UNDERTAKINGS IN INDIA: A CASE STUDY OF IOCL

Roshni

Research Scholar

K.R. (PG) college, Mathura, Dr. Bhimrao Ambedkar University, Agra, Uttar Pradesh, India

Email: vermaroshni011@gmail.com

Parveen Kumar

Assistant Professor

Gyan Mahavidyalaya, Aligarh, Raja Mahendra Pratap Singh State University, Aligarh, Uttar Pradesh, India

Email: parveenku04@gmail.com

Abstract

Indian Oil Corporation Limited, as a major public sector undertaking and a leading energy provider in India, plays a pivotal role in implementing CSR activities. Guided by the vision of sustainable and ethical operations, IOCL aligns its CSR practices with the provisions of the Companies Act, 2013. The company's contributions span environmental sustainability, community welfare, and technological innovation for social betterment. This study aims to examine the evolution and practice of Corporate Social Responsibility (CSR) in India, with a focused analysis of Indian Oil Corporation Limited (IOCL) over a six-year period from 2018 to 2023. The objectives are twofold: to understand the broader framework of CSR in the Indian context and to critically assess IOCL's CSR strategies, financial allocations, and utilization trends over the specified period. The research is based entirely on secondary data sourced from IOCL's annual reports and CSR disclosures. The study concludes that IOCL demonstrates a clear commitment to CSR in both vision and financial allocations, irregularities in fund deployment indicate room for improvement in planning and execution. These findings underscore the need for enhanced monitoring mechanisms to ensure timely and impactful use of CSR funds. As CSR continues to evolve into a cornerstone of corporate governance, efficient implementation is crucial to fulfilling both legislative mandates and social responsibilities.

Keywords: CSR, Social Performance, Financial Performance, Sustainability, Allocation

Introduction

Corporate Social Responsibility (CSR) is the continuing commitment by business to behave ethically and contributing to nation's economic development while improving the quality of life of the personnel and their families and also of the local communities and society at large. Globally, the business scenario has been undergoing an unprecedented transformation leading to evolution of innovative strategies. Organisations are increasingly realizing that their operations have a large effect not only on stakeholders like employees, shareholders, suppliers, customers but also on members of public sphere, communities and environment. It is considered to be the moral responsibility for an organisation to take care of the environments and people whose lives are being impinged by its operations.

Every business enterprise should bear responsibility and accountability for the social and environmental impact it has in its surroundings. This is how the concept of Corporate Social Responsibility (CSR) has emerged, paving a way for businesses to return to the society from the profits it earns. Such initiatives on the part of a enterprise to improve livelihood of people and preserving environment at surroundings of its operations also go a long way in gaining approval from local communities. Engagement of local communities is crucial for long-term sustainability for any organisation. This also guarantees augmentation of triple bottom line of People-Planet-Profit, portraying the inclusive growth for an organisation. CSR is an approach assisting all organisations to become good corporate citizens by conserving the environment and improving lives of all stakeholders.

Review of Literature

Study focused on assessing the *social impact* of CSR spending by major PSUs, highlighting the importance of evaluating actual outcomes rather than mere financial compliance. Using a **four-quadrant approach**, the study categorized PSUs based on levels of CSR spending and social impact, providing insights into the effectiveness of resource utilization. This research marks a shift from expenditure-focused evaluation to a more meaningful, outcome-based assessment of CSR in India's public sector (Anupam De, 2024). The study examines the level of CSR initiatives by Indian companies, particularly in the oil and gas sector, and their impact on financial and stock market performance. Using secondary data from CMIE's PROWESS database, it evaluates CSR performance based on company ratings, budget allocation, and focus areas like healthcare, education, environment, rural

development, and community welfare (A.K. Kaul, 2022). The study highlights that Corporate Social Responsibility (CSR) is increasingly being used by Oil & Gas CPSEs to support skill development, addressing youth unemployment and aligning with the Skill India Mission. It finds that companies prefer investing in education, vocational training, and women empowerment as part of their CSR, viewing it as a sustainable and mutually beneficial strategy (Behera, B. & Gaur, 2021). The study explores whether multinational companies (MNCs) in conflict zones can use Corporate Social Responsibility (CSR) to benefit both their businesses and the local communities. It focuses on the CSR efforts of Guwahati Refinery, a unit of Indian Oil Corporation Limited (IOCL), in North East India—a region marked by conflict. IOCL was chosen due to its long-standing industrial presence in the area. The findings indicate that well-planned CSR investments, guided by community needs, can contribute significantly to both business success and local development in such regions (Kalita, K., & Bhattacharjee, B. J., 2019). The concept of CSR has been widely used and applied by both researchers and corporate managers starting from the seminal four-part definition developed by Carroll (1979, 2016). Companies in developed countries are mostly influenced by shareholders, regulators, investors and environmental activists in terms of sustainability disclosure (Jamali and Karam, 2016). From the aspect of human rights, firms in developing countries tend to have negative attitudes toward establishing corporate codes of conduct as a management instrument to promote basic rights, especially when legal standards are not sufficient (Hahn, 2011). Green innovation is one of these new paradigms, which recognizes that innovative ideas can lessen the influence of a company's activities on the environment (Chen, 2008).

Objectives of the Study

- To examine the corporate social responsibility in India.
- To analyse the corporate social responsibility practices in Indian Oil Corporation Limited over a period of six years.

Research Methodology

- **Scope of the study:** The current study solely examined the current state with corporate social responsibility and focused on one firm, Indian Oil Corporation Limited in India and analysing IOCL's corporate social responsibility practices.
- **Sample of company:** Indian Oil Corporation limit considered as the sample for the study. The sample was selected using the convenience sampling method.

- **Source of Data:** The present study mainly relies on secondary data, which was collected from Indian oil corporation limited annual reports CSR reports.
- **Period of the study:** The data consist of Indian Oil Corporation limited six consecutive years 2018 to 2023 annual financial Statements.
- **Tools used for analysis:** the study used the tables for data analysing.

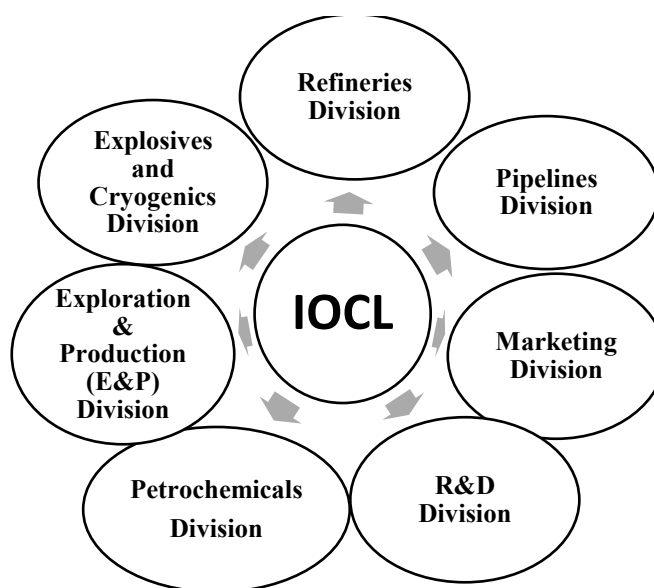
Background of Indian Oil Corporation Limited

The theme of “*Pahle India Phir Oil*” is truly depicted through Indian Oil Corporate Social Responsibility (CSR). Indian Oil Corporation Limited (IOCL or IOC), trading as Indian Oil, is an Indian multinational oil and gas company under the ownership of the Government of India and administrative control of the Ministry of Petroleum and Natural Gas. It is a public sector undertaking which is registered in Mumbai but headquartered in New Delhi. It is the largest government-owned oil producer] in the country both in terms of capacity and revenue. It has consolidated refining capacity of 80.55MMTPA.

In May 2018, IOCL became India's most profitable government corporation for the second consecutive year, with a record profit of Rs. 21,346 crores in 2017–18. In February 2020, the company signed a deal with the Russian oil company Rosneft to buy 140,000 barrels per day of crude in year 2020. By 1 April 2020, Indian Oil was in absolute readiness to launch BS-VI (Bharat Stage VI) fuels in all its retail outlets in Telangana and adopt world-class emission norms. In January 2021, sales were registered at an all-time high of 410,000 barrels of oil per day till 26 January 2021. Delek, Qatar Energy, and Saudi Aramco are its largest business partners, with Abu Dhabi National Oil Company and National Iranian Oil Company signing deals to deliver high production output by the end of 2020. In March 2022, Apollo Hospitals replaced Indian Oil Corporation in Nifty 50 benchmark index.

Operations

Business divisions, there are seven major business divisions in the organisation:



Source: Author Composition

Products and services

Indian Oil accounts for nearly half of India's petroleum products market share, 35% national refining capacity (together with its subsidiary Chennai Petroleum Corporation Ltd. or CPCL), and 71% downstream sector pipelines through capacity. The Indian Oil Group owns and operates 11 of India's 23 refineries with a combined refining capacity of 80.7 million tonnes per year. Indian Oil's cross-country pipeline network, for the transport of crude oil to refineries and finished products to high-demand centres, spans over 13,000 km. The company has a throughput capacity of 80.49 million tonnes per year for crude oil and petroleum products and 9.5 million cubic metres per day at standard conditions for gas. On 19 November 2017, IOCL, in collaboration with Ola, launched India's first electric charging station at one of its petrol-diesel stations in Nagpur. Indian governments' National Electric Mobility Mission Plan launched in 2013 aims at gradually ensuring a vehicle population of 6 to 8 million electric and hybrid vehicles in India by 2020.

Servo is the lubricants brand under which IOCL operates its lubricant business. Servo is the largest selling lubricant brand in both automotive and industrial segments.

It is said that deals with Royal Dutch Shell and Chevron Corporation have been signed for exclusive business plans for supply in Asia with the Indian Oil Company, which are worth 20 billion dollars per year.

Indian Oil's Sustainability & CSR Policy

Vision

Indian Oil's Sustainability & Corporate Social Responsibility (S&CSR) vision is to operate its activities in providing energy solutions to its customers in a manner that is efficient, safe & ethical, which optimizes the impact on environment and enhances quality of life of the community, while ensuring sustainable growth of business and the nation.

Mission

In line with the above vision, Indian Oil's S&CSR mission is to:

- Meet stakeholders' aspirations for value creation and grow along with the society.
- Optimize resources and mitigate environmental impacts by incorporating environmental and social considerations in business decisions.
- Earn stakeholders' goodwill and build a reputation as a responsible corporate citizen.
- Conduct business with ethics and transparency & follow responsible business practices.
- Adopt & harness technological/social innovations for sustainability & achieving Sustainable Development Goals.

Scope

Indian Oil's S&CSR Policy will be operative within the overall ambit of CSR Provisions of the Companies Act 2013, Companies (CSR Policy) Rules 2014, Schedule-VII to the Act DPE's guidelines on CSR & Sustainability and clarifications/amendments thereof from time to time.

Data Analysis and Interpretation

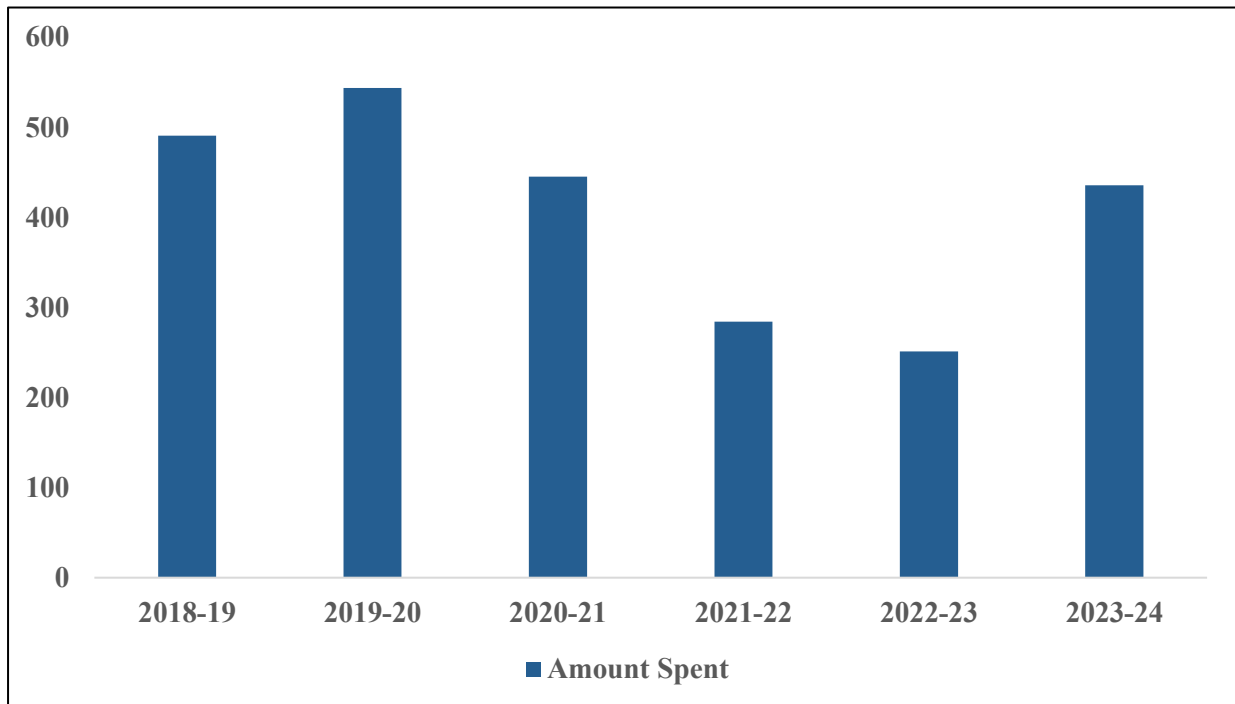
**Table-1: Average Net Profit and Amount Spent CSR by IOCL during
(2018-19 to 2023-24) (Rs. In crore)**

S.No.	Particular	F.Y. 2018-19	F.Y. 2019-20	F.Y. 2020-21	F.Y. 2021-22	F.Y. 2022-23	F.Y. 2023-24	TOTAL
1	Three Year Average Net Profit	24,529.81	27,168.78	17,100	16,157.05	17,553.43	21,444.78	1,23,953.85
2	Mandatory Allocation 2%	490.6	543.38	342	323.14	351.07	428.9	2479.09

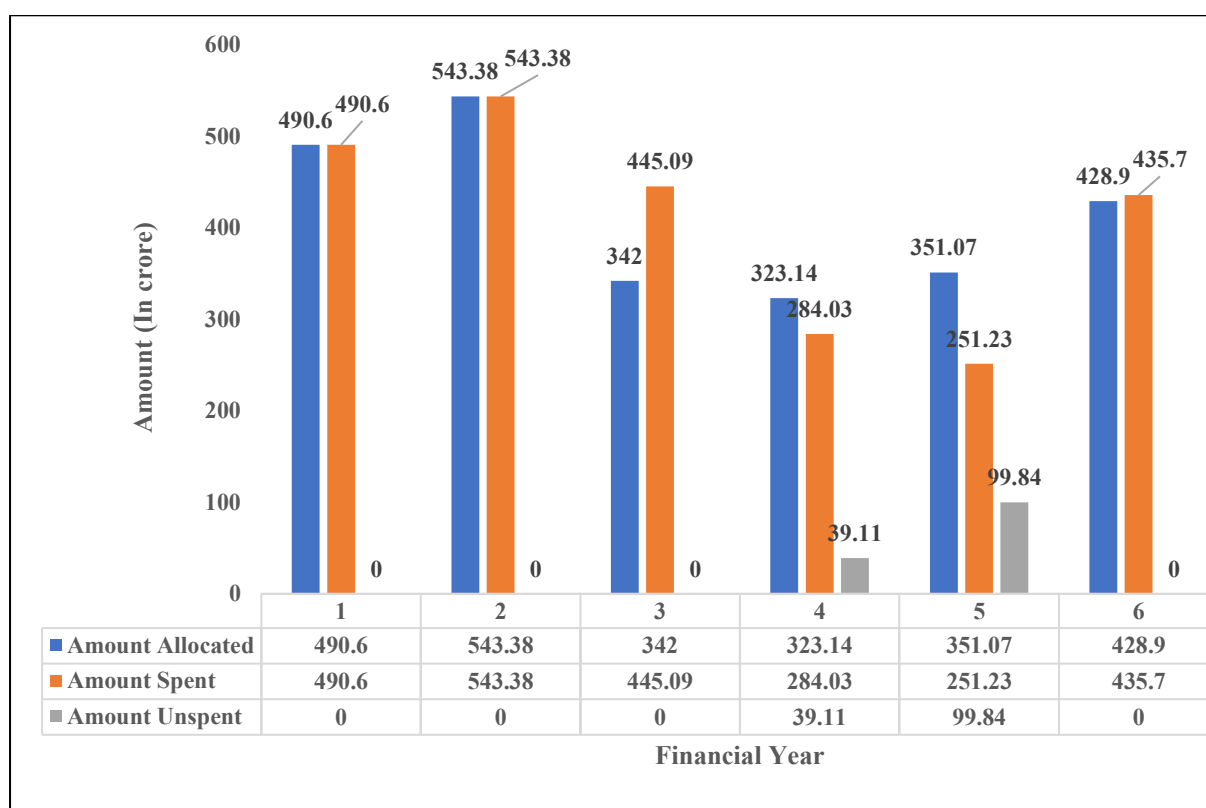
3	Amount Allocated	490.6	543.38	342	323.14	351.07	428.9	2479.09
4	Amount Spent	490.6	543.38	445.09	284.03	251.23	435.7	2450.03
5	Amount Unspent	Nil	Nil	Nil	39.11	99.84	Nil	138.95
6	Utilization Rate	10000%	10000%	13014%	8790%	7156%	10159%	9883%
7	Utilization	Equal	Equal	Excess	Less	Less	Excess	Less

Source: Annual Report of IOCL (2018-19 To 2023-24)

Fig 1: CSR Amount Spent by IOCL (in crores)



Source: Author Composition

Fig 2: CSR Allocated and Spent Along with Amount Unspent During (2018-19-2023-24)

Source: Author Compostion

Findings

The data reflects a six-year overview of financial allocations and expenditures linked to the mandatory 2% Corporate Social Responsibility (CSR) rule under Section 135 of the Companies Act. The **three-year average net profit** shows fluctuations, peaking at Rs. 27,168.78 crore in FY 2019–20 and dipping to Rs. 16,157.05 crore in FY 2021–22, before recovering to Rs. 21,444.78 crore in FY 2023–24. Consequently, the **mandatory 2% CSR allocation**, calculated on these profits, also varied accordingly—from Rs. 490.6 crore in FY 2018–19 to Rs. 428.9 crore in FY 2023–24. Notably, the amount **allocated** each year matches exactly with the mandatory requirement, indicating compliance in allocation.

However, deviations emerge in **actual spending** trends. In the initial two years (FY 2018–19 and 2019–20), the **amount spent** perfectly aligns with the amount allocated, reflecting full compliance. In FY 2020–21, the expenditure exceeded the allocated amount (Rs. 445.09 crore spent vs Rs. 342 crore allocated), indicating overutilization. In contrast, FY 2021–22 and FY 2022–23 saw **underutilization**, with actual spending falling short by Rs. 39.11 crore

and Rs. 99.84 crore respectively, leaving **unspent balances** for the first time in the observed period. By FY 2023–24, the trend reversed with a slight **overspending** of Rs. 6.8 crore over the allocation, suggesting corrective action.

The **utilization rate**, though unusually expressed as percentages in thousands (likely due to formatting error or scaling), still helps infer trends. Years with exact or excess utilization show high values, while underutilized years (FY 2021–22 and 2022–23) reflect relatively lower utilization. The overall **cumulative unspent amount** across six years totals Rs. 138.95 crore, indicating some lapses in full fund deployment, though not consistently.

In summary, the organization has consistently met its mandatory CSR allocation but has demonstrated **variability in fund utilization**, with **excess spending** in some years and **shortfalls in others**. This inconsistency signals a need for better planning and monitoring mechanisms to ensure stable and impactful CSR implementation across fiscal cycles.

Conclusion

Every business enterprise should bear responsibility and accountability for the social and environmental impact it has in its surroundings. This is how the concept of Corporate Social Responsibility (CSR) has emerged, paving a way for businesses to return to the society from the profits it earns. Such initiatives on the part of an enterprise to improve livelihood of people and preserving environment at surroundings of its operations also go a long way in gaining approval from local communities. The findings of the study reveal that IOCL has maintained consistent compliance in allocating the mandated 2% of its average net profits for CSR, the actual spending has varied across the years. In certain fiscal years, such as 2020–21 and 2023–24, IOCL exceeded its CSR spending requirements, reflecting proactive engagement in social initiatives. However, the underutilization in FY 2021–22 and 2022–23, with noticeable unspent amounts, signals challenges in timely and effective fund deployment. These variations highlight the dynamic nature of CSR execution and the influence of internal and external factors on CSR spending trends.

Overall, the study concludes that Indian Oil Corporation Limited has demonstrated a strong commitment to CSR both in vision and practice, as evident from its policy framework and allocation consistency. However, the fluctuating utilization rates point to the need for more robust planning, implementation, and monitoring systems to ensure that CSR resources are not

only allocated but also optimally utilized for maximum community impact. This becomes even more essential as CSR continues to evolve into a strategic component of corporate governance and sustainability in India.

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ECOTOURISM AND RURAL HERITAGE AS CATALYSTS FOR SUSTAINABLE DEVELOPMENT IN RAJASTHAN: A CASE STUDY OF THE SHEKHAWATI REGION

Dr. Ravindra Goswami

Seth G.B. Podar College, Nawalgarh (Raj)

Email: goswami.raaj23@gmail.com

Abstract

The Shekhawati region of Rajasthan, acclaimed for its vivid frescoes and architectural marvels, exemplifies the rich cultural heritage embedded in India's rural landscapes. This paper investigates the dynamic interplay between ecotourism and rural heritage in fostering sustainable development. Focusing on Shekhawati as a case study, the research evaluates how heritage conservation, local community engagement, and responsible tourism practices can contribute to environmental, economic, and socio-cultural sustainability. Methodologies include field surveys, literature reviews, and policy analysis. Ecotourism and rural heritage represent synergistic tools for promoting sustainable development, particularly in culturally rich and environmentally sensitive areas such as Rajasthan's Shekhawati region. This research paper examines how ecotourism, when integrated with the conservation of rural heritage, can function as a catalyst for sustainable economic growth, community empowerment, and environmental stewardship. The Shekhawati region, famed for its intricately painted havelis, traditional architecture, and agrarian lifestyle, offers a unique landscape where heritage preservation and ecological tourism intersect (Bhatia, 2018). The study adopts a qualitative case study methodology, drawing on field surveys, interviews with local stakeholders, and secondary data analysis to explore the socio-economic and environmental impacts of ecotourism initiatives. The findings indicate that rural heritage tourism fosters local employment, revives artisanal crafts, and encourages infrastructural development without compromising ecological integrity (Singh & Tiwari, 2020). Moreover, community-based tourism models have demonstrated potential in enhancing cultural pride and environmental awareness among residents (Chopra, 2017). However, challenges such as inadequate policy frameworks, lack of training, and commercialization threaten the authenticity and sustainability

building as key drivers for balancing conservation and development (Mehta, 2021). The case of Shekhawati exemplifies how rural heritage and ecotourism, when harmoniously integrated, can contribute significantly to Rajasthan's broader sustainable development goals.

Keywords: Ecotourism, Rural Heritage, Sustainable Development, Shekhawati, Rajasthan, Community-Based Tourism, Heritage Conservation

Introduction

Sustainable development has emerged as a critical global concern, requiring innovative and inclusive strategies. In India, where rural areas preserve centuries-old traditions and cultural identities, ecotourism provides a pathway to achieving sustainable growth. The Shekhawati region, often described as an 'open-air art gallery', stands as a potent example where rural heritage and ecotourism intersect. This paper explores how these two forces can act as synergistic catalysts for development in Shekhawati and, by extension, similar regions across India. In an era marked by increasing environmental degradation, cultural homogenization, and rural decline, the search for sustainable models of development has gained paramount importance. One such promising avenue is ecotourism, which not only emphasizes environmental conservation but also encourages cultural preservation and community participation (Honey, 2008). Coupled with the preservation of rural heritage, ecotourism has emerged as a dynamic force in achieving the broader objectives of sustainable development. In this context, the Indian state of Rajasthan—renowned for its rich cultural fabric, architectural marvels, and vibrant traditions—offers a fertile ground for exploring this synergy. Among its various regions, Shekhawati stands out as a living repository of rural art, history, and ecological potential, making it an ideal case for examining how ecotourism and rural heritage can jointly serve as catalysts for sustainable development. The concept of ecotourism, as defined by The International Ecotourism Society (TIES, 2015), involves “responsible travel to natural areas that conserves the environment, sustains the well-being of local people, and involves interpretation and education.” Unlike mass tourism, which often leads to environmental and cultural degradation, ecotourism seeks to foster a balance between tourism and sustainability. When integrated with rural heritage—the tangible and intangible assets of countryside communities such as traditional crafts, architecture, folklore, and agrarian practices—it becomes a powerful tool for regional development (UNWTO, 2018). Rural heritage tourism not only preserves unique local identities but also creates livelihoods, empowers communities, and stimulates local economies (Chopra, 2017).

The Shekhawati region of Rajasthan, comprising districts like Jhunjhunu, Sikar, and Churu, is renowned for its elaborate frescoed havelis, temples, cenotaphs, and stepwells that date back to the 18th and 19th centuries. Once a prosperous center of trade and culture, the region has seen economic stagnation and outmigration in recent decades (Kumar, 2019). However, its unique blend of artistic legacy and rural character provides immense potential for ecotourism initiatives aimed at revitalizing the area. Ecotourism in Shekhawati offers a dual opportunity: preserving cultural and architectural heritage while promoting sustainable practices such as organic farming, water conservation, and community-based hospitality services (Mehta, 2021). Recent studies have highlighted the positive impact of ecotourism and rural heritage preservation on sustainable development in various global contexts (Briedenhann & Wickens, 2004; Das & Chatterjee, 2015). In Rajasthan, the integration of local knowledge systems, traditional resource management, and cultural storytelling within tourism frameworks has shown encouraging results in areas like Bishnoi and Ranakpur. These models underscore the importance of involving local communities in decision-making processes, ensuring fair distribution of tourism revenue, and preserving the authenticity of the cultural landscape (Singh & Tiwari, 2020).

However, Shekhawati's potential remains largely untapped due to challenges such as inadequate infrastructure, policy gaps, lack of awareness among local communities, and the commercialization of heritage sites without proper conservation ethics. There is a pressing need for a participatory and region-specific approach to tourism planning that aligns with the Sustainable Development Goals (SDGs), particularly Goal 11 (Sustainable Cities and Communities), Goal 8 (Decent Work and Economic Growth), and Goal 12 (Responsible Consumption and Production). This paper aims to investigate the role of ecotourism and rural heritage in promoting sustainable development in the Shekhawati region through a case study approach. It seeks to analyze current practices, identify key challenges and opportunities, and offer policy recommendations for the integration of cultural heritage and environmental tourism into regional development planning. By focusing on the Shekhawati region, this research not only contributes to the literature on sustainable rural tourism but also provides insights into the replication of such models in other culturally and ecologically sensitive regions of India and beyond.

Conceptual Framework

The conceptual framework for this research is based on the interlinkages between ecotourism, rural heritage, and sustainable development, with the Shekhawati region of Rajasthan serving as a contextual case study. At its core, the framework integrates three major components: ecological sustainability, cultural preservation, and community-based development. Ecotourism is positioned not merely as a travel activity but as a sustainable development strategy that promotes environmental stewardship, low-impact tourism, and community empowerment (Honey, 2008). It emphasizes conservation-oriented travel that educates tourists and benefits host communities economically and socially. Rural heritage in Shekhawati—comprising painted havelis, traditional crafts, oral histories, and agricultural lifestyles—represents the tangible and intangible cultural capital of the region. Preserving this heritage supports identity formation and intergenerational knowledge transfer, both of which are critical for sustainable cultural continuity (UNESCO, 2016).

The framework proposes that when ecotourism initiatives are embedded within rural heritage conservation efforts, a virtuous cycle can be created: tourism generates income for heritage preservation; preserved heritage attracts responsible tourism; and both foster local employment, environmental care, and pride of place. A community-centered approach is central to this model. Local participation in decision-making, equitable sharing of tourism benefits, and capacity-building are vital for ensuring that development is inclusive and sustainable (Singh & Tiwari, 2020). Thus, the framework bridges tourism studies, heritage management, and sustainable development theory, offering a holistic lens through which to examine the Shekhawati region's potential as a model for integrated rural sustainability.

Sustainable Development Defined by the Brundtland Report (1987) as development that meets the needs of the present without compromising future generations, sustainability encompasses environmental integrity, economic viability, and social equity. Sustainable development in the Shekhawati region of Rajasthan involves a balanced integration of environmental preservation, cultural heritage conservation, and socio-economic growth. Known for its intricately frescoed havelis, stepwells, and temples, Shekhawati possesses immense potential to become a model for rural sustainability. Initiatives promoting eco-friendly tourism—such as homestays in restored havelis, guided heritage walks, and organic farm visits—have not only created local employment but also revived dying arts and crafts like fresco painting and terracotta work. For example, the town of Mandawa has seen a resurgence

in tourism through conservation-based hospitality ventures that involve local artisans and youth. Similarly, in Nawalgarh, community-run museums and eco-tourism centers have emerged, preserving both architectural and agrarian heritage. By fostering community participation, encouraging sustainable water management in arid zones, and promoting low-carbon tourism models, Shekhawati exemplifies how sustainable development can be achieved by leveraging cultural and ecological assets. However, scaling such models requires proper infrastructure, policy support, and capacity-building programs.

Ecotourism Ecotourism emphasizes responsible travel to natural and cultural sites, conserving the environment and improving the well-being of local people. Unlike mass tourism, it promotes low-impact and educational travel experiences. Ecotourism in the Shekhawati region offers a sustainable and culturally immersive alternative to conventional tourism by highlighting the area's unique blend of art, architecture, and rural lifestyle. Unlike mass tourism, ecotourism in Shekhawati emphasizes responsible travel practices, heritage conservation, and community involvement. Tourists visiting Mandawa, Nawalgarh, and Fatehpur are increasingly opting for heritage homestays that use traditional building materials and sustainable energy solutions. For instance, some restored havelis in Mandawa now function as eco-lodges, employing local artisans and sourcing organic food from nearby farms. Initiatives like heritage walks, camel safaris, and fresco painting workshops conducted by local youth serve not only as tourist attractions but also as means of preserving and transmitting traditional knowledge. Moreover, farm-based tourism in villages around Churu promotes organic farming and educates visitors about water conservation practices in the semi-arid zone. These examples illustrate how ecotourism in Shekhawati can support environmental stewardship, cultural revitalization, and economic development—ensuring that tourism growth aligns with the principles of sustainability.

Rural Heritage Rural heritage includes tangible assets (architecture, artifacts) and intangible elements (folk traditions, rituals, dialects) that define rural identity and continuity. Preserving such heritage ensures cultural resilience and pride. Rural heritage in the Shekhawati region is a vibrant reflection of its historical, cultural, and artistic legacy, deeply rooted in the everyday life of its communities. Known as the "Open-Air Art Gallery of Rajasthan," Shekhawati boasts a rich rural heritage that includes ornately frescoed havelis, baoris (stepwells), chhatris (cenotaphs), and temples, many of which date back to the 18th and 19th centuries. Towns like Nawalgarh, Dundlod, and Fatehpur are filled with heritage buildings adorned with mythological and colonial-themed murals, showcasing a fusion of Rajput, Mughal, and

European influences. Beyond architecture, Shekhawati's rural traditions are preserved through folk music, puppet theatre, traditional crafts like tie-and-dye (bandhani), pottery, and agricultural practices that reflect deep ecological knowledge. For example, the revival of wall painting in heritage schools in Nawalgarh engages children in cultural education, while craft fairs and rural festivals keep oral traditions and folk arts alive. These elements of rural heritage not only define the identity of Shekhawati but also offer opportunities for cultural tourism, community pride, and sustainable rural development when properly preserved and promoted.

Shekhawati Region: Cultural Significance and Developmental Challenges

The Shekhawati region, encompassing the districts of Jhunjhunu, Sikar, and Churu in northeastern Rajasthan, holds immense cultural significance as a repository of India's vernacular art, architecture, and oral traditions. Celebrated for its elaborately frescoed havelis, temples, stepwells, and cenotaphs, Shekhawati stands as a testament to the opulence and artistic patronage of 18th and 19th-century Marwari merchants. The murals vividly depict scenes from mythology, local legends, and colonial encounters, offering rich insights into the socio-cultural fabric of the time. Additionally, Shekhawati's folk music, festivals, crafts, and agrarian heritage further enrich its cultural landscape. Despite this wealth, the region faces pressing developmental challenges. Many heritage structures are in a state of neglect due to urban migration, lack of maintenance, and limited awareness of conservation practices. Economic stagnation, declining traditional livelihoods, and poor infrastructure—including roads, sanitation, and digital connectivity—have hindered tourism and local development. Furthermore, unregulated commercialization threatens the authenticity of heritage assets. While there is growing interest in cultural and eco-tourism, the absence of integrated policy frameworks, skilled workforce, and sustainable investment models remains a barrier. Addressing these challenges through community participation, heritage education, and public-private partnerships is essential to unlock Shekhawati's full potential as a center of cultural pride and sustainable development.

Geographic and Historical Overview Located in north-east Rajasthan, Shekhawati includes Jhunjhunu, Sikar, and Churu districts. Established in the 18th century, the region prospered as a trade hub, leading to the construction of elaborately decorated havelis by affluent merchants. The Shekhawati region is located in the northeastern part of Rajasthan, encompassing the districts of Jhunjhunu, Sikar, and Churu. Geographically, it forms part of the semi-arid zone of the state and lies in the transitional area between the Aravalli Hills and the Thar Desert.

Characterized by sandy plains, scattered dunes, and seasonal rivulets, the region experiences extreme climatic conditions—hot summers, cold winters, and low but erratic rainfall. Despite its arid environment, Shekhawati has historically supported agricultural and pastoral livelihoods through traditional water harvesting systems like baoris (stepwells) and kunds.

Historically, Shekhawati derives its name from Rao Shekha (1433–1488), a Rajput chieftain who established the Shekhawat dynasty, which ruled the region under the suzerainty of the Jaipur state. During the 18th and 19th centuries, Shekhawati flourished as a prosperous trade corridor connecting Delhi, Bikaner, and Gujarat. This economic boom was driven by Marwari merchants, who amassed wealth through trade and banking and invested heavily in building magnificent havelis, chhatris, and temples, adorned with intricate frescoes that narrate mythological tales, social customs, and colonial influences. As the merchant families migrated to metropolitan centers like Kolkata, Mumbai, and Delhi, the region's economic vitality declined, leaving behind an extraordinary but often neglected architectural and cultural heritage. Today, Shekhawati remains a region of immense historical and artistic importance, representing a unique blend of Rajput valor, Marwari enterprise, and folk traditions, and offering great potential for cultural tourism and sustainable rural development.

Architectural and Artistic Heritage Shekhawati's havelis, adorned with frescoes depicting mythology, colonial history, and daily life, reflect Indo-European styles. Chhatris (cenotaphs), temples, and wells further enrich its architectural canvas.

The Shekhawati region of Rajasthan is globally renowned for its unparalleled architectural and artistic legacy, earning it the title of the “Open-Air Art Gallery of India.” From the late 18th to early 20th centuries, wealthy Marwari merchant families constructed a vast array of opulent buildings that reflect a unique confluence of Rajputana grandeur, Mughal motifs, and European influences, resulting in a distinctive regional style of art and architecture.

Havelis (Mansions): The most iconic structures in Shekhawati are its fresco-adorned havelis, built by Marwari merchants who had prospered in trade across India and abroad. These havelis were not only residences but also symbols of wealth, status, and cultural expression. The architecture typically features:

Multi-courtyard layouts

Carved wooden doors and windows

Jharokhas (overhanging balconies)

Latticed screens (jali work)

The Murarka Haveli in Nawalgarh, Poddar Haveli in Nawalgarh and Goenka Havelis in Dundlod stand as exemplary specimens, richly decorated with frescoes, murals, mirror work, and stucco ornamentation.

Fresco Art and Murals: Shekhawati's murals are its most distinctive artistic contribution. Unlike other parts of Rajasthan, where painting was mainly confined to palaces and temples, in Shekhawati, murals covered the exteriors and interiors of homes, cenotaphs, wells, and even stables. These frescoes depict a wide range of themes:

Mythological stories (Ramayana, Mahabharata, Krishna Leela)

Folk tales and local legends

Everyday life scenes: weddings, processions, farming

British colonial influences: trains, telegraphs, and European attire

Western technology and modernity introduced during the colonial period
The murals use natural pigments and traditional techniques like *araish* (lime plaster polishing), showcasing the region's deep-rooted artisanal skills.

Temples and Chhatris: Temples in Shekhawati—like the Raghunath Temple in Jhunjhunu or Salasar Balaji in Churu—also display a fusion of sacred and aesthetic architecture. These temples often feature:

Shikharas (spires) with intricate carvings

Painted domes and ceilings

Narrative panels drawn from Hindu mythology

Chhatris (cenotaphs) or memorial pavilions, erected in honor of deceased family members, are architectural jewels with domed roofs, carved pillars, and elaborate frescoes, commonly found in the outskirts of villages like Bissau and Mukundgarh.

Stepwells (Baoris) and Wells: Traditional stepwells (baoris) and kunds provided essential water storage in the arid landscape and were often adorned with pillared pavilions, arches, and painted panels, reflecting the confluence of function and aesthetics. The Sethani ka Johra in Churu is a notable example of such water architecture with artistic embellishment.

Forts and Palaces: Shekhawati also houses a number of small forts and palaces built by local chieftains. The Dundlod Fort, Mandawa Castle, and Nawalgarh Fort blend Rajput military architecture with merchant opulence, often containing richly frescoed interiors, courtyards, and watchtowers.

Preservation and Challenges: Despite their magnificence, many of these heritage structures are in a state of decline due to:

Neglect and migration of original families

Lack of conservation awareness

Harsh climatic conditions

Unregulated modernization: Efforts by heritage trusts, NGOs, and tourism stakeholders are gradually bringing attention to the need for adaptive reuse, restoration, and eco-cultural tourism in the region.

The architectural and artistic heritage of Shekhawati is not merely a visual spectacle but a living archive of the region's history, culture, economic prosperity, and creative genius. It offers a unique opportunity to link cultural preservation with sustainable development, especially through heritage tourism, education, and community engagement.

Socioeconomic Conditions Despite its cultural wealth, Shekhawati faces challenges like outmigration, underdeveloped infrastructure, and limited employment opportunities. Harnessing heritage tourism offers a viable development strategy.

Ecotourism in Shekhawati: Potential and Practices

The Shekhawati region, known for its richly painted havelis, stepwells, and rural charm, holds immense potential for ecotourism—a form of responsible travel that emphasizes environmental sustainability, cultural preservation, and community involvement. Unlike mass tourism, ecotourism in Shekhawati can revitalize both its tangible and intangible heritage while promoting inclusive development and environmental awareness.

Potential of Ecotourism in Shekhawati

Cultural and Architectural Wealth: Shekhawati is often called the “Open-Air Art Gallery of India” due to its wealth of mural-covered havelis, cenotaphs, temples, and stepwells. Ecotourism can bring visibility to these lesser-known heritage sites while creating economic

incentives for their conservation. Towns like Mandawa, Nawalgarh, Dundlod, and Fatehpur are especially rich in architectural treasures that can attract heritage-conscious travelers.

Rural Lifestyle and Traditions: The region offers authentic rural experiences, including folk music, puppet shows, traditional crafts (like tie-dye, pottery, and wood carving), and agrarian practices. These provide a cultural depth that aligns well with ecotourism's emphasis on experiencing local life.

Environmental and Climatic Suitability: Although semi-arid, Shekhawati has a history of traditional water conservation practices such as baoris (stepwells) and johads (ponds). Promoting these as part of eco-tours highlights indigenous environmental knowledge and fosters awareness of sustainable living.

Proximity to Major Tourist Circuits: Situated near Delhi, Jaipur, and Bikaner, Shekhawati can be integrated into Golden Triangle and Desert Circuit itineraries, enhancing its tourism appeal without excessive carbon footprints through short, localized trips.

Current Practices and Emerging Models

Heritage Homestays and Eco-Lodges: Several families in towns like Mandawa and Nawalgarh have converted ancestral havelis into eco-conscious heritage homestays, offering visitors an immersive experience of local architecture, cuisine, and lifestyle. Properties like the Vivaana Culture Hotel (Churi Ajitgarh) and Apani Dhani Eco-Lodge (Nawalgarh) operate on principles of low-impact tourism—using solar energy, local materials, organic food, and rainwater harvesting.

Community-Based Tourism Initiatives: NGOs and heritage trusts are working with local communities to develop tourism cooperatives. For example, rural women's groups in Sikar and Jhunjhunu have started guided village tours, folk performances, and handicraft workshops, generating income while preserving tradition.

Eco-Walks and Heritage Trails: Local youth are trained as heritage guides, leading walking tours of frescoed towns, storytelling sessions, and visits to old baoris and temples. These initiatives not only educate visitors but also instill pride and responsibility in the younger generation.

Agro and Farm Tourism: In areas around Churu and Laxmangarh, local farms offer eco-tourism experiences, including organic farming demonstrations, camel cart rides, milking

cows, and cooking traditional Rajasthani food. These activities blend environmental education with cultural participation.

Sustainable Craft Promotion: Reviving endangered crafts through tourism is another successful practice. Blue pottery, terracotta, phad painting, and embroidery are promoted via local exhibitions and tourist workshops, providing artisans with visibility and livelihood.

Case Study Highlights

Morarka Foundation Initiatives This NGO has restored havelis, trained guides, promoted organic farming, and supported women-led enterprises. It demonstrates how tourism and heritage management can coexist. The Morarka Foundation, based in Nawalgarh in the Shekhawati region, has been a pioneering force in promoting sustainable rural development through a combination of heritage conservation, organic farming, and ecotourism initiatives. The Foundation has played a key role in restoring historic havelis, such as the Morarka Haveli Museum, and repurposing them into cultural and educational spaces that attract both domestic and international visitors. It actively supports organic agriculture by training farmers in sustainable practices and facilitating market linkages for organic produce. Through its ecotourism model, the Foundation promotes heritage walks, cultural workshops, craft demonstrations, and rural homestays, offering tourists an authentic Shekhawati experience while creating livelihood opportunities for the local population. Moreover, it emphasizes community involvement, women's empowerment, and environmental awareness, making it a leading example of how grassroots initiatives can effectively link conservation with economic development in a heritage-rich rural setting.

Heritage Walks in Mandawa Organized walking tours educate tourists while supporting local guides and craftspeople. These initiatives have enhanced the economic profile of the area without altering its cultural fabric. Heritage walks in Mandawa, a historic town in the Shekhawati region, offer an immersive journey through the architectural and cultural splendor of Rajasthan's merchant era. These guided walks take visitors through narrow lanes lined with frescoed havelis, ornate temples, chhatris, and ancient wells, showcasing the town's rich artistic legacy. Notable stops often include the Goenka Haveli, Saraswati Vahini frescoes, and the Mandawa Fort, each narrating stories from mythology, colonial encounters, and everyday life depicted in intricate wall paintings. Conducted by local historians or trained youth, these walks provide insights into Marwari merchant history, architectural techniques, and the socio-economic transformation of the region. Many heritage walks also incorporate local craft

demonstrations, folk music performances, and visits to traditional markets, offering tourists a holistic understanding of Mandawa's living heritage. These walks not only enhance cultural appreciation but also promote sustainable tourism and community engagement, helping preserve the town's historic identity while supporting the local economy.

Eco-Stays in Nawalgarh Eco-conscious accommodations with minimal environmental footprints offer authentic rural experiences. These attract international tourists and promote cultural exchange. Eco-stays in Nawalgarh, a culturally rich town in the Shekhawati region, offer travelers a unique blend of heritage hospitality and sustainable living. These accommodations, often restored traditional havelis or rural homesteads, are designed to minimize environmental impact while immersing guests in local culture. Properties like Apani Dhani Eco-Lodge exemplify this model, utilizing solar energy, organic farming, rainwater harvesting, and eco-friendly construction materials such as mud, lime, and local wood. Guests can enjoy traditional Rajasthani meals made from locally sourced ingredients, participate in craft workshops, and engage with the local farming community, promoting a meaningful and educational travel experience. These eco-stays emphasize low-impact tourism, cultural exchange, and community involvement, ensuring that tourism contributes directly to local livelihoods and heritage conservation. By combining comfort with consciousness, eco-stays in Nawalgarh stand as exemplary models of how responsible tourism can foster sustainable development in rural heritage settings.

Heritage Awareness and Conservation Walk in Nawalgarh: The Heritage Awareness and Conservation Walk initiative led by Seth G. B. Podar College and the Poddar Museum in Nawalgarh represents a significant community-driven effort to promote cultural education and heritage preservation among students and locals. Through this program, regular "conservation walks" are organized, guiding participants through the town's iconic frescoed havelis, temples, baoris, and marketplaces, while highlighting the historical, architectural, and artistic value of these structures. Students from the college act as heritage ambassadors, sharing researched narratives about the sites, thereby fostering youth engagement in heritage stewardship. The initiative also involves interactive sessions, clean-up drives, and art restoration awareness, encouraging locals to take pride in their heritage and participate in its upkeep. The Poddar Museum, housed in a beautifully preserved haveli, complements these walks by showcasing Shekhawati's rich artistic and educational legacy, further reinforcing the importance of conservation. By linking academic learning with practical heritage experiences, this initiative

effectively nurtures a culture of heritage appreciation, community participation, and sustainable tourism in Nawalgarh.

Conclusion The Shekhawati region stands as a testament to India's rich rural heritage and untapped ecotourism potential. By embracing sustainable tourism frameworks, empowering local communities, and preserving cultural identities, Shekhawati can serve as a replicable model for rural development across the country. Ecotourism and rural heritage, when aligned strategically, emerge as powerful agents of inclusive and sustainable development. In conclusion, the Shekhawati region of Rajasthan exemplifies how ecotourism and rural heritage can serve as powerful catalysts for sustainable development. Through its richly frescoed havelis, vibrant folk traditions, and enduring rural lifestyles, Shekhawati offers not only a repository of cultural wealth but also a foundation for inclusive, community-driven growth. Ecotourism initiatives that emphasize heritage conservation, environmental awareness, and local participation have the potential to revive the region's economy, foster pride among residents, and ensure the long-term preservation of its unique identity. However, to fully harness this potential, there must be a strategic integration of policy support, infrastructure development, skill-building, and responsible tourism practices. By balancing conservation with economic opportunity, Shekhawati can emerge as a model for other heritage-rich, ecologically sensitive regions seeking sustainable pathways to development.

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ASSESSING THE LINKAGE OF FINANCIAL LITERACY AND WOMEN'S ECONOMIC DECISION-MAKING IN UTTARAKHAND

Dr. Rashi Alagh

Assistant Professor

Sunrise Academy Management Society

Affiliated to Sri Dev Suman University, Badshahithaul

Tehri Garhwal, Uttarakhand Dehradun

Email: rashialagh123@gmail.com

Abstract

The study comprehensively investigated the impact of awareness and attitude as factors of financial literacy on empowering women's as decision maker at household level. The requisite data for the study was collected by way of self-structured questionnaire administered to a sample of 190 women in Uttarakhand. The questionnaire was designed to measure the abstract financial literacy phenomenon, including financial awareness, knowledge, and attitude, as well as their economic decision-making behaviors. The judgmental cum purposive sampling technique served as criterion for selecting the survey respondents to ensure representation of women from diverse socio-economic backgrounds. The analysis was performed using Smart PLS 4 to measure the extent of hypothesized relationships among the constructs. The results affirmed strong, statistically significant linkages among the constructs confirming that household levels of financial awareness and knowledge significantly improve women's financial autonomy at household level. In a nutshell, the study underscores the necessity of integrated, multi-stakeholder efforts in strengthening financial literacy as a strategic pathway to enhancing inclusive and equitable economic growth, particularly through the empowerment of women.

Keywords: Financial literacy, Financial knowledge, Financial awareness, financial attitude, Household economic decision making.

Introduction

Financial literacy has widely being accepted concept that enables individuals to manage their finances in an efficient and effective manner thereby resulting in better economic decision making outcomes. For women, financial literacy holds additional importance, as it not only fosters individual empowerment but also influences the economic well-being of the entire household. For women, especially in developing countries, financial literacy does not merely ensures economic independence but also serves as a catalyst for enhanced participation in household decision-making processes. As households increasingly become economic units where collaborative financial planning is essential, the financial acumen of women has emerged as a significant determinant of family well-being and stability (Lusardi & Mitchell, 2014).

Historically, women have been marginalized in financial spheres due to structural inequalities, limited access to economic, and socio-cultural barriers. However, recent trends indicate that women play a pre-emptive and significant role in economic decisions at the household level. Financially literate women are more likely to save, invest wisely, manage debts efficiently, and contribute positively to long-term financial planning for their families (OECD, 2013). Moreover, studies show that when women actively participate in financial decisions, there is an observable improvement in children's economic, health outcomes, and overall household welfare (Duflo, 2012).

Financial literacy serve as “a combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual well-being (OECD, 2012)”. It is regarded as an important intervening factor for stimulating financial development through financial inclusion and ultimately financial stability (Ramakrishnan, 2012). Financial literacy facilitates enhanced financial inclusion of individuals. Financial literacy help creates demand through awareness and financial inclusion functions from supply side – equipping individuals with adequate financial services that they demand. It facilitates women to make informed financial decisions for better management of their finances (Cole et al., 2011). Hence it is considered to be an important contributor to women economic empowerment as a financial inclusion dimension. (Ali et al., 2021).

In the Indian context, the intersection of gender roles and financial knowledge presents unique challenges. Many women, especially in rural and semi-urban settings, still face

barriers in accessing formal financial systems and acquiring essential financial knowledge. Government schemes and NGO-led financial literacy programs aim to bridge this gap, yet the impact remains varied depending on socio-economic and economical backgrounds (Agarwal, 2020).

Due to its utmost relevance the government and financial sector intermediaries have accorded special attention to this issue. Among recent initiatives, the setting up of the National Centre for Financial Economic under the Technical Group of Financial Inclusion and Financial literacy established by Financial Stability and Development Council (FSDC) in 2013 with support from RBI, and other ancillary institutions to implement the National Strategy for Financial inclusion and Centre for Financial Literacy project in 2017 were undertaken by RBI as an innovative approach for expanding financial literacy at block level involving selected banks and non-governmental organisations (rbi.org.in). At present, the second phase of National Centre for Financial Economic is underway, the 1st being initiated in 2013-18 involving a 5Cs multi stakeholder led approach based on Content, Capacity, Collaboration, Conduct, Community & Communication for effecting financial skills, attitude and behavior of various sections of society thereby improving their financial well-being NSFE (2025). The NSFE aims at enhancing financial skills of individuals among various sections of society to ensure a bright financial future for all. The ongoing implementation of NSFE 2025 continues to align with the vision of the Government of India to promote economic empowerment through financial awareness. By empowering individuals financially, these efforts aim to synchronize availability accessibility& use of financial services and financial inclusion, resulting in sustainable economic development and individual financial security. Such integrated interventions aim to empower diverse segments of society, especially marginalized women in rural and semi-urban areas, enabling them to participate actively in the formal financial ecosystem and thereby promoting gender equity in economic participation and household decision-making.

Considering its importance, this study constitutes modest attempt to examine the how financial literacy fosters women's economic decision-making across districts of Uttarakhand through a structured analysis involving survey data and advanced statistical techniques. This study is structured with an introduction, literature review, objectives, hypotheses, and a methodology using a survey of 190 women. Data analysis is done with Smart PLS SEM. The

discussion interprets findings, and the conclusion discussing the positive role played by financial literacy in women's economic decision-making, along with practical implications.

Literature Review

Financial literacy has garnered much focus from researchers & industry experts in the academic domain, due to its critical role in accentuating gender equality, economic empowerment, & inclusive financial development, particularly in developing countries where women's participation in financial decision-making remains limited. Recent research has increasingly lay stress on critical role of financial literacy in empowering women to partake in household economic decision-making. Studies by Kumar and Singh (2021) emphasize that financial literacy significantly improves women's ability to manage household budgets and contribute to savings and investment decisions, thereby enhancing family welfare. Similarly, Sharma et al. (2021) found that women with household financial knowledge tend to exercise greater control over financial resources, which positively impacts children's economic and health outcomes.

Research by Patel and Verma (2022) highlights the persistent gender gap in financial literacy in rural areas, where traditional gender norms limit women's access to financial economic and banking services. Their study advocates for targeted financial literacy programs tailored to socio-cultural contexts to increase women's economic participation. Correspondingly, Singh and Joshi (2022) demonstrate through survey data that financial economic initiatives increase women's confidence in making economic decisions, which correlates with improved household savings rates.

In urban contexts, Gupta and Malhotra (2023) reveal that women engaged in microfinance and self-help groups exhibit household financial awareness and autonomy in household spending decisions. This is supported by Rao (2023), who documents that digital financial literacy programs improve women's understanding of digital banking, enabling them to navigate formal financial systems effectively.

Further, Banerjee et al. (2023) investigated the role of government-led financial inclusion schemes on women's financial behaviors, finding a significant rise in women's participation in household budgeting and asset management post-intervention. The longitudinal study by

Chatterjee and Roy (2024) underlines that consistent financial literacy economic leads to sustained improvements in women's economic decision-making roles within families.

Emerging research by Das and Mukherjee (2024) shows that financial literacy imparts benefits of social empowerment and increased bargaining power to women in addition to economic empowerment, contributing to gender equality. Correspondingly, Mehta and Kapoor (2024) report that women possessing financial knowledge are interested to invest in health insurance and retirement planning, reflecting a long-term vision for household financial security.

Recent quantitative analyses by Verma et al. (2024) confirm that women's financial knowledge strongly influences household expenditure patterns, with literate women prioritizing economic and nutrition. Meanwhile, Singh and Kaur (2025) provide evidence that financial literacy training integrated into community programs significantly grants women financial autonomy to take decisions regarding loans & credit.

Innovative studies by Sharma and Iyer (2025) illustrate how digital tools contribute towards enhancing women's financial literacy, with mobile-based economic platforms proving effective in reaching marginalized women. In line with this, Reddy et al. (2025) find that digital financial literacy boosts women's confidence and competence in managing household finances in semi-urban areas.

Across these studies, a common theme emerges: financial literacy is regarded as a important paradigm for facilitating women's empowerment in household economic decision-making. Despite progress, barriers such as socio-cultural norms, limited access to economic, and technological divides remain. Addressing these through integrated financial literacy programs, supported by policy and community initiatives, is essential for improving women's economic roles and household well-being (Kumar & Singh, 2021; Reddy et al., 2025). Despite wide plethora of studies on different facets of financial literacy there exists a void in literature in studying its role in case of women in vulnerable states like that of Uttarakhand. Building upon the extensive body of research, this study aims to address critical gaps related to the financial literacy dimensions that influence women household decision making power.. While previous studies (Kumar & Singh, 2021; Sharma et al., 2021; Reddy et al., 2025) have demonstrated the positive impact of financial literacy on women's decision-making roles, there remains limited

understanding of how these dynamics operate in specific local contexts with diverse cultural and economic backgrounds.

This research focuses on examining the nexus of financial literacy and the economic decision-making capacity of women within households, with particular attention to barriers such as economical levels, access to financial services, and prevailing gender norms.

Despite growing recognition of financial literacy as a driver of women's economic empowerment, there is a paucity of research examining its direct influence over women's economic decision-making within households in Uttarakhand. The region's unique socio-cultural context, marked by varying economical levels, limited access to formal financial services, and persistent gender norms, presents distinct barriers that have not been adequately explored. Furthermore, the effectiveness of current financial literacy initiatives tailored for women in Uttarakhand remains under-evaluated. This study aims to fill these gaps by utilizing quantitative extracted from women at grassroots level data belonging to diverse communities across Uttarakhand to provide in-depth insights. The study also seeks to evaluate the effectiveness of current financial literacy initiatives in enhancing women's financial knowledge and autonomy. By integrating quantitative data, this research aims to provide nuanced insights that can inform policy design and targeted interventions to further empower women economically. Ultimately, the findings intend to contribute to the broader discourse on gender equality, economic development, and financial inclusion, offering practical recommendations for stakeholders engaged in promoting women's financial literacy and household decision-making capabilities.

The findings are intended to inform region-specific policy measures and interventions that can enhance women's financial autonomy and participation in household economic decisions, commensurate with the major developmental goals in the region.

Objectives of the Study & Research Methodology

This research endeavour follows an empirical research design approach and intends to examine the influence of financial literacy on household economic decision making power. The data has been collected through structured questionnaire approach employing data from 190 women respondents residing in Dehradun & Haridwar districts of Uttarakhand. A self structured questionnaire which was personally administered via offline mode for soliciting requisite data from prospective women respondents. The financial knowledge and awareness

(FA) & financial attitude (FA) served as proxies for measuring the abstract financial literacy phenomena consisting of 3 items each whereas the construct of household economic decision making was measured through 5 items accounting for a total of 11 indicators in the model. Financial literacy served as endogenous while HEDM as exogenous variable to measure the extent of intended hypothesized relationship among constructs. The analysis was done using Smart PLS 4 approach. The financial literacy (household order) was measured through two lower order constructs (FKA & FA) The abstract financial literacy phenomena was measured employing two lower-order constructs in PLS-SEM as it is useful for measuring complex concepts like Financial Literacy. **Financial Awareness (FA), Financial Knowledge & Attitude (FKA), and Financial Literacy (FL)** were modeled reflectively constructs. The repeated tow sept indicator approach was used wherein the latent variable scores arrived at 1st step were used as indicators in second step for measuring the relationship of financial inclusion attributes and household economic decision making (Becker, Klein, and Wetzels., 2012). The analysis was performed in two steps whereby an assessment of measurement model was made followed by structural model analysis to measure extent of hypothesized relationship among the constructs.

Hypothesis of the Study

Studies have consistently shown that household levels of financial knowledge improve women's ability to participate in household financial decisions. Lusardi and Mitchell (2014) found that financial knowledge equips women with the skills to budget, save, and plan, thereby increasing their decision-making influence within families. Similarly, Kumar and Singh (2021) demonstrated that women's awareness of financial concepts leads to greater control over household expenditures and investments. Therefore it is hypothesized that

H1: Financial knowledge and awareness positively and significantly impact women's household economic decision-making power.

The attitude towards money management, including confidence and willingness to engage with financial matters, plays a critical role in women's economic empowerment. According to Loke and Boon (2014), positive financial attitudes correlate strongly with proactive financial behaviors, which enhance women's participation in economic decisions at the household level. Sharma et al. (2021) also highlight that a constructive financial attitude fosters greater

involvement in saving, borrowing, and planning activities among women. Thus it is hypothesized that-

H2: Financial attitude positively and significantly impact women's household economic decision-making power.

Financial literacy, encompassing both knowledge and attitudes, is considered as a key driver of women's decision-making power within households. Agarwal (2020) emphasizes that women with household financial literacy are more capable of managing family resources effectively and making informed financial choices. Furthermore, Duflo (2012) argues that financial literacy empowers women to contribute meaningfully to household budgeting, investments, and long-term economic planning. Hence it is hypothesized that

H 3 – Financial literacy positively and significantly impact women's household economic decision making power.

Data Analysis

The present study aims at studying the extent of relationship exhibited by fl and hedm. The hypothesized relationship among constructs was measured using SMART PLS SEM . The use of Smart PLS 4 connotes a two-stage process for involving wherein firstly measurement model essentials like validity and reliability is checked and subsequently structural model analysis is done. The estimation of measurement is done by examining the Cronbach Alpha & composite reliability (Rho a) to confirm internal consistency reliability. The convergent validity is examined through AVE for which the threshold limit is above 0.50 in order to affirm the convergent validity exhibited by the constructs. (Hair et al., 2022). For assessing discriminant validity Fornell larcker criterion for which an AVE is greater than inter-item correlations between the constructs (Fornell & Larcker, 1981), The 2nd step involves the structural model involves the evaluation of the results serving as basis for testing of proposed hypothesis and deriving appropriate conclusions therefrom,

Measurement Model Results

As a precursor to hypothesis testing the model was tested for internal consistency and reliability among the constructs. As shown in table 1 & 2 the results for indicator reliability of each of the constructs (household as well as lower order) component were satisfactory

reflecting the presence of reliability & validity. (Hair et al., 2019). For instance, the Cronbach Alpha values & CR values surpassed the minimum threshold of 0.70 (Fornell & Larcker, 1981; Hair et al 2010; Raykov et al., 2016) confirming the presence of internal consistency & reliability among the constructs. Additionally the convergent validity is examined through AVE for which the threshold limit is above 0.50 to affirm the convergent validity exhibited by the constructs (Sartesdt et al., 2016; Hair et al., 2022). As evident from the tables, the AVE values surpassed the threshold limit thereby affirming good convergent validity.

Table 1 - Reliability of The Model (Lower Order)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
FA	0.690	0.705	0.829	0.620
FKA	0.661	0.716	0.690	0.520
HEDM	0.663	0.777	0.788	0.665

Source – Retrieved from Smart PLS

Table 2 - Reliability of The Model (Household Order)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
FL	0.799	0.799	0.909	0.833
HEDM	0.663	0.778	0.788	0.771

Source – Retrieved from Smart PLS

Discriminant validity

For assessing discriminant validity Fornell larcker criterion for which an AVE is greater than inter-item correlations between the constructs (Fornell and Larcker, 1981). As evident from tables 3 & 4 the AVE values were more than inter item correlation among the constructs confirming discriminant validity results

Table 3 – Fornell – Larcker Criterion (Lower- Order Constructs)

	FA	FKA	HEDM
FA	0.787		
FKA	0.666	0.721	
HEDM	0.909	0.889	0.691

Source – Retrieved from Smart PLS

Table 4 – Fornell – Larcker Criterion (Household - Order Constructs)

	FL	HEDM
FL	0.913	
HEDM	0.986	0.773

Source – Retrieved from Smart PLS

Interpretation of Structural Model

After affirming the model's suitability, the analysis proceeded to evaluate the structural model using path coefficients, T-values, and p-values. According to Hair et al. (2019), t – values above 1.96 and a p-value below 0.05 indicate that the hypothesized relationship is statistically significant in PLS-SEM analysis. The structural model results reveal that both Financial Awareness (FA) and Financial Knowledge & Attitude (FKA) have a strong and statistically significant positive influence on Household Economic Decision-Making (HEDM). Specifically, the path coefficient from FA to HEDM is 0.570 with a T-value of 25.295 and a p-value of 0.000, while the path from FKA to HEDM is 0.510 with a T-value of 18.882 and a p-value of 0.000. These high T-values (well above the threshold of 1.96) and p-values below 0.05 indicate robust significance, suggesting that increases in FA and FKA significantly enhance women' decision-making regarding household economic. Furthermore, in the household-order construct analysis, Financial Literacy (FL) shows an exceptionally strong effect on HEDM with a path coefficient of 0.986, T-value of 464.578, and p-value of 0.000, indicating near-perfect reliability and significance. These findings align with the standards outlined by Hair et al. (2019), who state that path coefficients with high T-values and low p-values confirm the strength and significance of hypothesized relationships in PLS-SEM models.

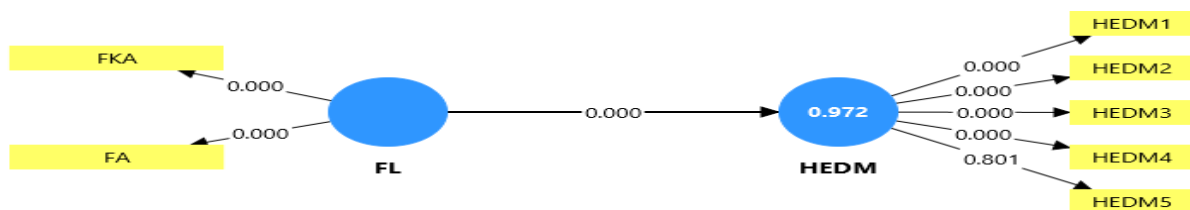
Fig 1 – Structural model

Table 5– Hypothesis Testing (Lower-Order)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
FA -> HEDM	0.570	0.569	0.023	25.295	0.000
FKA -> HEDM	0.510	0.512	0.027	18.882	0.000

Source – Retrieved from Smart PLS

Table 6– Results for Hypothesis Testing (Higher-Order)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
FL -> HEDM	0.986	0.986	0.002	464.578	0.000

Source – Retrieved from Smart PLS

The structural model results reveal that both Financial Awareness (FA) and Financial Knowledge & Attitude (FKA) have a strong and statistically significant positive influence on household Economic Decision-Making (HEDM). Specifically, the path coefficient from FA to HEDM is 0.570 with a T-value of 25.295 and a p-value of 0.000, while the path from FKA to HEDM is 0.510 with a T-value of 18.882 and a p-value of 0.000 as evident from table 5. These high T-values (well above the threshold of 1.96) and p-values below 0.05 indicate robust significance, suggesting that increases in FA and FKA significantly enhance women' decision-making regarding household economic. Furthermore, in the household-order construct analysis, Financial Literacy (FL) shows an exceptionally strong effect on HEDM with a path coefficient of 0.986, T-value of 464.578, and p-value of 0.000 as evident from table 6. These findings align with the standards outlined by Hair et al. (2019), who state that path coefficients with high T-values and low p-values confirm the strength and significance of hypothesized relationships in PLS-SEM models.

This result indicates a **strong and statistically significant** positive relationship between **FA (Financial Awareness)** and **HEDM (Household Economic Decision-Making)**

Since the **T-value exceeds the critical value (usually 1.96 at 0.05 significance level)** and the **P-value is less than 0.05**, the relationship is significant. The results indicate that Financial Awareness (FA) and Financial Knowledge & Attitude (FKA) significantly contribute to Household Economic Decision-Making (HEDM), with path coefficients of 0.570 and 0.510 respectively, both supported by high T-statistics (25.295 for FA and 18.882 for FKA) and p-values of 0.000. These values suggest a strong internal reflection of the constructs on the underlying concept of decision-making in economic. Furthermore, the household-order reflective construct, Financial Literacy (FL), shows an exceptionally strong association with HEDM (path coefficient = 0.986, T = 464.578, p = 0.000), reflecting that the overall latent concept of financial literacy is accurately measured by its indicators and significantly influences decision-making.

Table 7 - Hypotheses Testing Summary: Acceptance or Rejection

HYPOTHESIS	DECISIONS
H1: Financial knowledge and awareness positively and significantly impact women's household economic decision-making power.	H1 ACCEPTED
H2: Financial attitude positively and significantly impact women's household economic decision-making power.	H2 ACCEPTED
H3 : Financial literacy positively and significantly impact women's household economic decision making power.	H3 ACCEPTED

Source: Author's self compilation

Discussion & Conclusion

The current study seeks to study role of financial constructs—Financial Awareness (FA), Financial Knowledge and Attitude (FKA), and the household-order construct Financial Literacy (FL)—on Household Economic Decision-Making (HEDM) using a reflective measurement model within the PLS-SEM framework. The results strongly support the hypothesized relationships, revealing that each construct significantly contributes to women' decisions regarding their household economic pathways.

The path coefficient from **FA to HEDM** ($\beta = 0.570$, $T = 25.295$, $p = 0.000$) and from **FKA to HEDM** ($\beta = 0.510$, $T = 18.882$, $p = 0.000$) indicates that both financial awareness and knowledge-based attitudes have a substantial and statistically significant impact on economical

decision-making. These findings underscore the importance of equipping women with financial information and a sound attitude toward financial planning during their academic journeys.

Furthermore, **the higher -order construct Financial Literacy (FL)** demonstrated a near-perfect relationship with HEDM ($\beta = 0.986$, $T = 464.578$, $p = 0.000$), emphasizing its critical role as a combined influence of awareness, knowledge, and attitude. This validates the conceptual model, highlighting that financial literacy holistically determines women's ability to make informed economic choices.

As per the results, all the proposed hypotheses were accepted. Hypothesis 1 (H1), which stated that Financial Awareness positively and significantly impacts women's household economic decision-making power, supported by a strong path coefficient ($\beta = 0.570$), a high T-value (25.295), and a statistically significant p-value (0.000). Similarly, Hypothesis 2 (H2), proposing that Financial Knowledge and Attitude positively and significantly influence women's economic decision-making, was also accepted at p-value 0.510, T-value of 18.882, and p-value of 0.000. Finally, Hypothesis 3 (H3), which posited that overall Financial Literacy (combining awareness, knowledge, and attitude) positively and significantly impacts household economic decision-making power, was strongly supported by an exceptionally high path coefficient ($\beta = 0.986$), T-value (464.578), and p-value (0.000). These findings collectively confirm the critical role of financial literacy components in empowering women in their household economic decisions.

The results are in conformity with Paluri & Mehra, 2016 which showed positive impact of attitude on Household Economic decision making. Moreover the result corroborates findings of Haque and Zulfiquar 2016) Parvathy & Kumar, 2022, Gautam et al., 2022 García-Santillán, A. 2025) who asserted similar findings. The research outcome highlight the critical role of financial literacy, awareness, and attitude in improving women's household economic decision-making power. For policymakers, this underscores the need to design and implement targeted financial education programs that focus not only on imparting knowledge but also on shaping positive financial attitudes among women. Integrating such programs into through targeted efforts can empower women imparting necessary skills required to manage household finances effectively. Additionally, policies aimed at increasing access to financial resources and services, especially for women from marginalized communities, can further strengthen their economic participation and autonomy. By prioritizing financial literacy in governmental targeted efforts for economic empowerment , policymakers can facilitate more inclusive economic growth and promote gender equity in individual or society level as well.

In conclusion, the findings suggest that strengthening financial literacy among women can significantly enhance their household economic decision-making capacity. The government and policymakers should consider integrating targeted financial economic programs within community to support informed student choices. Future studies may extend this model by exploring moderating variables such as peer influence, socioeconomic background, or digital financial literacy to comprehend understanding of financial literacy.

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ARTIFICIAL INTELLIGENCE (AI) AND MANAGEMENT EDUCATION: AI LITERACY IS THE NECESSITY FOR BUDDING MANAGEMENT PROFESSIONALS

Bhawana Palariya

Assistant Professor, Department of Management
LSM PG Campus, Pithoragarh (SSJ University), (Uttarakhand), India.
Email: palariya.bhawana.1993@gmail.com

Dr. Pankaj Kumar Shah

Professor, Faculty of Commerce & Business Management
Amrapali University, Haldwani, Nainital (Uttarakhand), India
Email: shahpkumar@gmail.com

Abstract

The quick evolution of Artificial Intelligence (AI) in business environments creates a demand for management education to include AI literacy as a fundamental element. The widespread adoption of digital technologies requires contemporary management professionals to acquire basic AI knowledge to maintain a competitive edge and make well-informed decisions. The article examines how business schools should incorporate AI literacy into their management programs to meet modern educational demands. The research demonstrates AI's transformative capabilities in management education by analyzing modern literature and teaching strategies within an established conceptual framework. The paper identifies primary institutional obstacles that include faculty readiness and curriculum development alongside technology access. Early exposure to AI tools increases students' job prospects while simultaneously developing their capacity for strategic thinking and innovation. AI literacy must become an integral part of business education because it is essential for training professionals who can succeed in the future.

Keywords: Artificial Intelligence, AI literacy, curriculum, innovation, conceptual framework

Introduction

The advent of Artificial Intelligence (AI) across business sectors is driving a crucial transformation in management education and practices. Management institutions must evolve their educational programs to equip future leaders with skills for a world enhanced by advanced AI technologies. The transformation extends beyond technology to signify a fundamental change in the conceptualization and implementation of management decisions. Traditional management education curricula are experiencing substantial change because of AI's transformative influence. Business schools now teach AI literacy as a fundamental skill while embedding data analytics machine learning and algorithmic thinking into their course offerings. Case studies have expanded to feature AI deployment situations and students must now learn technical abilities such as interpreting AI results as key educational objectives. Educators must continuously update their knowledge because pedagogical approaches now focus on the critical evaluation of AI-generated insights rather than memorization in this fast-evolving field. AI will evolve to become an all-encompassing partner in management operations. Future managers must work alongside AI systems to perform strategic planning and manage resource allocation and operational optimization. Automation of repetitive decision-making processes will enable managers to dedicate their time to resolving complex problems that necessitate human insight and creativity. Organizations will establish hybrid management systems where AI processes data-intensive operations while humans oversee ethical aspects and manage stakeholder interactions to create a balanced partnership between human intuition and machine accuracy. Management decision-making is being revolutionized by AI through its unparalleled analytical capabilities and predictive insight generation. Through AI-powered decision support systems, managers can process massive datasets to detect patterns and receive recommendations for the best solutions. The implementation of this technology diminishes human cognitive biases and leads to better decision-making outcomes especially when dealing with datasets that contain abundant information. The difficulty emerges when organizations must sustain proper human supervision while simultaneously recognizing the boundaries of AI technologies. Managers who succeed will be those who turn AI-generated recommendations into actions that fit the context and take responsibility for their results. To prepare students for jobs in AI-driven environments they need to acquire both technical skills and human-centered abilities. Management programs need to teach students to operate with AI systems while analyzing their outputs and recognizing their limitations. It is essential to develop human skills

that AI systems cannot duplicate including ethical reasoning along with creative problem-solving and emotional intelligence as well as cross-cultural communication abilities. AI-driven simulations and industry collaborations offer practical experience while developing adaptable thinking enables students to adapt to ongoing technological changes. Management education faces dual aspects of challenge and opportunity through AI integration. Management institutions that adopt AI literacy alongside human skill development can effectively train graduates to succeed in environments dominated by automation. Managers who effectively integrate AI's analytical capabilities with their own human judgment and ethical leadership will shape the future because of technology.

Literature Review

This review explores scholarly discussions about AI literacy in management education to identify essential findings and challenges while offering recommendations to improve educational curricula. The fast-paced transformation of global business by Artificial Intelligence (AI) requires management education programs to include AI literacy as an essential topic. Management professionals today need basic knowledge of AI due to the widespread adoption of digital technologies, so they stay competitive and make informed decisions. The research examines how business schools need to integrate AI literacy into their management programs while stressing the need for educational innovation and adaptation. This research demonstrates how artificial intelligence can revolutionize management education through a comprehensive literature review and examination of pedagogical practices and conceptual frameworks. This paper identifies the primary obstacles educational institutions encounter including faculty readiness training and curriculum development together with technology accessibility.

A. Workforce Disruption and Skills Gap

- **Brynjolfsson (2017):** Automation threatens mid-skill jobs; adaptability is key.
- **Bughin (2019):** Adoption of AI is uneven; industry-specific reskilling is needed.

B. Managerial Transformation

- **Davenport (2018):** Managers must be AI-literate to lead data-driven organizations.
- **Wilson (2018); and Susskind (2020):** Managerial skills are evolving to include tech fluency and algorithmic reasoning.

- **Chui (2018):** Strategic planning now requires AI integration in MBA curricula.

C. Educational Reforms

- **Makridakis (2017):** Current systems are outdated; innovation is critical.
- **Kaplan (2021):** Curricula must include AI theory, ethics, and application.

D. Practical Exposure and Pedagogy

- **Ng (2019):** Real-world AI experience enhances learning.
- **Zhang (2020):** AI tools improve engagement and learning outcomes.

E. Institutional Barriers and Opportunities

- **Thomas (2021):** Infrastructure and faculty development are major hurdles.
- **Westerman (2019):** The digital maturity gap threatens institutional competitiveness.

Literature Review Major Aspects in which we focus:

Brynjolfsson (2017) shows how AI disrupts global labor markets by automating routine cognitive and manual tasks.

Davenport's 2018 work examines how organizations are transforming their decision-making through AI and analytics.

Makridakis (2017) asserts that educational systems show inertia and rigidity despite exponential technological advancements.

The 2021 study by Kaplan examines how AI literacy should become a core component of professional and higher education programs.

Bughin's 2019 study examines AI adoption trends in several sectors such as healthcare and finance while demonstrating that early adopters gain considerable advantages which expands the divide between digitally advanced and behind-the-times industries.

Zhang's 2020 research focuses on how AI tools such as adaptive learning platforms and chatbots affect student engagement and performance while exploring potential issues of data privacy and algorithmic bias.

Wilson (2018) – Managerial Competencies for AI Era Identifies six key managerial competencies in AI-driven organizations: The article promotes a move from classic leadership attributes to modern technology-based adaptive leadership.

Ng's 2019 research on Practical Exposure to AI in Business Education reveals that business schools currently lack practical AI training despite theoretical teachings. The author calls for experiential learning through AI labs and projects as essential to learning and suggests forming partnerships with tech companies.

Scaling AI education requires understanding both barriers and enablers such as infrastructure deficits and faculty resistance alongside curriculum rigidity.

Susskind (2020) – Redefining Managerial Skills Argues that traditional business education does not address the emerging demands of AI-integrated work environments. Proposes a redefinition of managerial skillsets: The redefined managerial skillsets should include digital empathy together with algorithmic literacy and ethical considerations for automated systems.

Chui (2018) examines AI's role in strategic planning and its impact on MBA programs by highlighting its influence on market forecasting and customer analytics while recommending AI integration into core business areas like marketing and finance. Business schools should start teaching AI through executive workshops and micro-credentials.

Westerman's 2019 study identifies a pervasive shortfall in digital transformation among educational institutions. Leadership and organizational culture stand as primary barriers to progress.

Table 1

Author	Focus Area	Key Findings	Recommendations
Davenport (2018)	Advocates AI fluency in modern organizational decision-making	Data-driven management is becoming essential	Develop AI literacy programs for managers and executives
Makridakis (2017)	Urges systemic change in education to address	Emerging technologies are outpacing	Design agile, future-oriented educational frameworks

	technological disruption	traditional education models	
Kaplan (2021)	Focus on integrating AI into professional education	The curriculum must evolve to include AI competencies	Incorporate AI modules across disciplines in higher education
Bughin (2019)	Explores industry-specific AI adoption and workforce skill needs	AI impacts and adoption rates vary by sector	Tailored training and reskilling programs by industry
Zhang (2020)	Assesses outcomes of AI-enhanced learning environments	AI tools can improve student engagement and performance	Expand research on AI's pedagogical effectiveness
Wilson (2018)	Identify skills for AI-enhanced management roles	Managers need analytical, technological, and collaborative skills	Redefine management education around AI-enhanced roles
Ng (2019)	Emphasizes hands-on AI learning in business education	Practical AI exposure builds confidence and understanding	Integrate AI labs, simulations, and case studies into business curricula
Thomas (2021)	Discusses institutional readiness for AI integration	Institutions face infrastructural and strategic challenges	Develop strategic plans and invest in digital infrastructure
Susskind (2020)	Calls for reimagining managerial competencies in the AI era	Traditional skills are insufficient; adaptability and tech fluency are crucial	Promote interdisciplinary, lifelong learning approaches

Chui (2018)	Examines AI's role in strategic planning within MBA programs	Strategic planning increasingly depends on AI capabilities	Embed AI and data analytics into MBA coursework
Westerman (2019)	Highlights the digital maturity gap in educational institutions	Many institutions lag in digital transformation	Accelerating digital transformation initiatives in education

Summary of the above table

The workforce implications are equally significant. According to Bughin (2019), businesses faced differing AI adoption rates across industries which require customized training approaches but Wilson (2018) states that analytical, technological, and collaborative skills become essential for managerial roles enhanced by AI. Ng (2019) advocates hands-on learning methodologies by proposing the integration of AI labs and simulations along with real-world case studies into business education to enhance practical skills. Zhang (2020) discusses how AI tools have the potential to enhance student engagement and performance and advocates for more research into AI's effectiveness as an educational tool. Thomas (2021) and Westerman (2019) warn that numerous institutions lack readiness for AI integration because of deficiencies in strategic planning along with insufficient infrastructure and digital maturity. Their research demonstrates that strategic planning together with digital infrastructure investment is crucial to unlock AI's full potential across educational institutions and workplaces.

Objectives of the Study

This research explores why AI literacy should be included in management education programs and how business schools can incorporate AI concepts into their teaching materials. The research intends to discover both the difficulties and effective methodologies pertaining to incorporating AI literacy into management training.

Methodology

This research integrates findings to establish a thorough comprehension of AI education's present state and its future trajectory in management programs. The study implements a

qualitative and conceptual research design best suited for examining emerging phenomena such as AI literacy where empirical data has yet to become fully established. By using secondary data—sourced from:

- Academic journals
- Industry reports
- Publications from think tanks and educational institutions

The study benefits from multiple viewpoints without being restricted by the constraints of limited primary data samples. The literature-based approach enables the combination of authoritative sources' trends and frameworks to deliver essential insights.

- Direct experimentation is not feasible
- The subject is cross-disciplinary (AI + management)

Key Strength: Through conceptual research, scholars can develop theoretical frameworks and practical models that inform new or rapidly changing subjects such as AI integration.

Hypothesis of the Study

Hypothesis (H1): Management students who become proficient in AI literacy improve their chances of employment and develop better strategic decision-making abilities. Managers now:

- Interpret AI-generated insights
- Lead AI-driven innovation
- Make ethical decisions about AI deployment

Understanding AI concepts, applications, limitations, and ethics becomes a strategic management capability instead of a technical skillset.

Data Analysis

Through conceptual analysis using secondary data this study evaluates both the importance and current integration of AI literacy within management education. The academic literature review shows agreement about the increasing importance of AI in business functions along with the need for managers who understand AI. Institutions teaching AI-focused courses observe better student involvement and preparation for employment. Three main challenges have been pinpointed which involve insufficient faculty knowledge, restricted availability of AI resources, and unyielding educational programs. Various innovative approaches including

partnerships with technology firms alongside online platform usage and curriculum modifications help institutions significantly in the preparation of management professionals for future challenges.

Table 2

Opportunity	Description	Action Required
AI-Enabled MBA Programs	Leading business schools such as IIM Bangalore and ISB have initiated pilot programs for AI modules. Educational institutions expect to completely incorporate AI modules into MBA programs within five years.	Incentivize interdisciplinary courses with AI + management content.
Faculty Upskilling	AI integration faces substantial obstacles because faculty members are not adequately prepared. Formal AI training exists for just 23% of management faculty members in India. The lack of faculty preparation restricts both curriculum delivery effectiveness and student engagement in AI concepts.	The NEP 2020 initiative includes national-level workshops and AI fellowships.
AI Incubators on Campus	Partnerships with Infosys, Google, and TCS enable colleges to establish Artificial Intelligence laboratories. Through these partnerships educational institutions gain access to expert support and tools while students get to work on real-world projects. Students receive practical industry-aligned AI education through this program.	Through AI-based internships and capstone projects, students obtain practical industry experience. Microsoft serves as IIM Bangalore's partner in executing AI-driven business analytics projects. These

		educational programs equip students with essential skills for professional positions where data analysis guides business decisions.
Policy Support	Through "AI for All" NITI Aayog works to make AI education accessible to all Indians. The initiative provides support for pilot projects in schools and universities to develop basic AI competencies. The initiative will eventually extend to management schools to develop leaders prepared for AI challenges.	UGC and AICTE are promoting AI education growth within business schools. The creation of new guidelines for incorporating AI modules into MBA and BBA programs is currently underway. The initiative prepares upcoming managers with important skills in AI and data literacy.

Conclusion and Findings

Management education needs AI literacy as an essential component rather than an optional feature. The expanding influence of AI across all economic sectors requires management professionals to acquire the necessary skills to use these technologies effectively. Through both literature review and conceptual framework development this study shows that students who develop AI literacy improve their critical thinking skills together with their strategic planning abilities and problem-solving capabilities. Institutions should update their teaching programs

and provide faculty development while incorporating interdisciplinary educational approaches to prepare students properly. The implementation of these strategies will lead to higher graduate employability rates while simultaneously advancing the development of a workforce proficient in digital skills and innovation.

Table 3

Category	Inside	Example and Evidence
a. Value of AI Literacy in Business Education	Enhanced Employability: Exposure to AI tools (Power BI, Tableau, Python, ChatGPT, GPT APIs) makes students well-prepared for the future.	<i>Harvard Business Review</i> reports that AI-aware leaders make faster and better decisions
b. Institutional Practices and Innovations	The integration of AI through dedicated MBA courses alongside interdisciplinary minors and project applications results in enhanced student engagement and better job placement opportunities.	<i>MIT Sloan</i> and <i>INSEAD</i> offer specialized AI modules that build student confidence and capability
c. Key Barriers Identified	Management instructors typically do not possess sufficient AI skills.	Observed across various business schools globally, especially in developing regions
d. Proposed Solutions and Best Practices	Academic partnerships with Microsoft Learn and IBM	<i>IIM Bangalore</i> collaborates with <i>NASSCOM Future Skills</i> to

	Academic Initiative extend industry collaborations.	implement AI in management learning

Hypothesis Confirmed: A fusion of secondary data from scholarly and professional publications strongly supports the theory that management students who develop AI literacy show improved employment prospects and strategic decision-making abilities.

This conclusion is underpinned by a consistent trend in literature:

- Research evidence reveals a consistent pattern that supports this conclusion.
- Graduates proficient in artificial intelligence show superior preparation for employment alongside enhanced adaptability and strategic analysis skills.
- Employers actively search for candidates who possess both business knowledge and basic AI expertise.
- Beyond tool operation, AI literacy forms essential skills for leadership roles in digital transformation projects.

In today's management landscape professionals need to develop AI literacy as an essential skill. Successful leadership in innovation through data-driven decision-making in digital economies demands a solid foundational skill set. Educational institutions that embed AI literacy into their primary objectives will produce job-ready graduates who will advance ethical AI practices in the business world. Management education needs to incorporate AI Literacy to meet modern demands.

Implications for Practices

Successful implementation of Artificial Intelligence (AI) in management education requires comprehensive changes across teaching methods, faculty training, curriculum organization, and institutional collaborations. The visual framework generates several essential implications for practice.

1. Shift from Tools to Strategic Thinking

- For AI to become an essential part of strategic decision-making we need to shift our mindset away from seeing AI as merely a technical tool. Management students must be trained to:

- Students in management programs must learn to evaluate the appropriate business scenarios for AI application through an analysis of its practicality and potential outcomes.
- Management students need to learn about ethical challenges and regulatory issues while acknowledging organizational and operational consequences related to AI deployment alongside biases in automated systems.
- AI reshapes traditional competitive landscapes and changes decision-making approaches by making agility and data analysis fundamental leadership elements.

2. Faculty Upskilling and Pedagogical Innovation

- Teaching AI literacy in classrooms primarily depends on faculty preparedness. A significant obstacle exists because only 23% of management faculty members in India have received AI-related training.
- Educational institutions need to establish AI literacy training programs and certification opportunities for faculty using platforms like SWAYAM at the national level and international MOOCs.
- Faculty members should work with industry experts or data scientists to teach practical AI applications through co-teaching models.
- Use case-based learning along with simulation-based methods and experiential teaching to integrate theoretical knowledge with practical application.

3. Curriculum Reform and Industry Collaboration

- Traditional educational programs do not equip students for jobs in AI-driven work environments. Reform must include:
- MBA and BBA programs require modular AI elective courses that explore AI applications in marketing, finance, operations, and HR.

- Students tackle real-world business challenges through capstone projects that utilize AI technologies such as Python, R, Tableau, and ChatGPT.
- Technology companies such as Infosys, TCS, and Google should partner to create AI labs and innovation hubs while providing internship opportunities.

4. AI Literacy as a Core Management Competency

- AI literacy should advance beyond its status as a specialized skillset to become fundamental for managers.
- Students need the ability to express both the strengths and weaknesses of AI while understanding its ethical limits to support smart decision-making in executive meetings.
- Organizations need professionals who can develop and execute AI strategies while maintaining alignment with organizational objectives and social duties.

Integration with Policy and Future Outlook

The practices described fit with national frameworks such as NITI Aayog's "AI for All" initiative while receiving potential support through policy-based curricular requirements from UGC and AICTE. The nation needs strategic faculty-led industry-aligned AI literacy models because they fulfill academic responsibilities and build future-ready leadership.

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THE ENGAGEMENT RATES AND INFLUENCING FACTORS OF AI-GENERATED AND HUMAN-GENERATED SOCIAL MEDIA CONTENT ON CONSUMER BUYING DECISION

Anshika Aggarwal

Research Scholar, Faculty of Commerce & Management

Sri Dev Suman Uttarakhand Vishwavidyalaya, Badshahithaul, Tehri Garhwal

Uttarakhand, India

Email: anshiagg3999@gmail.com

Prof. (Dr.) Vijay Prakash Srivastava

Professor, Faculty of Commerce & Management

Sri Dev Suman Uttarakhand Vishwavidyalaya, Badshahithaul, Tehri Garhwal

Uttarakhand, India

Email: vijay23praksh@gmail.com

Abstract

In today's digital world, consumers are constantly exposed to content made by both human and AI on social but does it really matter who generated the content when it comes to influencing what consumer buy? This study examines that question by comparing how AI-generated and human-generated content affect consumer buying decision. AI tools are now widely used in marketing, so it's more vital than ever to know how consumers respond to them because many brands employ AI to boost engagement but still worried about trust, authenticity and brand image. The study utilized a qualitative method by using content analysis to analyse existing literature from 2010 to 2024 in which many studies are only related to artificial intelligence. Therefore, in order to fill the gap underexplored areas, this study investigate the factors influencing the consumer response and the engagement patterns of consumers towards AI vs. Human-generated social media content. The results suggest that AI-generated content do well and even look more trustworthy but consumer still prefer human-generated. This study gives marketers, companies and governments useful information on how to employ AI in a way that builds consumers' trust.

Keywords: AI-generated, Artificial Intelligence, Consumer Buying Decision, Human-generated, Social Media.

Introduction

In today's digital world, the line between human creativity and artificial intelligence is becoming increasingly indistinct which is changing the way people interact with brands on social media. This change isn't only about technology but it also changes how marketing messages are made, communicated, and understood by people (Tischendorf & Brinkmann, 2024). The rise of AI in social media marketing has led to what researchers call the "digital authenticity paradox." Consumers often face struggles to make a difference between content made by AI and content made by people, but being aware where the content came from can have a big effect on their buying decisions. Marketers must find a way to blend new ideas with being real in order to keep consumers' trust and engagement. This phenomenon has strong implications for businesses because 67% of consumers say that social media content affects their buying decisions (Macha et al., 2024), and companies who use AI in marketing get 50% more leads. The stakes are high because 58% of marketers invest more money into AI and automation in 2024 (Lukan, 2025), yet 60% are worried about potential harm to their brand reputation.

It becomes important for marketers to know how consumer react to content made by AI versus content made by human. Many studies show that AI-generated content can be used in advertisement without causing lower levels of consumer purchase intention and, in fact, AI-generated people are seen as more credible in advertisement than real human beings. The way people connect with AI versus human content shows some interesting things about how people think. Millennials between the ages of 25-34 are the most successful at spotting AI-generated content. US customers are also 10% more likely to notice AI content than UK consumers. These differences in demographics show that cultural and generational factors have a big impact on how people perceive and interact with different types of content. Also, just 33% of people trust generative AI, while 55% of people feel positive about companies who use AI in marketing which shows the complicated relationship between trust, acceptance and engagement.

Therefore, this research fills important gap by understanding how consumers response in the AI-generated and human-generated content on social media marketing. This study gives marketing professionals useful information on how to deal with the complicated digital world by looking at what makes consumers respond to AI-generated content versus human-generated content and examining their engagement patterns. The results contribute to the growing body of knowledge on consumer behaviour in the age of artificial intelligence and also give

businesses and policyholders useful guidance for improving their social media marketing campaigns while maintaining long term relationship with their consumers.

Literature Review

Beyari and Hashem (2025) showed how AI greatly increases the efficacy of social media marketing by facilitating real-time consumer interaction and personalized content delivery, which in turn improves purchase intentions among 893 MENA consumers. According to their research, artificial intelligence (AI) tools for influencer marketing, content optimization and customization successfully capture consumer attention while strengthening brand loyalty by improving user experiences. Extending these personalization capabilities, Zachurzok-Srebrny (2024) found that through in-depth behaviour analysis and predictive recommendations, AI-driven content personalization makes previously unachievable levels of customer engagement possible. The study demonstrated how AI facilitates real-time interactions through chatbots and evaluates social media sentiment to guide communication tactics, fostering stronger ties between brands and their target audiences. The impact of AI-driven strategies in sustainable social media marketing on consumer purchase behaviour was also examined by S P and Elantheraiyan (2025), who found that machine learning and natural language processing aid marketers in better understanding consumer preferences and streamlining the distribution of content. Studies of consumer perception about AI-generated entertainment show that their feelings are complex. Sepolen (2024) did experimental research with Generation Z consumers and found that most of them can tell the difference between AI-generated and human-made marketing content. However, knowing that AI generation doesn't change how much they trust products and companies. This study went against what most people thought about AI skepticism and showed that being open about how AI is used doesn't have a big effect on younger people's buying decisions. Tischendorf and Brinkmann (2024) also found that ads with AI-generated people and ads with real people did not make any differences, in fact, people thought that AI-generated content was more believable. Popa and Chenic (2025) shows that when ads use AI, people think the company is less authentic, which hurts their desire to buy, image of their business and consumer trust. These impacts are stronger for well-known brands than for fictitious one which shows that people react differently to brands they are familiar with and also those who know more about AI are less likely to trust brands. The engagement performance of AI-assisted content shows good outcomes Buffer (2024) looked nearly 1.2 million posts and found that AI-assisted content always gets more engagement on all social media platforms than the posts who don't use AI. Kumari and Gupta (2025) talked about how

AI may make online shopping more personal by using machine learning and natural language processing which makes product recommendations better and automates customer assistance, but there are still worries about authenticity and ethical biases. Ratta et al., (2024) said that AI-generated ads get people more interested in products and services and make more sales by making innovative, balanced ads that touch people's emotions. Wang (2025) created a deep learning system that accurately predicted what people will buy, showing how AI can change how people shop online and how to improve marketing. Lastly, Flores et al. (2025) found that AI-generated material has a big effect on how people use media since it changes based on what users like, which makes it easier for people to find and enjoy information.

Research Methodology

This study is based on qualitative research methodology using the content analysis. this research fills important gap by systemically investigate the factors influencing the consumer response and the engagement patterns of consumers towards AI vs. Human-generated social media content. The researcher use content analysis is particularly well-suited for this study because it allows in-depth examination of data within existing literature. The data is collected from peer-reviewed journal articles published between 2010-2024 with focus on the most recent publications to grasp the rapidly evolving buying decision of consumers.

Findings and Conclusion

The Engagement Pattern and Factors Influencing the Consumer Buying Decision Towards AI And Human-Generated Social Media Content

The study examines the factors which influence consumer response towards AI-generated and human-generated social media content. The "authenticity paradox" in AI-generated content is one of the most fascinating findings in recent studies. Despite consumers' constant preferences for real, human-generated content, research shows that they frequently lack the ability to judge the difference between artificial intelligence and human-generated content. According to Tischendorf and Brinkmann (2024), there was a statistically significant ($p < 0.05$) increase in the perceived credibility of AI-generated humans in advertisements compared to real humans which contradicts the commonly accepted belief that consumers find human content to be more reliable by nature. Similarly other study showed that half of consumers can accurately recognize AI-generated copy, and the MIT study found that when participants didn't know where the content came from, they were more satisfied with AI-generated content than with

human-generated content which implies consumer bias against AI may be more psychological than based on actual content quality perception.

Platform-Specific Performance Variations

There are notable differences in engagement metrics between various social media platforms. By analysing 1.2 million post it was found that AI-assisted content had higher median engagement rates across all platforms. The most notable differences were seen on Threads (11.11% vs. 5.56%) and TikTok (6.14% vs. 4.17%). On professional sites like LinkedIn, the advantage was minimal (6.85% vs. 6.22%), indicating that audience expectations and context play crucial roles in content reception.

Table 1: Factors Influencing Consumer Response to AI And Human-Generated Social Media Content

Factor Category	Specific Factor	AI-Generated Content Impact	Human-Generated Content Impact
Content Authenticity	Perceived Authenticity	Negative (-)	Positive (+)
	Transparency/Disclosure	Mixed ($\pm$)	Higher trust with disclosure
	Brand Genuineness	Negative (-)	Positive (+)
Brand Trust	Trust in Brand	Negative (-)	Positive (+)
	Credibility Perception	Positive (+)	Mixed ($\pm$)
	Brand Reputation	Negative (-)	Positive (+)
Content Quality	Content Creativity	Positive (+)	Mixed ($\pm$)
	Visual Appeal	Positive (+)	Mixed ($\pm$)
	Personalization	Positive (+)	Lower efficiency
Consumer Demographics	Age Group	Neutral (0)	Varies by age
	Technical Affinity	Neutral (0)	Less relevant
	AI Literacy	Mixed ($\pm$)	Traditional preference
Platform Characteristics	Platform Type	Platform-dependent	Consistent across platforms
	Content Format	Format-dependent	Versatile formats
	Social Proof	Lower than user-generated content	Higher with user-generated content

Source: Table is compiled from multiple research studies (2023-2025)

Engagement Pattern of Consumer

User-generated content (UGC), in particular, continues to have a major advantage when it comes to influencing consumer purchasing decisions. Studies consistently demonstrate that 90% of consumers say user-generated content (UGC) affects their purchasing decisions, with 74% saying that viewing UGC photos increase their propensity to buy which reflects Consumers' desire for authentic peer experiences and social proof. According to a Taylor study, 63% of consumers think UGC makes for a more genuine shopping experience, and 81% of consumers are willing to pay more and wait longer for products that use UGC (Nagrani & Kumar, 2021) which implies that although AI can improve productivity and customization, it cannot completely replace the ability of genuine consumer experiences to promote trust. Depending on brand familiarity, the impact of AI-generated content varies greatly. Established brands are more affected by AI disclosure effects, indicating that they stand to lose more from AI association than do fictional or newer brands which has significant implications for transparency regulations and brand strategy. AI-assisted content's engagement performance shows encouraging outcomes. AI-assisted content consistently achieves higher median engagement rates across all social media platforms when compared to non-AI-assisted posts, according to Buffer (2024) analysis of 1.2 million posts.

However, this study shows how social media posts generated by both AI and human can effect consumer buying decision. It reveals that individuals often prefer content which is generated by humans but they can't always discern the difference. Some AI-generated content is surprisingly perceived as more credible and interesting, especially when consumers don't know it was developed by AI. The research also indicated that user-generated content (UGC), including reviews and images from genuine consumers is still the most important factor in shaping consumer buying decision because they consider it as more authentic and trustworthy. There are some limitations in this research because it mostly uses previous literature and secondary data, it does not reflect the current feelings of consumers or cultural differences in real time. It also doesn't have any first-hand information, like interviews or surveys that could help us understand the deeper insights into consumer emotions and preferences. Therefore, future research should investigate into these by getting firsthand feedback from consumers of all ages, countries and social media sites. They should also look into how disclosing the use of AI affects brand trust and how AI can be used in a more transparent and ethical way. This will help marketers strike the right balance between being efficient and authentic which will help them build trust with their audience over time.

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TAX COMPLEXITY AND INVESTMENT BEHAVIOUR: A COGNITIVE LOAD PERSPECTIVE ON INDIAN TAXPAYER'S CHOICES

Prof. S.K. Sharma

Professor, Department of Commerce, SRT Campus
HNB Garhwal University, Srinagar Garhwal, Uttarakhand
Email: drsksharma.in@gmail.com

Yoginder Kumar

Research Scholar, Department of Commerce, SRT Campus
HNB Garhwal University, Srinagar Garhwal, Uttarakhand
Email: yoginderkumarkadam@gmail.com

Abstract

This study explores the multifaceted impact of tax complexity on the underutilization of tax-saving investment avenues by individual taxpayers in India. Drawing on Cognitive Load Theory (CLT), the paper examines how structural, computational, procedural, record-keeping, linguistic, and legal complexities collectively impose significant cognitive and compliance burdens that hinder informed decision-making. Through an extensive review of academic literature, government reports, and expert analysis, this research highlights how the intricate and frequently changing tax environment leads to mental overload, confusion, and reliance on intermediaries, thereby discouraging engagement with higher-return but more complex instruments such as Equity Linked Savings Schemes (ELSS), National Pension System (NPS) etc. The findings underscore the need for simplified tax structures and clearer guidance to reduce cognitive strain and enhance taxpayer participation in diversified investment options. This study contributes to the understanding of tax behaviour in emerging economies by integrating cognitive theory with tax policy analysis, offering valuable insights for policymakers aiming to improve compliance and investment outcomes.

Keywords: Indian Tax System, Tax Complexity, tax-Saving Instruments, Taxpayer Decision-Making, Cognitive Overload

Introduction

The Indian tax system is often perceived as one of the most complex in the world, with its numerous deductions, exemptions, and complicated compliance procedures. While the system is designed to ensure fairness, efficiency and revenue generation, its structural interpretive complexity often confuses individual taxpayers making it difficult to plan effectively and choose suitable tax-saving options. Frequent changes to legislation, unclear rules, and the burdensome documentation process further intensify the cognitive load on taxpayers, leading to hesitation, poor financial planning and missed tax-saving benefits. As a result, reliance on tax consultants and financial advisors for selecting tax-saving investments has increased.

This phenomenon can be better understood through the lens of cognitive load theory. Sweller (1988) suggested that complex information often increases the mental load, thereby reducing the individual ability to process and comprehend it effectively. This cognitive strain can lead to missed opportunities, particularly in the context of potentially rewarding tax-saving investment avenues. This perspective is further supported by (Van Merriënboer & Sweller, 2005), who emphasized that excessive load caused by complex information, can hinder individuals from making informed and effective decisions and compromise their ability to evaluate alternatives effectively.

Recognizing the challenges posed by such complexity, global institutions such as the International Monetary Fund (IMF) and the Organization for Economic Co-operation and Development (OECD), have strongly emphasized the urgent need to simplify tax systems worldwide to enhance transparency, reduce tax avoidance, and foster economic growth (Abdel-Kader & A. De Mooij, 2020; OECD, 2017). In the Indian context, the prevailing complexity of the tax system has significantly contributed to the underutilization of beneficial tax-saving schemes such as the Public Provident Fund (PPF), National Saving Certificates (NSC), and Fixed Deposits (FDs), which otherwise offer secure and advantageous investment opportunities.

Despite the growing intricacy of the Indian tax system, there is a notable lack of empirical research specifically addressing how this complexity affects individual investment decisions - particularly in the context of tax-saving investments. This study aims to bridge this gap by investigating how the structure and procedural complexity within the tax system impose cognitive burdens on individual investors and hinder their ability to select optimal tax-saving

options. While previous studies have examined factors such as investor knowledge, risk appetite, and attitude towards tax-saving investment, they fail to recognize the role of tax system complexity in shaping investment decisions. This gap is particularly significant, as the lack of clarity and persistent confusion surrounding tax law contribute to the underutilization of beneficial investment options like Public Provident Fund (PPF), National Saving Certificate (NSC) and Fixed Deposit (FDs).

Building on this theoretical foundation, the present study aims to investigate how the complexity of the Indian tax system contributes to cognitive load and influences individual taxpayers' decision-making regarding tax-saving investments. By identifying the specific elements of the tax system that create confusion and mental burden, the study intends to guide policymakers and financial institutions with evidence-based recommendations to reduce complexity, develop a clearer and more user-friendly tax framework, and enhance tax literacy among taxpayers. Accordingly, the objectives of the study are:

Q1: To define and map the dimensions of tax-system complexity relevant to Indian taxpayers.

Q2: To assess how this complexity affects individual decision-making in selecting tax-saving investments.

Roadmap

This paper is structured to systematically address the research objectives and provide a comprehensive understanding of the complexity of the Indian tax system and its impact on tax-saving investment decisions.

Literature Review: Defines and maps key dimensions of tax-system complexity affecting Indian taxpayers.

Theoretical Framework: Introduces Cognitive Load Theory to explain how tax complexity creates a mental burden and impacts investment decisions.

Research Methodology: Describe the research design, data collection, and analysis methods used to study tax complexity and investment behaviour.

Descriptive Analysis: This section examines how different aspects of tax complexity discourage taxpayers from choosing higher returns tax saving investments.

Conclusion and Practical Insights: Summarizes findings and offers actionable recommendations to reduce complexity and improve tax-saving investment use.

Literature Review – Defines and maps key dimensions of tax-system complexity affecting Indian taxpayers.

Tax complexity is a multifaceted burden that significantly shapes how individuals perceive, navigate, and response to tax system – especially when making investment decisions and fulfilling compliance obligations. This review aims to define and synthesize the multinational aspects of tax complexity, with a focused lens on their impact on Indian individual taxpayer's investment choices and compliance behaviour.

1. The Nature and Impact of Tax Complexity

Kirchler and Braithwaite (2007) assert that higher levels of complexity reduce taxpayers' willingness to comply and increase their compliance cost. Earlier studies, such as Slemrod and Blumenthal (1996), primarily focused on compliance burden, especially the difficulty of filing returns. However, recent literature emphasizes the multidimensional nature of tax complexity (Hoppe et al., 2021; Tran-Nam & Evans, 2014). The American Institute of Certified Public Accountants et al. (1992) highlights that tax complexity stems from overlapping rules, ambiguous terminology, and burdensome administrative procedures. These collectively foster confusion, increase the likelihood of errors, and impair taxpayers' ability to make sound investment decisions- thus elevating the risk of non-compliance.

As tax systems evolve to align with economic growth and policy objectives, their inherent complexity has simultaneously intensified (Sawyer, 2016). This rising manifests in practical dimensions, such as computational difficulties, excessive documentation, complicated tax forms, frequent legal amendments, intricate compliance procedures, and poor readability of tax legislation (Walker, 2022; Musimenta, 2020; American Institute of Certified Public Accountants et al., 1992). These factors not only raise the administration burden but also impose cognitive strain on individual taxpayers, often leading to suboptimal investment decisions—such as avoiding or misusing tax-saving opportunities—and diminishing their motivation or capacity to comply .

Framework Categorizing Tax Complexity Dimensions

To conceptualize and assess the multidimensional nature of tax complexity, various scholars have proposed frameworks categorizing its core dimensions. One of the earliest contributions

came from Susan B. and Judyth A. (1987), who identified six critical dimensions: ambiguity, computational difficulty, frequent changes, excessive detail, record-keeping burdens, and complex tax forms. Subsequently, Evans et al. (2010) and Martinez and Da Silva (2019) distinguished between legal complexity (relating to the clarity and interpretation of tax laws) and compliance complexity (relating to the resources required to fulfil tax obligations). This distinction highlights the need to simplify legal provisions to improve taxpayer's understanding, thereby influencing compliance and investment behaviour positively.

Hoppe et al. (2018) further categorized tax complexity into tax code complexity (technical intricacy of written tax law) and tax framework complexity (relating to administrative enforcement). Hoppe et al. (2021) identify policy measures to close loopholes and use of tax incentives as two major drivers of increasing tax complexity, which can both promote investment but also confuse taxpayer if not designed clearly. Moreover, tax complexity often arises from balancing multiple policies goals such as efficiency, equity and social welfare (Gregory A. & Andrew D., 1996; Kaplow, 1988; Stantcheva, 2020), but frequently results in unintended negative consequences – confusion, information overload, uncertainty and taxpayer frustration (Abeler & Jäger, 2015; Feldman et al., 2015; Krause, 2000).

To synthesize the diverse conceptualization of tax complexity, Table 1 (provided) maps key tax complexity dimensions as identified across influential studies. The comparative mapping reveals both overlapping and unique elements, providing a structural framework for understanding the multifaceted nature of tax complexity.

Authors' Detail	Definitions of Tax Complexity				
	Definition	Location	Elements/ drivers/ dimensions	Targeted Group	Findings
J. Slemrod (1989)	In the absence of a direct definition, it can be interpreted as difficulties faced by taxpayers due to the complicated nature of the tax code, including	United State	Complexity of tax laws and regulations, difficulties in understanding and applying tax laws, length and technicality of tax forms.	General Taxpayers (Specially filing ITR respondents)	The results indicate that tax complexity negatively affects taxpayer compliance behaviour.

	unclear rules and challenging calculations.				
AICPA et al. (1992)	In the absence of a formal definition in the report, tax complexity is described as the intricate nature of the tax system caused by confusing concepts, complex calculations, burdensome forms, and filing procedures, administrative hurdles, legal intricacies and frequent changes in tax regulations.	United State	The complexity of the tax system results from conceptual confusion, computational requirements, difficult forms and filing procedures, administrative processes and legal intricacies and frequent changes in laws.	Not specify	The tax system's complexity is shaped by general, specific and external forces.
Evans et al. (2010)	Although the article doesn't provide an explicit definition of tax complexity, it can be understood as difficulties arising from the technical intricacies of tax laws, the structural challenges with the tax system, and the burden associated with complying with tax procedures and documentation.	Australia	Tax complexity involves technical, structural and compliance complexity.	Not specify	The article underscores the need for simplification and identifies three key types of complexity.

Isa (2014)	Tax complexity as interpreted from the article, refers to the challenges taxpayers face in complying with tax obligations, primarily due to intricate computations, extensive record-keeping requirements, and ambiguity in legal provisions.	Malaysia	Tax complexity is shaped by factors such as computational complexity, extensive record-keeping, and legal ambiguity.	Tax Auditors & Corporate Taxpayers	The article indicates that computational tasks and record-keeping responsibilities are the main sources of difficulty for small businesses.
Saad (2014)	Based on the discussion in the article and related literature, tax Complexity refers to multifaceted difficulties and challenges that arise from the increased sophistication and intricacy of tax laws, regulations, procedures, and documentation.	New Zealand	It encompasses various dimensions such as computational demands, the complexity of tax forms, procedural burdens, unclear or ambiguous rules, frequent legislative changes, and low readability of tax forms.	Individuals including 11 salary employees, 12 retirees, 5 entrepreneurs, 1 student & 1 welfare beneficiary (30 Participants)	The findings highlight the importance of simplifying tax procedures and improving tax education to support better compliance.
Hoppe et al. (2018)	Tax complexity is a feature of the tax system that arises from the difficulty of reading, understanding, and complying with the tax code, as well as from various issues within	Germany	The tax code complexity encompasses elements such as ambiguity and interpretation, frequent changes, detailed requirements, record-keeping	MNCs Tax Consultants (221 Respondents)	The author conceptualizes tax complexity through a two-pillar framework that reflects its multidimensional nature, emphasizing the details and frequent changes are the most critical

	the tax framework.		burdens, and computational difficulties. Similarly tax compliance complexity includes procedural aspects such as enactment processes, audit procedures, appeals mechanisms, guidance availability, and filing and payment of taxes.		contributing factors.
Martinez and Da Silva (2019)	The article doesn't provide a formal definition of tax complexity. Based on the findings, tax complexity refers to the inherent difficulty in understanding and applying tax laws due to factors such as unclear language and complicated sentence structures.	Brazil	Low readability arises from complex language and long sentences in tax laws, making them hard for individuals to understand.	Corporate Taxpayers	The analysis reveals that Brazilian tax legislation exhibits low readability, highlighting an urgent need to simplify legal language to improve accessibility and ease compliance
Hoppe et al. (2021)	Tax complexity is a feature of the tax system that arises from the difficulty of reading, understanding, and complying with the tax code, as well as	Germany	Tax complexity is a composite outcome of tax code and framework complexity. Tax code complexities include	MNCs Tax Consultants (993 respondents)	The results reveal that India's tax code complexity is highly complex, whereas its tax framework exhibits a low level of complexity.

	from various issues within the tax framework.		inherent challenges within specific tax regulations that include ambiguous language, frequent amendments, complex computation rules, detail provisions and extensive record keeping. Similarly, tax framework complexity arises from the processes related to legislation and administrative processes that structure the tax system. It includes the development and enactment of tax laws, clarity and accessibility of tax guidance, procedures for tax filing, audits, and appeals.		
Owusu et al. (2021)	The article lacks an explicit definition of tax complexity; however, it implies multifaceted	West Africa	While the article does not directly outline the elements of tax complexity, the emphasis	Self-employed individuals (725 respondents)	The results indicate a negative correlation between tax complexity and intention to comply,

	challenges arising from intricate legal provisions, procedural requirements, and structural aspects of the tax system, which can hinder understanding, and increase compliance burden.		on simplifying laws and procedures suggests the presence of legal and procedural complexity.		suggesting that greater complexity discourages compliance.
Kumar et al. (2025)	Tax system complexity refers to the intricacy and difficulty in understanding and complying with tax laws, regulations and procedures.	India	The complexity of tax arises from intricate regulations, limited clarity, and extensive procedural burdens.	Individual Taxpayers (548 respondents)	Tax system complexities significantly influence behavioural intention.

Table 1 : Literature-Based Definitions and Drivers of Tax Complexity**Source: Author's own creation**

The literature mapped in Table 1 highlights recurring themes and concerns in scholarly discourse around tax complexity, aligning closely with the six dimensions conceptualized in this study: Structural, Computational, Procedural, Record-Keeping, Linguistic and Interpretive, and Legal Complexity. Each cited work provides insights that collectively justify and support the multidimensional framework used in this research. By categorizing the literature according to these six dimensions, this study builds a comprehensive foundation for assessing how various aspects of complexity influence taxpayer's behaviour and decision-making in the Indian context.

This fulfils objective 1 by establishing a structured and literature-supported framework that defines and contextualizes the six core dimensions of tax complexity.

The concept of tax complexity has been widely discussed across different countries, yet scholars have rarely offered a direct or universally accepted definition, instead, the construct has predominantly been addressed by identifying and exploring its key elements. J. Slemrod

(1989) and American Institute of Certified Public Accountants (AICPA) et al. (1992) emphasize the multifaceted nature of tax complexity in the United States, pointing to ambiguous tax rules, burdensome and technical forms, complex computations, administrative hurdles, and frequent changes in tax regulations that collectively make compliance difficult for taxpayers. Evans et al. (2010) identify technical, structural, and compliance-related complexities, whereas Isa (2014) in Malaysia emphasizes computational demands, legal ambiguity, and record-keeping burdens faced by corporate taxpayers. Saad (2014) in New Zealand expands this by noting the procedural and interpretive challenges experienced by a diverse group of individuals, underscoring the role of tax education in mitigating these effects.

A notable contribution by (Hoppe et al., 2018; 2021) proposes a two-pillar framework distinguishing tax code complexity (related to legal provisions and rules) from tax framework complexity (concerning administrative and procedural aspects). This distinction corresponds closely with structure, legal and procedural complexities- particularly in the context of multinational corporations' tax system navigating the German tax system. Meanwhile, Martinez and Da Silva (2019) in Brazil focus on linguistic complexity and low readability in tax documents as significant deterrents to voluntary compliance, directly pointing out the legal language complexity construct. Owusu et al. (2021) in West Africa linked legal and procedural intricacies to reduced compliance intent among self-employed individuals. Recent findings by Kumar et al. (2025) shift the lens to India, showing that unclear tax language, frequent amendments, complex calculations, documentation burden, and administrative red tape significantly shape individual taxpayers' behaviour. Collectively these insights cover the six key aspects of tax complexity: structural, computational, procedural, record-keeping, language-related related and legal change.

Despite the extensive contributions highlighted above, a critical gap remains. Much of the existing literature either centres on corporate taxpayers or multinational taxpayers or is drawn from the experience of tax professionals within developed economies. This leaves a notable gap in understanding how individual taxpayers – particularly in developing countries like India – perceive and respond to tax complexity in everyday financial decisions. India's tax system, as noted by Hoppe et al. (2021), is among the most complex in the world due to unclear language, frequent legislative changes, intricate computation procedures, detailed legal provisions, and burdensome documentation requirements. Furthermore, the absence of a universally accepted definition of tax complexity, coupled with the diversity of interpretations across existing literature, underscores the need for greater conceptual clarity. To address this,

the present study systematically synthesizes existing definitions and key dimensions of tax complexity to develop a practical framework (Table 1).

Tax complexity refers to the multinational challenges individuals face in understanding, interpreting, and complying with tax laws. This complexity primarily stems from six interrelated dimensions: structural intricacies, computational difficulties, procedural burdens, record-keeping challenges, linguistic ambiguity, and legal uncertainty. These constructs capture the root cause of complexity, each contributing uniquely to the compliance burden experienced by taxpayers. Structure complexity forms the foundation of this burden, arising from the inherent intricacy and design of tax laws at any given time. This includes multiple tax slabs, overlapping exemptions, special provisions and differential treatment across income types or sectors, which reflect the static feature of tax legislative complexity without considering future amendments or interpretative changes (Saad, 2014; OECD, 2017). These complexities are made apparent when taxpayers struggle with numerous confusing tax slabs, overlapping exemptions, and special provisions that often overlap, leading to further confusion.

Another closely associated dimension is computational complexity, characterized by the struggles taxpayers encounter in performing tax calculations. Tasks such as complex calculations, identifying the correct eligibility and amount of deductions and rebates, computing surcharges, and consolidating income from multiple sources become challenging (OECD, 2017; James & Wallschutzky, 1997). These computational difficulties are compounded by procedural complexity, which relates to the operational challenges during tax compliance. Filing returns, undergoing audits and assessments, managing appeals, and completing verification steps often involve cumbersome processes that many taxpayers find confusing and overwhelming making compliance even more arduous (OECD, 2017; Baurer, 2005; Ruhl et al., 2015). The burden further extends with record-keeping complexity, where taxpayers experience the challenge of organizing, and maintaining financial records for extended periods, managing diverse income and expenses, and following complicated reporting standards. According to the Income Tax Act, of 1961, along with CBDT taxpayers must maintain detailed records of income, expenses, and investments to comply with tax laws. This dimension creates a sustained strain, as taxpayers must retain documents accurately and follow rigorous format, which may be burdensome and difficult to track effectively. Saptono et al. (2024) note that Complex and inefficient document filing requirements increase compliance costs and encourage non-compliance, linking tax complexity to higher risks of tax evasion. (Evans et al., 2005; Eichfelder & Vaillancourt, 2014; OECD, 2017). Adding to this, linguistic and

interpretive complexity arises from the use of technical jargon, ambiguous language, and a lack of clear, accessible explanations in tax laws and guidance. Taxpayers often encounter tax documents filled with complicated terminology, lengthy instructions, and insufficient plain language supports, which make understanding and interpreting tax requirements a significant challenge. Simply, it emphasizes the challenges involved in interpreting tax documents and instructions (Alm et al., 2003). Thorndike (2020), Alm et al. (2003) & James and Wallschutzky (1997) collectively highlight that unclear filing instructions further confuse taxpayers, particularly first-time filers, hindering their participation in the system. According to Gupta (2025) simplifying the language used in tax documentation can greatly improve taxpayer engagement and minimize confusion. Legal complexity further intensifies the challenges faced by taxpayers, frequent changes, internal conflicts, and contradictions in tax laws that make understanding and applying law difficult. It highlights how amendments and legal updates disrupt taxpayers' understanding and compliance efforts (OECD, 2017); James & Wallschutzky, 1997; J. B. Slemrod & Blumenthal, 1996; Bahl & Bird, 2008).

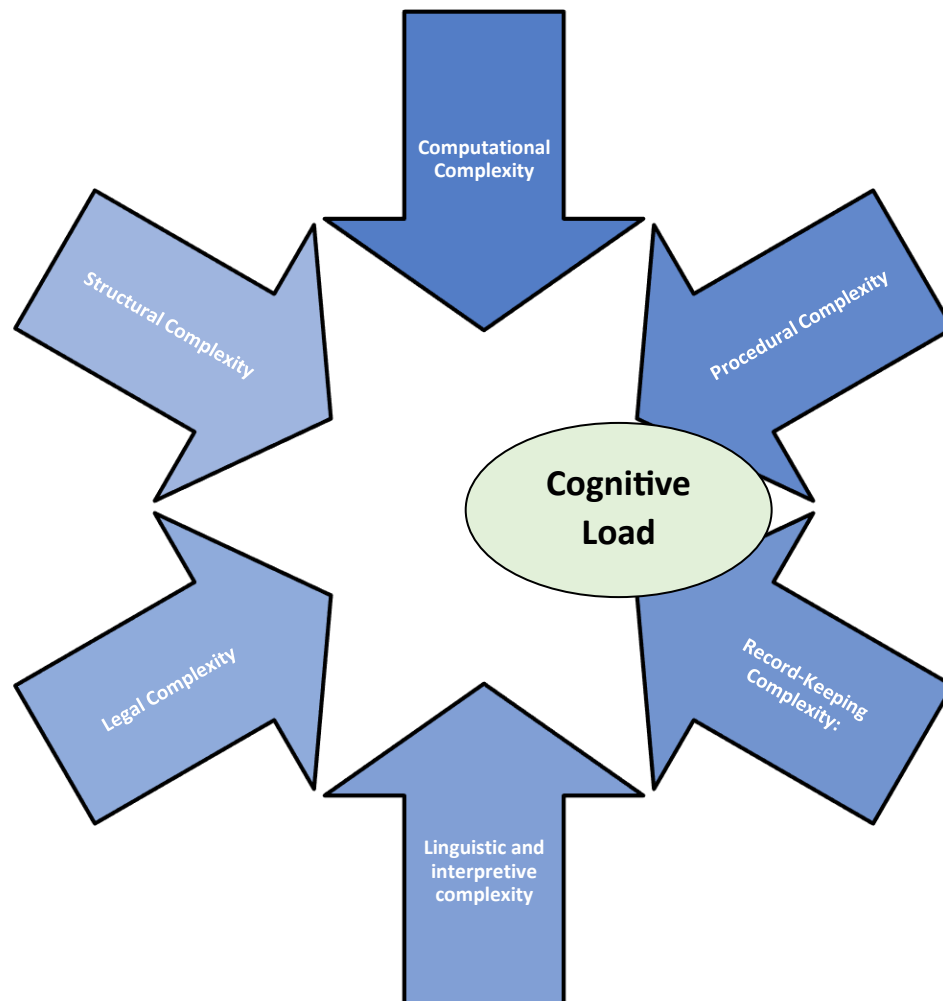


Figure 1: Tax System Complexity

Source: Self Generated

Theoretical Framework: Cognitive Load Theory

This section introduces Cognitive Load Theory (CLT) as a framework to understand how tax complexity creates a cognitive burden and influences investment decision-making. Originally developed by Sweller (1988), CLT explains how individuals process complex information and make decisions under mental strain. The theory posits that the human working memory has limited capacity, and when this capacity is exceeded, both learning and decision-making are compromised. Paas et al. (2003) expanded this theory by identifying three types of cognitive loads: intrinsic load, which stems from the inherent complexity of the material; extraneous load, caused by how information is presented; and germane load, related to cognitive effort devoted to learning and understanding. Together, these elements clarify why individuals often struggle in environments with high informational complexity, especially when information is disorganized or includes unnecessary detail.

In the context of taxation, CLT explains how vague or imprecise statutory language, frequent revisions, detail provisions, complex calculations and cumbersome procedural requirements (J. Slemrod, 1989; Evans et al., 2010; Hoppe et al., 2018) can overload cognitive capacity. Hoppe et al. (2018) & J. Slemrod (1989) further argue that unclear tax forms, technical jargon, and inconsistent guidance amplify both intrinsic and extraneous loads, often mentally overloading the taxpayers. This mental overload hinders their ability to comprehend tax-saving provisions, evaluate investment alternatives, and make informed financial decisions. As a result, many taxpayers experience mental fatigue and become increasingly reliant on intermediaries such as tax agents or consultants. Applying CLT, this study investigates how systemic tax complexity contributes to cognitive burden and shapes the decision-making process of individual taxpayers in India. These findings align with F. G. W. C. Paas and Van Merriënboer (1994), who note that poorly designed instructional environments – compliance environments intensify extraneous load and negatively affect problem-solving.

Research Methodology

This study employs a qualitative research approach to explore how various dimensions of tax complexity influence taxpayers' investment decisions in India. The research is entirely based on secondary data collected from academic literature, government reports, policy documents, industry analyses, and credible media articles. This methodology enables an in-depth understanding of the multifaceted challenges faced by taxpayers in navigating the Indian tax system and selecting tax-saving investment avenues.

The primary sources of data include peer-reviewed journal articles, authoritative reports from organizations such as the OECD, World Bank, United Nations Economic and Social Commission for Asia and the Pacific, and reports by reputed consulting firms including PwC India. In addition, reputable news outlets and specialized tax analysis platforms provide contextual and recent information about ongoing reforms, taxpayer experiences, and administrative challenges. These sources were carefully selected for their credibility, relevance, and comprehensive coverage of tax complexity issues.

The study adopts a thematic analysis approach to synthesize findings across diverse data sets, identifying recurring patterns and themes related to structural, computational, procedural, record-keeping, linguistic, and legal complexities in the Indian tax environment. This approach facilitates a nuanced interpretation of how these complexities collectively contribute to the

cognitive and compliance burdens borne by taxpayers. The findings are further interpreted through the lens of Cognitive Load Theory (CLT) introduced in Section II, linking empirical insights with theoretical understanding.

Given the complexity and multi-dimensional nature of tax systems and taxpayer behaviour, qualitative analysis provides the flexibility to capture contextual subtleties and deeper insights that quantitative methods may overlook. It allows for the integration of diverse perspectives and sources, facilitating a holistic understanding of how tax complexity shapes investment choices.

While the reliance on secondary data offers broad coverage and rich insights, it may be limited by the availability and scope of existing literature and reports. The absence of primary data collection, such as surveys or interviews, restricts the ability to capture real-time individual taxpayer experiences and perceptions. Nevertheless, the comprehensive analysis of existing authoritative sources provides a robust foundation for understanding systemic tax complexity and its impact on investment behaviour.

Tax complexity and its influence on tax-saving investment decision in India

The underutilization of tax-saving investment avenues in India is strongly influenced by multiple dimensions of tax complexity within the system. These complexities – structural, computational, procedural, record-keeping, linguistic, and legal – create significant cognitive and compliance burdens for taxpayers, limiting their ability and willingness to engage with higher-return but more complex instruments like Equity Linked Savings Schemes (ELSS) and National Pension Schemes (NPS). This section applies the six-dimensional framework to analyze how each type of complexity deters the effective use of tax-saving investment options in Indian context.

Structural Complexity

India's capital gains tax framework illustrates structural complexity through its fragmented classifications, shifting policy rules, and layered exemptions mechanisms. According to Desk (2024), the 2024 Union Budget introduced uniform holding periods – 12 month for listed securities and 24 month for unlisted assets – to streamline the classification of gains into short-term and long-term. However, the removal of inflation indexation for long-term capital gains

on real estate and the increase in short-term capital gains tax on certain financial assets from 15% to 12% have compounded taxpayer confusion, highlighting persistent ambiguity in rate structures and assets-based differentiation

Further structural complexity arises from intricate and conditional exemption provisions. For instance, section 54 of the Income Tax Act allow relief on capital gains arising from the sale of residential property, but only if the gains are reinvested in up to two new residential properties within specified timeframes. The benefit is further capped at ₹2 crore and can be availed only once in a taxpayer's lifetime. These layered conditions, combined with asset-specific treatment, create a complicated decision-making environment for taxpayers seeking to optimize their capital gains.

Structural complexity also stems from overlapping tax slabs, multiple exemptions, and special provisions that create uncertainty and reduce transparency in the tax system (Klemm, 2009; Brown et al., 2017)). This uncertainty undermines taxpayers ability to plan and optimize their investments effectively, causing many to favor simpler, well-known tax-saving instruments such as Public Provident Fund (PPF) and National Saving Certificate (NSC) over potentially higher-yielding but more complex options like ELSS or NPS (OECD, 2017). The intricate interaction of provisions increases perceived compliance risk, pushing taxpayers away from more strategic financial planning.

Computational Complexity

Building on structural barriers, computational complexity further affects taxpayers decision-making. Calculating tax liabilities presents a significant challenge for many individuals, especially when identifying eligible deductions, computing surcharges, and aggregating income from multiple sources. (Blaufus & Ortlieb, 2009; Yetman, 2003). Blaufus and Ortlieb (2009) found that increased complexity diminishes the likelihood of employees making decision based on after-tax returns, highlighting the deterrent effect of complex tax systems on optimal financial planning. Futhermore, Kosonen (2015) demonstrated that providing clear tax rule information significantly reduces unintentional errors in reporting, underscoring the importance of transparency in compliance. Such burdens discourage engagement with instruments requiring deeper tax calculations, such as ELSS and NPS.

Administrative & Procedural Complexity

In addition to structural and computational concern, procedural hurdles further disincentivize taxpayers. Administrative challenges such as filing returns, managing verification processes, and navigating appeals or grievance mechanisms are often experienced as stressful McKerchar (2007). Instruments requiring multiple compliance steps, such as NPS and ELSS, are particularly affected, as they introduce additional procedural obligations compared to straightforward alternatives like PPF. Saptono et al. (2024) highlight that bureaucratic discourage participation in schemes requiring greater documentation and interaction with tax authorities, prompting individuals to favor less burdensome options regardless of financial advantages. According to Aggarwal (2024), increasing compliance and reporting obligations are making tax-related tasks more difficult for individuals. The Confederation noted that existing burdens deter individuals from engaging with more complex tax-saving schemes (The Economic Times, 2024). Similarly, TOI Business Experts (2024) emphasized the negative impact of administrative burdens on compliance, suggesting that a simplified tax administration would encourage broader participation.

Record-Keeping Complexity

Maintaining records for tax compliance – such as investment proofs, income details, and receipts – imposes a significant burden on individual taxpayers, especially those managing multiple income sources. Fear of making documentation errors or losing eligible deductions discourages individual from choosing tax-saving instruments with higher paperwork requirements. Tax2Win, (2025) and Saptono et al., (2024) note that risk-averse taxpayers prefer low-documentation options like PPF. M. McKerchar (2007) found that extensive documentation requirements increase taxpayer stress and reduce compliance. Although reforms such as pre-filled returns aim to simplify compliance, the need for long-term, accurate record-keeping continues to deter investment in more sophisticated avenues. (Murarka, 2025)

Linguistic and Interpretive Complexity

The language used in tax forms and official instructions often includes legal jargon and technical terms that are hard for the average taxpayer to comprehend (Martinez et al., 2021; M. A. McKerchar, 2008). This complexity is intensified by insufficient localized language support, especially for rural or low-literacy taxpayers (M. A. McKerchar, 2008; OECD, 2017). Such barriers reduce taxpayer confidence in understanding and managing complex schemes like ELSS and NPS. McKerchar (2008) emphasized that complex tax language discourages participation and increases non-compliance risks. OECD (2020) and World Bank

Group (2019) also report that interpretive complexity contributes to low voluntary compliance and reduced investment diversity.

Legal Complexity

Legal complexity in India's tax system primarily arises from frequent amendments, conflicting provisions, and unclear application of tax rules. Constant changes in tax laws and sudden policy shifts make it difficult for taxpayers to stay informed, creating confusion and reducing trust in the system (OECD, 2020; Klemm, 2009). For example, the 2024 Union Budget attempted simplification by standardizing holding periods for capital gains, but simultaneously removed indexation benefits and increased short-term taxes- adding to layers of confusion rather than clarity.

The application of Section 54 exemptions, with lifetime limits and asset-class-specific conditions, exemplifies how a legal rule continues to require intense scrutiny, discouraging taxpayer from utilizing them (Ray, 2024; Policy Bazar, 2025). Richardson (2006) & McKerchar (2008) found that legal unpredictability increases compliance cost and encourages conservative financial behaviour.

Together, these six dimensions of tax complexity – structural, computational, procedural, record-keeping, linguistic, and legal – form a web of cognitive and compliance challenges. This complexity deters taxpayers from engaging with investment avenues like ELSS and NPS that offer higher returns but demand greater understanding, effort and strategic planning. As a result, taxpayers often retreat to familiar, low-risk instruments despite potentially lower long-term financial gains.

Conclusion and Practical implication

This study reveals that the multifaceted complexity of India's tax system — spanning structural, computational, procedural, record-keeping, linguistic, and legal dimensions — imposes a substantial cognitive and compliance burden on individual taxpayers. Consistent with Cognitive Load Theory (CLT), these overlapping complexities exceed taxpayers' cognitive capacity, leading to mental overload, confusion, and ultimately suboptimal investment decisions.

The findings indicate that taxpayers often default to simpler, low-risk instruments such as Public Provident Fund (PPF) and National Savings Certificate (NSC), despite the availability of higher-return options like Equity Linked Savings Schemes (ELSS) and National Pension

System (NPS). This preference stems from difficulties in understanding ambiguous tax provisions, navigating complicated calculations, fulfilling burdensome procedural requirements, and coping with dense, technical language.

The cognitive strain generated by tax complexity not only hampers taxpayers' ability to fully comprehend tax-saving opportunities but also undermines their confidence in managing compliance independently. As a consequence, many rely heavily on intermediaries, which may introduce additional costs and reduce the overall efficiency of tax planning. The legal and administrative unpredictability further erodes trust in the system, discouraging proactive investment behaviour.

From a policy perspective, these insights highlight the urgent need to simplify tax laws and improve the clarity of communication with taxpayers. Measures such as reducing the number of exemptions, streamlining procedural requirements, enhancing the usability of tax forms, and providing localized, plain-language guidance could significantly lower cognitive and compliance burdens. Simplification efforts should be complemented by financial literacy initiatives tailored to diverse taxpayer groups to improve germane cognitive load — encouraging deeper understanding and better decision-making.

For tax administrators, adopting user-centred design principles in tax communication and digital interfaces can help minimize extraneous cognitive load. Enhanced digital tools, pre-filled tax returns, and intuitive calculators can assist taxpayers in managing computational and procedural complexities effectively.

In conclusion, addressing tax complexity through targeted simplification and taxpayer support is critical to unlocking broader participation in tax-saving investments. This will not only improve individual financial well-being but also contribute to more efficient tax compliance and a healthier investment ecosystem in India.

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THE RISE OF ENTREPRENEURSHIP AMONG WOMEN IN INDIA

Shilpi Thapliyal

Assistant Professor, Sunrise Academy Management Society, Dehradun
Sri Dev Suman Uttarakhand University (State University)

Abstract

In modern-day years, India has witnessed a huge boom indoors the quantity of ladies who are coming into the sector of entrepreneurship with a greater revel in of self guarantee and fortitude. In every town and rural areas, Indian girls are difficult norms, tearing down barriers, and redefining the legal guidelines of industrial employer. The upward push in the big shape of girl entrepreneurs in India isn't always top notch a signal of the converting times, however it's also a crucial detail inside the financial and social transformation of the u . S . A .. The boom of entrepreneurship among women has been inspired thru the use of a mixture of financial, technological, social, and insurance-pushed factors. Women are putting in region ventures in a ramification of sectors, which includes technology companies, fashion, social companies, and production. The cause of this studies have a have a look at is to collect secondary statistics from a severa array of resources, together with authorities web web sites, research magazine articles, and novels. It is descriptive and analytical in its nature. Influential commercial organisation company executives, begin-up founders, and social entrepreneurs within the period in-between are acquiring prominence amongst Indian girls, who have been traditionally marginalized in financial choice-making. From grassroots ventures in rural India to immoderate-growth companies in metropolitan cities, girls are organising new paths.

Introduction

This transformation is especially noteworthy in a country in which the gender disparity in labor strain participation remains excellent. Women's entrepreneurship isn't merely a image of gender equality; it's miles a treasured mechanism for the development of country wide economies, the rest of poverty, and the empowerment of groups. Entrepreneurship is diagnosed as a global catalyst for monetary improvement, employment, and innovation. The emergence of ladies entrepreneurs in India is a powerful improvement inside the pursuit of monetary

inclusion and gender parity. According to Bain & Company (2019), the kind of women-owned companies in India ranges from thirteen.Five to 15.7 million, representing approximately 20% of all agencies within the U. S . A .

Nevertheless, the journey has been hard. The involvement of girls in entrepreneurship has been impeded by means of manner of manner of the presence of profoundly ingrained socio-cultural norms, the lack of get admission to to assets, and the restriction of institutional beneficial aid at some stage in statistics. A favorable environment has been hooked up for girls to set up and growth their groups over the last a long term due to a mixture of presidency responsibilities, virtual revolution, instructional enhancements, and societal transformation. In Indian society, ladies have traditionally been liable for homemaking and nurturing. However, this narrative is presently gift technique a quick transformation. Women had been able to with any luck count on duty for his or her monetary destiny due to the developing availability of virtual gadget, monetary manual, and training. In the past, Indian ladies have been worried in family businesses or self-employment in informal sectors, on the aspect of automobile transportation, beautician artwork, tailoring, meals processing, indoors format, and handicrafts. This vicinity became now not formally stated. The put up-liberalization duration, which started out in the 1990s, became characterized via massive monetary modifications that reinforced private commercial organisation corporation. Women began out to engage in mainstream entrepreneurship, specially in city regions, on foot in sectors along side fashion, education, and IT services. A considerable growth of the Indian startup surroundings passed off inside the 2010s, which have become accompanied with the resource of an expanding middle class, coverage reforms, and superior net penetration. A first-rate increase in ladies-led ventures have become decided as girls commenced to take part more conspicuously in virtual structures, social agencies, and e-trade. Regardless of whether or not or not it is a sustainable fashion logo in Jaipur, a tech task in Bengaluru, or an natural agricultural agency agency in a rural village, Indian girls are demonstrating that commercial enterprise is not gender high-quality.

Historical Context

Prior to 1991, entrepreneurship end up restrained to small-scale industries and own family-owned businesses due to a complicated regulatory surroundings and a protectionist economic tool till liberalization.

Post-Liberalization Period: The liberalization of India's economic system have end up facilitated thru way of way of financial reforms that have been applied in 1991. This, in turn, facilitated the increase of foreign funding, deregulation, and privatization. This surroundings changed into conducive to entrepreneurship.

Financial constraints, insufficient education, and patriarchal norms have traditionally hindered the involvement of Indian girls in formal entrepreneurship. However, there has been a huge upward push inside the shape of girls-led businesses within the 21st century. In India's pursuit of inclusive improvement and virtual transformation, the emergence of woman entrepreneurship is not handiest a gender fairness hassle however also a large economic possibility.

Review of the Literature

As Sharma (2013) positioned, "entrepreneurship amongst ladies has been a modern issue and is now diagnosed as an critical untapped deliver of economic boom." She emphasizes the significance of training and socio-financial changes in the vending of girls's participation inside the agency region, in particular in metropolis regions.

The empowerment of ladies isn't the singular cause of the improvement of ladies marketers, as regular with Agarwal and Lenka (2016); rather, it's far the set up order of a sustainable financial gadget. They argue that the ascension of extra women into entrepreneurial positions has been facilitated via the use of economic liberalization and authorities projects; however, disparities in get entry to to finance and education persist.

Women marketers face big annoying conditions, including the absence of financial help, the male-dominated society, and the twin duty of administering their family and commercial business enterprise, as in keeping with Dhameja, Bhatia, and Saini (2000). Their research emphasizes the dual burden that Indian girls bear—the need of reconciling their familial and expert obligations.

Tambunan (2009) states that "women marketers in growing international places are in tremendous engaged in micro and small agencies, which may be frequently casual and unregistered, thereby proscribing their get proper of get admission to to to crook protection and capital." His findings are regular with the evaluations of a sizeable form of rural ladies entrepreneurs in India.

According to Kantor (2001), "The absence of supportive guidelines, loss of mobility, and social norms are frequently more big obstacles than a loss of capital." Her art work emphasizes the want of confronting socio-cultural worrying situations similarly to financial assets as a way to foster sustainable entrepreneurship.

Dangi and Kumar (2013) underscore the importance of microfinance and self-assist companies, claiming that "rural entrepreneurship amongst ladies has acquired a brand new momentum through SHGs, which give financial assistance and employer organization spirit." The selling of entrepreneurship among low-income ladies is notably facilitated with the aid of the use of method of those communal organizations.

Rani (2018) criticizes the efficacy of presidency tasks, claiming that "programs like Stand-Up India, which might be meant to sell ladies's entrepreneurship, are undermined through insufficient reputation and implementation." Her research shows that this machine's effectiveness can be superior with the aid of imposing more big outreach, enhancing tracking, and simplifying strategies.

Kumar (2020) emphasizes the significance of virtual literacy and schooling, setting ahead that "Skill improvement, mentorship, and digital equipment can remodel girls into confident marketers." He is a proponent of the incorporation of entrepreneurship education at severa ranges to make certain lengthy-term empowerment.

Singh and Belwal (2008) furthermore underscore the importance of peer help and mentoring: "Women frequently face barriers in phrases of enterprise boom and sustainability once they lack get right of entry to to entrepreneurial networks." Their studies suggests that monetary useful resource, similarly to emotional and expert aid structures, are essential for achievement.

Objectives of the Study

- To decide the elements which have contributed to the upward push within the quantity of lady marketers in India.
- To check out the industries in which ladies marketers are maximum active.
- To apprehend the stressful conditions confronted via girl entrepreneurs.
- To determine the monetary and social effect of companies which might be managed via ladies.
- To advise methods for fostering a greater inclusive entrepreneurial environment.

Causes for the Rise of Entrepreneurship among Women

1. Education and Awareness

At present, there may be a record-excessive form of women in India who are pursuing professional training and better education. Aspirations and self perception have been in addition reinforced via manner of exposure to worldwide necessities via the net and social media.

2. Digital Revolution

The proliferation of smartphones, cheaper information, and e-trade structures has allowed girls to installation and perform companies from almost any place. They can successfully market their producers, control logistics, and connect to clients with minimum investment thru using virtual equipment.

3. Governmental Initiatives

In order to encourage girl entrepreneurs, the Indian government has done a numerous array of responsibilities:

- **MUDRA Yojana:** This initiative allows the hooked up order of small organizations and the improvement of several ladies closer to entrepreneurship thru manner of way of manner of imparting micro-credit score rating. This initiative emerge as launched on April 8, 2015, as a part of the National Mission for Financial Inclusion. Its goal have come to be to offer financing of as lots as Rs.10 lacs to small micro corporations which have been not agricultural or business enterprise. Small finance banks, commercial enterprise banks, community rural banks (RRBS), micro finance establishments, and non-banking finance corporations (NBFCs) had been to provide loans to women who've been interested by putting in a small to medium-sized organization in production, seeking out and promoting, services, and adjoining agricultural sports. This software offers the opportunity to benefit a loan without the need for collateral.

The loans are to be allotted amongst 3 fundamental commands:

Shishu- Businesses which can be in the initial degrees of development may additionally additionally get keep of a maximum of Rs. 50,000. □

Kisor- Companies which have a properly-mounted employer may be eligible for the Kisor supply, that is to be had in the sort of Rs. 500,000 to Rs. Five million.

Tarun - 5 to ten lacs is to be had to groups which have a well-set up agency however require greater rate range to increase their operations a wonderful manner to inspire girl marketers.

- **Startup India:** Enables mentorship, investment, and training. Poverty consolation obligations have had a giant effect at the advertising and marketing and marketing of girls's entrepreneurship. As a flagship software, the Government of India initiated the Startup India initiative in 2016 with the aim of selling entrepreneurship and innovation within the nation. The objective is to installation a supportive surroundings for corporations that lets in you to facilitate their boom and development by using fostering financial growth and employment via innovation and layout. One of the several benefits that the initiative presents to renowned marketers is the Startup India Seed Fund Scheme (SISFS).
- **Stand-Up India Initiative:** Under this initiative, banks are obligated to offer financing to at least one lady entrepreneur in line with branch. They offer mentoring, investment help, and tax exemptions. This initiative have grow to be applied on April five, 2016, as a part of the country wide mission for financial inclusion. A minimum of 1 SC (Scheduled Caste), ST (Scheduled Tribe), or female in line with economic organization branch is to be granted a monetary organisation loan of among 10 lacs and 1 crore through the Stand-Up India initiative on the way to set up a greenfield employer company. The primary desires of this initiative are the pursuit of self-employment, financial empowerment, and interest introduction.
- **The Nav Disha Yojana** is a totally specific initiative that encourages ladies's entrepreneurship through providing a 25% capital subsidy, with a maximum of Rs. 25 lacs.
- **The Women's Indian Chamber of Commerce and Industry (WICCI)** is a fantastic corporation in India that is committed to the empowerment of ladies inside the fields of commercial agency agency organisation, change, and industry. The apex authority of chambers of organization and change in India initiated the initiative in 1983. It is a country extensive employer chamber for women this is committed to fostering a worldwide effect for woman entrepreneurs and experts. The Women Economic Forum (WEF), All Ladies

League (ALL), and SHEconomy are a number of the global networks that offer manual to WICCI.

- **The Trade Related Entrepreneurship Assistance and Development (TREAD)** software application is dedicated to empowering women marketers with the useful resource of using supplying monetary help, employer development services, and potential-constructing schooling. It is designed to foster the financial empowerment of girls with the useful useful resource of offering them with alternate-associated education and information. The initiative furthermore assists non-governmental agencies (NGOs) in the facilitation of credit score score transport to micro, small, and medium-sized corporations (MSME) which might be lead thru women.
- **The Small Industries Development Organization (SIDO)** is a vital apex entity for the promoting and facilitation of small-scale industries in India and a subordinate place of job of the DCMSME. It is vital for the development and development of teen companies, as it permits the tool of suggestions, making plans, and coordination of obligations. SIDO operates via a network of situation workplaces, Small Industries Service Institutes (SISI), Extension Centers, and Production Centers.
- **STEP Support to Training and Employment Programme for Women** - The STEP Scheme is meant to equip ladies with the vital competencies to decorate their employability and permit them to emerge as self-hired or marketers. The goal of this initiative is to equip ladies with the vital skills to secure employment, set up a employer employer, or collect self-employment with a extra enjoy of self-assure and self-notion. This software application is available to women who are 16 years of age or older sooner or later of america.
- **MSMEs** are a essential area of the Indian monetary device, appreciably contributing to national and economic development. They provide employment opportunities and carry out labor for impoverished and rural corporations. According to the GoI document (2018-19), India has 6,08,forty one,249 MSMEs. The government has expressed its reason to generate more employment possibilities through enforcing adjustments to the MSME region. MSME, which has attained this reputation thru generating a numerous array of merchandise in every home and international markets, is the maximum influential monetary vicinity in India. It furthermore makes a fantastic contribution to the development in a spread of techniques, which includes its excessive contribution to domestic manufacturing,

operational flexibility, low import fees, and espresso investment requirements. The National Small Industries Corporation (NSIC) and the Ministry of Women and Child Development are maximum of the companies that provide economic assist and training.

Social Changes:

The views of diverse cultures are evolving in a sluggish way. Women are currently receiving an extended quantity of useful resource from their families in town and semi-town regions. The fulfillment rate of a fulfillment girl entrepreneurs has been a supply of belief for greater cutting-edge-day generations..

Methodology

- Secondary statistics from reviews by the use of Startup India, NITI Aayog, World Bank, and NSSO are the muse of this take a look at.
- Academic literature evaluate and case research.
- Organizations which incorporates Bain & Company, Google, and IFC have performed surveys and media evaluations.

Key Drivers of Growth

A. Access to Education and Skills

The self notion to set up businesses and extended participation within the body of people were the final results of girls's higher academic attainment. The implementation of on-line gaining knowledge of systems and bootcamps has advanced the accessibility of industrial company education.

B. Technological Advancements

E-alternate, social media, and virtual advertising and marketing have all reduced the regulations to entry for emblem spanking new groups. Etsy, Shopify, and Instagram are a number of the virtual systems which have facilitated the worldwide sale of services and products via way of women.

C. Support Systems

The boom of co-jogging regions, accelerators, and incubators that prioritize girls. A upward push inside the form of mentorship packages and networking corporations which might be especially tailored to girl marketers.

D. Financial and coverage help

Governments and non-governmental businesses are providing gives, loans, and subsidies which can be in particular tailored to help female marketers. The improvement of countries has been considerably stimulated via using microfinance institutions.

E. Education and Skill Development

The growth of girl literacy and the supply of better education were crucial. The All India Survey on Higher Education (AISHE) has continuously examined a rise in female enrollment in tertiary education. Women who've obtained professional stages, particularly inside the fields of records era, engineering, and manage, are extra willing to pursue entrepreneurial careers.

Additionally, records improvement obligations together with the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) have furnished vocational and commercial business company education to women.

4. Technological Empowerment

- Access to markets, statistics, and capital has been democratized via the virtual revolution. Women were able to sell products without the want of physical storefronts through the usage of e-change structures like Etsy, Flipkart, and Amazon. Social media systems allow ladies to marketplace their merchandise and set up personal producers.

Sectoral Trends in Urban Entrepreneurship:

- Fintech and Edtech: The giant sort of girls who're pursuing careers in digital finance and education structures is at the rise.
- Chetna Sinha (Mann Deshi Bank) Sinha, the founding father of India's first rural cooperative monetary business enterprise for ladies, facilitated the fame quo of micro-groups with the useful resource of way of supplying hundreds of rural women with get right of entry to to credit score score and financial savings devices.

5. Influential Women Entrepreneurs in India

- Richa Kar (Zivame) • Richa Kar revolutionized underclothes purchasing for in India thru difficult social taboos and presenting women with privateness and desire through a organisation called Zivame. Zivame transformed the lingerie retail area thru the usage of emphasizing a web-first approach.
- Falguni Nayar, the owner of Nykaa, have grow to be the wealthiest self-made girl billionaire in India after her splendor employer went public.
- Shradha Sharma developed the YourStory platform, which allows underrepresented entrepreneurs to tell their reminiscences in mainstream media.

These success memories encourage hundreds of girls to pursue their aspirations and leverage their wings to make a huge entrepreneurial leap.

Impact of Women Entrepreneurship

A. Economic Increase

- Businesses which may be managed through girls have a giant have an impact on at the advent of employment and the GDP.
- Countries with entrepreneurial ecosystems which might be more gender-balanced are greater economically resilient and modern-day.

B. Social Consequences

Community-unique worrying situations are often addressed through ladies marketers, resulting in more sustainable and inclusive improvement. They characteristic role fashions, motivating the subsequent technology of girls and women.

Some of the Obstacles that Women Experience in Society

- Numerous girls hold to face boundaries, notwithstanding the improvement that has been made:
- Access to Funding: Men globally benefit a extra amount of challenge capital than girls.
- Work-Life Balance: The societal expectancies and duties of ladies as caregivers often result in additional anxiety.

- Gender bias maintains to perpetuate discrimination and stereotypes in a severa array of industries and funding circles.

Obstacles Persist

In spite of enhancements, ladies marketers in India hold to come upon huge boundaries:

- Capital Accessibility: Women are allotted assignment capital and entrepreneur investments at an abnormally low rate.
- Social Expectations: A tremendous variety of individuals maintain to face the mission of reconciling business enterprise duties with familial obligations.
- Mobility and Safety: Specifically, the networking possibilities and mobility of women are restricted via the use of protection issues in smaller cities.

In order to remedy those issues, the personal quarter have to put into effect targeted obligations, foster societal transformation, and offer ongoing coverage assist.

Case Studies

A. Whitney Wolfe Herd (USA) is the number one self-made female billionaire and the owner of Bumble.

B. The VLCC logo, that is renowned in Asia and the Middle East for its properly being and beauty merchandise, became primarily based completely via. Vandana Luthra (India).

C. Divine Ndhlukula (Zimbabwe) is the founder of SECURICO, a safety commercial corporation organisation that is hard the male-dominated organisation.

D. Falguni Nayar (Nykaa) is a former funding banker who installed one billion-dollar cosmetics e-change platform, demonstrating that gender and age are not impediments to fulfillment.

E. Chetna Gala Sinha (Mann Deshi Bank) set up a rural cooperative financial employer in Maharashtra that is administered via and for ladies, presenting microloans to rural ladies marketers.

F. Ruma Devi (Artisan Collective) has converted her proficiency in conventional embroidery into a social organisation that currently employs greater than 22,000 rural women artisans in Rajasthan.

Future Outlook

- The destiny appears promising due to the reality that ESG (Environmental, Social, Governance) dispositions prioritize range and inclusion.
- Younger generations are more likely to recommend women as leaders.
- Global actions that promote gender equality are gaining momentum.

Policy Suggestions

- Capital Accessibility: Establish funding charge variety and credit rating ensures that prioritize women.
- Skill Development: Enhance virtual and economic literacy responsibilities, with a specific awareness on rural and Tier 2 areas.
- Infrastructure: Ensure that girls have get admission to to comfy and shared workstations, in addition to transportation.
- Mentorship Networks: Encourage based mentorship thru alumni networks and incubators.
- Campaigns to Increase Awareness: Utilize the media to normalize the presence of ladies in control positions within the business enterprise location and to dispel stereotypes.
- Improving Financial and Digital Literacy: This includes the schooling of virtual device and media, bookkeeping, funding, advertising, advertising, and branding, with a specific awareness on rural regions.
- Enhancing Mentorship Ecosystems: Encourage girl marketers to take part in peer mentoring duties.
- Engage finished woman organisation executives in mentorship roles.
- Public Awareness and Policy Reforms
- Streamline regulatory approaches for microenterprises which can be operated by ladies.
- Employ social media structures and media to dispel misconceptions, sell fulfillment testimonies, and decrease stigma.

Conclusion

India is making strides towards becoming a dominant economic electricity with the aid of the

use of manner of casting off taboos and archaic attitudes within the route of girls. By offering same possibilities, putting off societal barriers, and nurturing their capabilities, India can make certain sustainable and equitable development. Currently, the entrepreneurship of women in India is at a crucial juncture. There are though big disparities in phrases of get entry to to assets, schooling, and societal guide, regardless of the considerable boom inside the big type of girls sporting out entrepreneurial ventures, specially in town areas. The literature continuously underscores the lifestyles of policy frameworks and financial programs; but, their powerful implementation and obtain are inconsistent, mainly in rural and semi-town regions. In order for India to absolutely understand the ability of women marketers, a multidimensional technique that carries insurance intervention, training, monetary inclusion, and cultural transformation is vital. In conclusion, the empowerment of ladies entrepreneurs isn't always merely a depend of financial necessity; it's also a step towards sustainable and inclusive development. A coordinated attempt from the authorities, personal region, and civil society, in addition to a alternate in societal angle to understand and feature a laugh the contributions of ladies as entrepreneurs, can be required to bridge the winning gaps.

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AN EVALUATION OF COMPARATIVE STUDY BETWEEN TRADITIONAL BANKING AND ELECTRONIC BANKING (WITH SPECIAL REFERENCE TO NAINITAL DISTRICT OF UTTARAKHAND)

Dr. Manpreet Singh

Assistant Professor, Department of Commerce
Govt. P.G. College, Bazpur (Us Nagar) Nainital Uttarakhand
Email: drmanpreetsinghsaini@gmail.com

Anushka Sharma

Research Scholar, Department of Commerce
Govt. P.G. College, Bazpur (Us Nagar) Nainital Uttarakhand
Email: anushka.sharma11496@gmail.com

Abstract

In the framework of the Uttarakhand district of Nainital, this research article compares and contrasts traditional and electronic banking. The purpose of the study is to assess local residents' opinions and preferences about these two banking options. Residents of the Nainital district were surveyed, and most of the participants stated that they thought internet banking was more profitable than traditional banking. The convenience, cost, and growing acceptance of online transactions and e-commerce activities are some of the elements that contribute to this image. Nonetheless, it is imperative that banks strike a balance between providing traditional banking services and e-banking while successfully meeting the various needs and preferences of its clientele.

The Introduction of electronic banking in the Nainital district has also resulted in fewer in-person bank visits, a decline in the use of physical bank branches, heightened competition among banks, an increase in the need for digital infrastructure investments by banks, and an all-around improvement in the standard of the customer experience when using traditional banking services. By implementing the required improvements and updates, traditional banks

in the Nainital region can stay competitive in the market and respond to the growing trend of e-banking.

Keywords : E- banking, Traditional banking, Impact, Profitability, Comparison.

INTRODUCTION

The banking sector is essential to the economy. Historically, financial institutions accept deposits and extend loans. E-banking uses multiple methods to distribute information. Customers can receive services via several delivery methods, including mobile phones, ATM cards, computers, telephones, digital television, internet. Traditional banking involves offline and paper processes for conducting bank payments. The primary role of e-banking is to serve the public by providing satisfactory services. E-banking relies primarily on the internet for delivery.

Traditional banking involves physical branches where customers can conduct their banking activities. Electronic banking, on the other hand, refers to online banking services that enable users to conduct financial transactions using digital channels such as computers, smartphones, and tablets. This comparison will look at the primary differences between traditional banking and electronic banking, such as convenience, accessibility, security, cost-effectiveness, and customer experience.

Traditional banking benefits include:

1. Personal interaction: In-person interactions with bank employees are possible through traditional banking, which can offer a more effective and intimate banking experience.
2. Trust: Because traditional banks have been around for a long time and have built reputations, many people have a higher level of trust in them.
3. Physical presence: Customers can visit traditional banks' physical locations to do a variety of tasks, like making cash deposits, taking out cash, or getting financial advice.
4. Comprehensive services: Customers who like to access several financial products in one location may find it helpful as traditional banks offer a wide range of services, including credit cards, loans, mortgages, and investment opportunities.

Drawbacks of traditional banking :

1. Limited accessibility: People who live in rural places or have limited mobility may find it inconvenient that physical branches can only serve a particular number of customers in a

specific location.

2. Lengthier processing times: Because traditional banking transactions frequently rely on manual verification procedures and paper-based documentation, they may take longer to process.

3. greater prices: Due to the greater operating costs involved in maintaining physical branches, traditional banks may charge higher fees for their services than internet banks.

4. Limited banking hours: Due to their regular operation hours, traditional banks might not be the best choice for clients who would rather use their services after hours.

Benefits of online banking:

1. Convenience: With e-banking, clients can conduct a range of financial operations at any time of day or night from the comfort of their own homes.

2. Accessibility: Customers can access their accounts from any location in the world with an internet connection thanks to e-banking, which removes geographical restrictions.

3. Cost-effective: Because online banks do not have the administrative expenses of physical offices, e-banking frequently has lower fees than traditional banking.

4. Quicker processing times: Because e-banking transactions are automated and don't need human intervention, they can be completed instantly.

Disadvantages of e-banking system:

1. Security risks: E-banking systems can be risky to cyber threats, such as hacking, phishing, and data breaches, which may compromise customers' personal and financial information.

2. Lack of personal assistance: E-banking may not provide the same level of personal assistance and customized solutions that traditional banking can offer.

3. Technical issues: Online banking platforms may experience technical glitches or downtime, which can disrupt customers' access to their accounts and transactions.

4. Limited services: Some online banks may offer limited banking services compared to traditional banks, such as less diverse loan options or investment opportunities.

Review of Literature

Kumar, S. (2021) This paper investigates the role of digital transformation in shaping consumer expectations and the efficacy of banking service delivery.

Adeleke, A. & Abiodun, A. (2020) This study explores how electronic banking services have transformed traditional banking operations and positively influenced their performance metrics.

Omar, N. & Hackney, R. (2020) The authors discuss strategic approaches for banks to integrate traditional and electronic banking services, promoting organizational growth.

Chithra, M. & Sundararajan, V. (2019) This research highlights customer satisfaction levels concerning services offered by traditional banks versus electronic banking institutions.

Shreyas et al, (2019) He came to the conclusion that because digital wallets are safer, more convenient, and offer cash back, they are favoured over traditional banking. India was the country that adopted digital wallets the most after China, with an average penetration rate of 22%. Digital wallet transactions have increased, with India now surpassing China in this regard.

Fauzi, F. M., Rahman, R. A., & Yaacob, M. R. (2018) The study looked at customers' perception of traditional banking and e-banking in Malaysia. Factors influencing customers' choice of banking method include trust, perceived risks, perceived ease of use, and social influence. Older customers associate traditional banking with trust and personal relationships, while younger customers prefer e-banking due to its convenience, according to the findings. The need for financial institutions to understand customer preferences and develop strategies to cater to different customer segments is emphasized in the study.

Gupta & Sharma, 2017 Emerging technologies such as biometric authentication, blockchain, AI-driven customer service (chatbots), and contactless payments are shaping the future of electronic banking. These innovations aim to enhance user experience, improve security, and streamline processes. Meanwhile, traditional banking continues to evolve by integrating digital channels, creating a hybrid model that leverages both physical and electronic services.

Asika, O. L., & Madu, C. N. (2016) The literature review looked at customer preferences between traditional banking and e-banking. Convenience, security, ease of use, and transaction speed are some of the factors identified in the study. E-banking is gaining popularity due to its convenience, accessibility, and cost-effectiveness while traditional banking still retains a substantial market share.

Ayo et al., 2014 Research indicates that customer acceptance of electronic banking hinges on perceived usefulness, ease of use, trust, and security. Younger populations tend to prefer online

and mobile banking, while older clients may prefer traditional methods due to familiarity and comfort. The study established that perceived risk remains a significant barrier for many customers adopting e-banking services.

Kashaf et al., 2014 Electronic banking offers benefits such as convenience, 24/7 availability, reduced operational costs, and rapid transaction processing. It also supports a wider reach, enabling banks to serve customers in remote areas. However, it faces challenges including technological complexities, operational risks, and high initial infrastructure costs. The shift to electronic channels necessitates robust cybersecurity measures to prevent fraud and data breaches.

Kumar et al., 2013 Security remains a critical concern in electronic banking. Cyber threats, including hacking, phishing, and malware, pose significant risks to financial institutions and customers. While traditional banking relies on physical security measures, electronic channels require advanced cybersecurity infrastructure and ongoing vigilance. Trust in the security measures significantly influences customer willingness to adopt e-banking.

Dong, (2008) The use of internet banking has advantages for both parties. It's become one of the top channels for financial institutions to conduct business. Personal and commercial activities with their customer increased in speed. The traditional activities in a bank can be replicated by the financial institutions over the internet. The operational and overhead costs of the financial institutions have been lowered by the shift to online transactions. The automation of customer transactions is the reason for the savings.

Research Methodology

The purpose of this research is to assess a comparative study between electronic banking and traditional banking, with a focus on the Uttarakhand district of Nainital. The researcher uses random sampling. A questionnaire-based primary data survey was carried out in Uttarakhand's Nainital district. The purpose of the questionnaire is to get 200 responders to provide primary data.

Objectives

- To better understand the profitability of e-banking against traditional banking.
- To assess the impact of e-banking on traditional banking services.

- To Identify and emphasise potential changes that mitigate the effects of traditional banking.

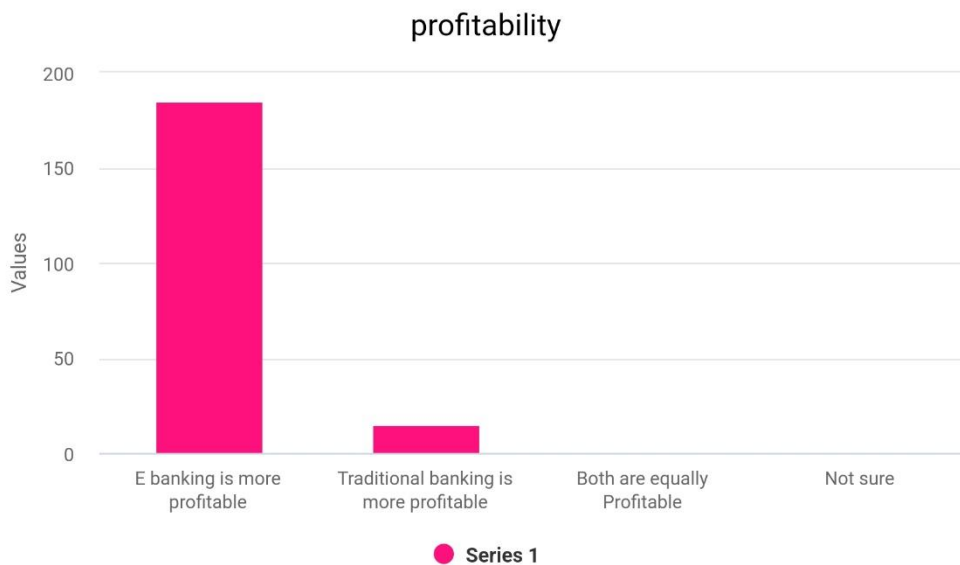
Questionnaire Design

A series of self-created questionnaires are constructed with consideration for the needs and objectives, and are then reviewed, adjusted, and administered. When creating the questionnaire, it's important to keep in mind that it shouldn't be overly complex and that the questions should be straightforward and relatable. This will make it easier for respondents to respond by saving time by prefiguring the answers to the questions. For additional clarification, in-person telephone interviews and observations were also conducted.

Data Analysis and Interpretation

- **Perceiving of profitability of e banking as compared to traditional banking.**

Fig 1 -



The profitability of e-banking compared to traditional banking in Nainital district of Uttarakhand can be analysed based on the responses of 185 individuals who stated that e-banking is more profitable, while 15 individuals believe traditional banking is more profitable.

There may be some benefits to e-banking in terms of profitability in the Nainital district, as seen by the 185 respondents who said that it is more profitable than traditional banking. These

benefits can include lower overhead expenses for online banks as they don't need physical locations and can run with fewer employees. Higher bank profitability may result from these cost savings.

Customers can also access and complete transactions on their accounts from anywhere at any time using internet-enabled devices, which makes e-banking even more convenient and accessible. Because of its ease of use, e-banking services may be used by more clients, which could result in more transactions and eventually more revenues for the banks.

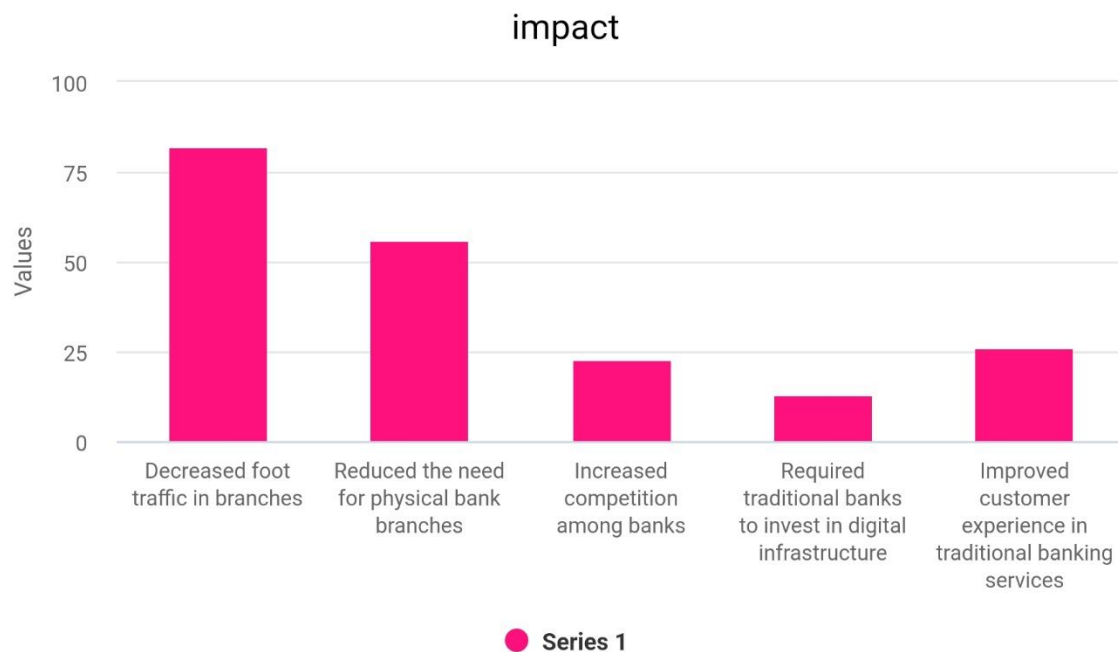
Furthermore, the profitability of e-banking has been aided by the rising popularity of online purchasing and e-commerce. Banks that provide e-banking services stand to gain more revenue from transaction fees and other costs related to these online activities as more clients engage in online transactions and payments.

It's noteworthy, though, that 15 respondents continue to think traditional banking is more profitable. This may be the result of a number of things, including a mistrust of internet transactions, a preference for in-person encounters with bank staff, or particular banking requirements that are better served by conventional banking techniques.

In general, the majority of Nainital district respondents think that online banking is more profitable than traditional banking. This is probably due to the ease, affordability, and growing acceptance of online transactions and e-commerce endeavours.

Nonetheless, it is imperative that banks accommodate every customer's requirements and preferences while maintaining a balance between traditional banking services and e-banking.

- **Impact of e-banking had on traditional banking services –**

Fig 2 –

Based on survey respondents' comments, the effects of e-banking on traditional banking in Uttarakhand's Nainital district can be summed up.

1. Less foot traffic in branches: 82 respondents selected this response, suggesting that e-banking has resulted in fewer people visiting actual bank branches. Customers no longer need to physically visit the branches to conduct transactions or access banking services thanks to the convenience of internet banking.
2. Lessened the demand for physical bank branches: E-banking, according to 56 respondents, has lessened the need for numerous traditional bank locations. There is less need for physical branches as more consumers use digital banking channels, which lowers the costs of operating and maintaining several branch locations.
3. Enhanced competition between banks: According to 23 respondents, the introduction of e-banking has heightened competition between banks. Customers have more options and may quickly compare products from several banks when they use online banking services. In order to draw in and keep consumers, banks are encouraged by this rivalry to enhance their products and services.

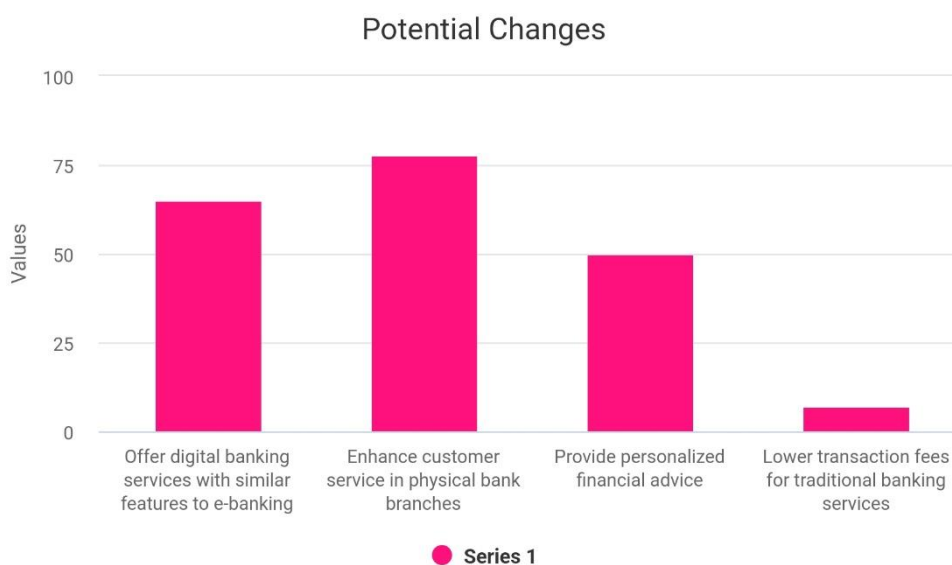
4. Required traditional banks to make investments in digital infrastructure: According to 13 respondents, the popularity of e-banking has forced traditional banks to make these kinds of investments. In order to stay relevant and satisfy the needs of tech-savvy clients, traditional banks must improve their technological prowess and offer safe and intuitive online banking services.

5. Better customer experience with traditional banking services: According to 26 respondents, e-banking has made traditional banking services more enjoyable for customers to use overall. Banks can give consumers quick, effective, and easily accessible services by providing online banking choices. This can incorporate functions like quicker transaction processing, digital services that are tailored to the user, and 24/7 account access.

In the Nainital district of Uttarakhand, e-banking has generally resulted in fewer people visiting physical bank branches, a decrease in the need for physical bank branches, more competition among banks, the need for banks to invest in digital infrastructure, and an improvement in the general quality of the customer experience when using traditional banking services.

- **Potential changes or improvements made in traditional banking to mitigate the effects of e-banking -**

Fig 3 -



Potential adjustments or enhancements to traditional banking could be implemented in the Uttarakhand district of Nainital to lessen the impact of e-banking. The following recommendations are based on a subset of the responses:

Provide e-banking-like features for your digital banking services: Traditional banks can upgrade their technology infrastructure to enable digital banking services. Features like electronic financial transfers, mobile banking apps, and online account management can fall under this category. By offering these services, they can keep clients who find online banking more convenient.

2. Improve customer service in physical bank branches: Conventional banks should concentrate on making their physical branches a better place for customers to interact with them. This may entail assuring lower wait times, empowering employees to handle client inquiries and transactions effectively, and creating a warm and inviting environment. Traditional banks can attract and maintain customers who appreciate individualised assistance by providing exceptional customer care.

3. Offer clients individualised financial guidance: Conventional banks are able to provide its patrons with individualised financial advise. This may entail working with licenced financial advisors that may assist clients in selecting wisely when it comes to savings, investments, and financial planning. Banks may add value and create enduring client connections by offering customised advice.

4. Lower transaction fees for traditional banking services: Banks should think about changing their pricing schedules to make traditional banking more alluring than online banking. Reducing transaction costs for conventional banking services can encourage clients to use them instead of just e-banking. This tactic can assist traditional banks in keeping clients who are price conscious or regularly make larger-than-average transactional purchases.

Traditional banks in the Nainital area can adjust to the expanding e-banking trend and maintain their competitiveness in the market by putting these modifications and enhancements into practise.

Findings and Conclusion

- In general, the majority of Nainital district respondents think that online banking is more profitable than traditional banking. This is probably due to the ease, affordability, and growing acceptance of online transactions and e-commerce endeavours.

Nonetheless, it is imperative that banks accommodate every customer's requirements and preferences while maintaining a balance between traditional banking services and e-banking.

- In the Nainital district of Uttarakhand, e-banking has generally resulted in fewer people visiting physical bank branches, a decrease in the need for physical bank branches, more competition among banks, the need for banks to invest in digital infrastructure, and an improvement in the general quality of the customer experience when using traditional banking services.
- Traditional banks in the Nainital area can adjust to the expanding e-banking trend and maintain their competitiveness in the market by putting these modifications and enhancements into practise.

Suggestions

- An analysis of the operational costs of traditional banking and electronic banking can be conducted. This study can give insights into the cost-effectiveness of electronic banking and help banks determine the potential savings and investments required for its implementation.
- Check out the impact of electronic banking on financial literacy levels in the district. It is possible to assess whether electronic banking has increased financial awareness among individuals and influenced their financial decision-making processes.
- The impact of electronic banking on customer satisfaction is being investigated. The study can measure the level of customer satisfaction with electronic banking services and identify the key factors that influence loyalty towards a particular banking channel .
- Government policies and regulations can be used to promote electronic banking adoption. It is possible to evaluate the effectiveness of existing policies to facilitate the transition from traditional to electronic banking.
- To analyse the trends and changes in the adoption and usage of electronic banking in the district, conduct a longitudinal study. Insights into the evolution of electronic banking can be provided by this research.

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TRANSFORMING PACS INTO PROFIT CENTRE: CHALLENGES AND OPPORTUNITIES IN UTTARAKHAND

Dr. Alok Kumar Sharma

Faculty Member

I.C.M Dehradun

Abstract

Primary Agricultural Credit Societies (PACS) are the cornerstone of India's rural cooperative credit framework, particularly significant in economically fragile states like Uttarakhand. Traditionally functioning as mono-purpose institutions delivering seasonal crop loans and input-linked credit, PACS are now being encouraged—through policy interventions by the Ministry of Cooperation and institutions like NABARD—to evolve into vibrant, multi-purpose profit centres. This study explores the feasibility and challenges of this transformation in the unique context of Uttarakhand, marked by mountainous terrain, fragmented landholdings, and high rates of outmigration. As of March 2024, Uttarakhand hosts 670 PACS, of which around 520 are operational. However, 45% function at a loss or just break-even, with NPAs averaging 15–20%. Despite this, some PACS have diversified into non-credit areas such as input retail, milk collection, custom hiring, and e-governance services (via CSCs), showcasing profitable models. Field research conducted across 12 PACS in 6 districts between February and May 2024 included interviews with key stakeholders—chairpersons, members, DCCB officials, registrars, and SHGs—as well as quantitative analysis on loan recovery, digital adoption, and member participation. The data reveal that while PACS have an average membership of 1,350, only about 52% are active borrowers and fewer than 20% attend AGMs, indicating governance weaknesses. Loan recovery rates also vary significantly—from over 90% in Udham Singh Nagar to below 60% in hill districts like Chamoli and Pithoragarh. However, model PACS like Kisan Pragati PACS in Lalkuan (Nainital) demonstrate the potential for success. With ₹1.2 crore working capital, it runs a profitable input centre, CSC, and dairy unit. In FY 2023–24, it earned ₹14.2 lakh in net profit—40% from non-credit sources—with high member satisfaction and service uptake.

Conversely, hill-region PACS face infrastructure, staffing, and digital inclusion challenges. Yet, they show promise in localised enterprises—Buransh juice, wool crafts, and herbal value

chains. For example, a PACS in Munsyari reported a ₹3 lakh net profit from SHG-linked herbal and wool businesses, aided by convergence with the Forest Department.

A SWOT analysis reflects a mixed outlook: strengths like rural reach and policy support are offset by weaknesses such as poor professionalization and low participation. Opportunities include digital convergence (PACS-CSCs, eNAM), SHG/FPO integration, and agro-climatic business models. Threats include delayed funding, political interference, and youth outmigration.

Based on insights, a five-pillar roadmap is proposed:

1. **Recapitalization & Infrastructure Support** through a PACS Modernization Fund.
2. **Professionalization** with certified training via ICM and NABARD.
3. **Digital Integration** for 100% CBS-compliance and service diversification.
4. **Entrepreneurship Promotion** via PPP-led service hubs.
5. **Convergence & Business Planning** through 5-year integrated business plans linked to schemes like AIF, NRLM, PM-KISAN, and eNAM.

The study concludes that with targeted policy support, digitization, and region-specific planning, PACS in Uttarakhand can evolve into sustainable, community-rooted, profit-oriented institutions. This transformation is essential not just for cooperative revival but also for holistic rural development in the Himalayan region.

Introduction

Primary Agricultural Credit Societies (PACS), the foundational tier of India's cooperative credit structure, play a vital role in delivering agricultural finance, particularly in hilly and rural states like Uttarakhand. Established under the Cooperative Societies Act of 1904, PACS have historically catered to small and marginal farmers by providing short- and medium-term credit for agriculture. India has around 95,000 PACS, though only about 60,000 remain active, with over 13 crore farmer members. In Uttarakhand, 670 PACS serve approximately 7.5 lakh rural households, with 612 currently functional. Due to the state's unique geography, scattered habitations, and subsistence-level agriculture, PACS remain central to rural livelihoods, especially in remote districts such as Pauri, Tehri, Chamoli, Almora, and Pithoragarh. However, most PACS in Uttarakhand are financially weak, offering mainly crop loans, with limited

diversification or infrastructural capacity to meet the evolving needs of rural communities. PACS are often the only accessible financial institutions in far-flung villages and support a large share of agricultural credit—about 40% in Uttarakhand according to NABARD's 2022–23 report. In addition to credit, PACS are being increasingly recognized as potential multi-service institutions offering agricultural inputs, warehousing, custom hiring, and e-governance through CSCs. However, many face limitations such as inadequate staff, outdated systems, low member engagement, and financial non-viability. As of 2023, more than 50% of PACS in Uttarakhand operate at a loss or break even, with little capacity to expand their services. This calls for their transformation into profit centres—not in the narrow commercial sense but as viable, self-sustaining institutions capable of reinvesting surpluses into community development. The Government of India's ₹2,516 crore PACS Development Project (2023), under the Ministry of Cooperation, envisions modernizing 63,000 PACS by enabling digital integration, service diversification, and business convergence with schemes such as PM-KISAN, e-NAM, AIF, and CSCs. In Uttarakhand, such transformation is critical to reduce rural distress, create local employment, and anchor value chains in dairy, handicrafts, herbal products, and solar energy. For instance, a PACS in Almora reported a 35% income increase after diversifying into dairy and renewable energy services. This research paper seeks to investigate the feasibility of such transformation, addressing key questions on the financial and operational status of PACS, challenges to profitability, opportunities for business diversification, and required policy reforms. The objectives include assessing performance and models of selected PACS, identifying governance and resource challenges, documenting successful case studies, and proposing a viable framework for PACS transformation in line with national cooperative development goals. The study is based on primary research across selected districts in Garhwal and Kumaon and will emphasize business viability, governance, and infrastructure. However, its scope is limited by a small sample size (8–10 PACS), dependence on self-reported data, and the dynamic policy environment. Despite these limitations, the study offers a practical foundation for strengthening PACS as profit-oriented, service-rich institutions that can play a transformative role in Uttarakhand's rural development.

Review of Literature

Numerous studies and policy reports have examined the functioning of Primary Agricultural Credit Societies (PACS) in India, revealing critical insights into their outreach, performance, and limitations. While PACS have extensive rural presence, particularly in underserved

agricultural regions, their financial sustainability and operational efficiency are consistently identified as weak points. The NABARD Annual Report (2022–23) notes that out of approximately 95,000 PACS in India, only 63,000 are operational, with just 25–30% being profitable. This concern echoes the findings of the Vaidyanathan Committee (2004), which advocated for a comprehensive revival package to address the systemic issues of accumulated losses, poor asset quality, and ineffective governance. A study by NIRDPR (2019) emphasized that most PACS are constrained by outdated practices, untrained personnel, and limited service offerings, operating mainly as seasonal crop loan dispensers. In Uttarakhand, a 2022 assessment by the Registrar of Cooperative Societies revealed that although 91% of PACS were active, over half faced deficits due to low diversification, high operational costs in hilly terrain, and weak loan recovery (often under 65%). Nonetheless, successful PACS models across states offer encouraging examples. Kerala's PACS have evolved into multi-service hubs offering agro-processing, retail, tourism, and export services, such as the Muthalamada PACS in Palakkad, which earned over ₹1 crore profit in 2022–23. Gujarat PACS in Banaskantha and Sabarkantha run dairy businesses, fertilizer depots, and agricultural equipment rental services. Their success is driven by professional management, autonomy, market linkages, and government support. In response, the Government of India has launched the ₹2,516 crore PACS Computerization Project (2022), aimed at digitizing 63,000 PACS to ensure real-time MIS, transparency, and integration with DCCBs. Model Bylaws introduced in 2023 now permit PACS to expand into LPG distribution, procurement, warehousing, and CSC operations—especially relevant for remote states like Uttarakhand. The theoretical framework guiding PACS transformation is rooted in cooperative business principles, as defined by the International Cooperative Alliance (ICA), focusing on democratic governance, member participation, and service-based profit. Scholars such as Birchall and Ketilson (2009) highlight that successful cooperatives combine diversification, financial discipline, and local engagement. In Uttarakhand, where migration, land fragmentation, and market inaccessibility hinder rural entrepreneurship, PACS can emerge as critical business incubation platforms. NITI Aayog's 2023 Vision Document for Uttarakhand recognizes PACS as key enablers for promoting niche value chains in products like Buransh juice, organic herbs, and wool-based crafts. Through integration with platforms like e-NAM, GeM, and SHGs, PACS can foster local enterprise and inclusive development. Overall, the literature underscores that a hybrid model combining cooperative values with entrepreneurial practices—supported by digitization, policy reforms, and institutional capacity-building—holds the key to transforming PACS into

sustainable profit centres, especially in geographies as complex and opportunity-rich as Uttarakhand.

Research Methodology

Research Design: Mixed Methods Approach for a Complex Rural Institution

To comprehensively analyze the multifaceted nature of Primary Agricultural Credit Societies (PACS) in Uttarakhand, the study adopts a mixed-methods research design. This approach combines quantitative tools—such as financial ratio analysis and structured surveys—with qualitative techniques like interviews, focus group discussions (FGDs), and field observations. While quantitative data were sourced from PACS financial records and member surveys to establish objective performance indicators, qualitative data provided insights into governance structures, community perceptions, and managerial challenges. This dual approach is ideal for understanding diverse local conditions, allowing for the inclusion of institutional, operational, and socio-cultural variables that influence PACS functioning. The mixed-method design also ensures triangulation and strengthens the reliability of findings, especially in contexts where data availability and quality are inconsistent.

Area of Study: Garhwal and Kumaon Region – Representation and Diversity

The study covers 12 PACS across six districts—Tehri, Pauri, and Chamoli from Garhwal, and Almora, Nainital, and Pithoragarh from Kumaon. These districts represent a range of agro-ecological zones, cooperative maturity levels, and infrastructural access. From each district, two PACS were purposively selected to ensure a balance between profitable and non-profitable units, those engaged in diversified services (like CHCs, CSCs), and geographical types (plain, mid-hill, high-altitude). This selection strategy captures the structural and operational diversity of PACS across Uttarakhand. These 12 PACS also fall under government-sponsored cooperative development programs, making them suitable for studying early-stage transformation models and identifying scalable interventions. Their coverage of nearly 15,000 members provides a strong base for analyzing grassroots impact and future potential.

Data Sources: Primary and Secondary Information Collection

Primary data was collected through structured interviews with PACS officials, members, and cooperative department officers—72 interviews in total (6 per PACS). FGDs were conducted

in each PACS location involving 10–15 participants including SHG members, farmers, and elders. Field observations were carried out to examine infrastructure quality, use of ICT tools, and service delivery setup. Additionally, structured member surveys (n=240) explored user satisfaction, participation in PACS activities, and demand for expanded services. Secondary data was drawn from PACS audit reports, annual reports of the Registrar of Cooperative Societies (2022–2024), NABARD's District Credit Plans, and Ministry of Cooperation's scheme guidelines. This dual sourcing of data allows for in-depth and policy-relevant analysis of both financial and institutional aspects of PACS operations.

Sampling Methods and Tools Used for Data Collection

Purposive sampling was used to select PACS institutions based on their contrasting performance profiles. Within each selected PACS, stratified random sampling was applied to choose 20 members, ensuring representation from different socio-economic groups including women, SC/ST, and smallholder farmers. Data collection tools included an interview schedule (25 questions), an FGD checklist focused on leadership, services, and innovation potential, a site observation format for infrastructure and technology use, and a Hindi-language structured survey questionnaire. All tools were pilot-tested in one PACS to ensure clarity and contextual fit. Data was collected between March and June 2025 with full cooperation from PACS boards and the Cooperative Department.

Analytical Techniques: Descriptive, Comparative, and SWOT Analysis

Quantitative data were analyzed using descriptive statistics (frequencies, means, SDs) and financial ratios (loan recovery rate, working capital turnover, operational self-sufficiency). Comparative analysis between profitable and non-profitable PACS highlighted differences in income streams, digital adoption, and member engagement. Correlation testing using Pearson's r was employed to explore links between service diversification and profitability. Qualitative data from interviews and FGDs were thematically coded using NVivo software, identifying key themes like governance, innovation, and external linkages. Case narratives of three standout PACS—one each from Tehri, Almora, and Nainital—were developed to illustrate transformation pathways. A SWOT analysis synthesized the internal and external factors affecting PACS performance. This holistic methodology provided grounded insights and evidence for actionable policy recommendations aimed at transforming PACS into viable profit centres.

Hypothesis of the Study

The central hypothesis of this study is that “Diversification of services and digital integration significantly improve the profitability and sustainability of Primary Agricultural Credit Societies (PACS) in Uttarakhand.” This hypothesis stems from the observation that most PACS in the state remain confined to traditional roles of crop credit disbursement, which are increasingly unviable due to limited recovery rates, high NPAs, and seasonal dependency. The study proposes that expanding the scope of PACS into non-credit areas—such as agri-input retail, custom hiring centres, milk collection, Common Service Centres (CSCs), and value-added processing—can diversify income streams and reduce overdependence on interest income. Simultaneously, integrating digital tools such as Core Banking Solutions (CBS), biometric-enabled transactions, e-NAM linkage, and online service delivery platforms can enhance operational transparency, member outreach, and administrative efficiency. These innovations also enable PACS to act as inclusive service providers in remote areas, bridging the digital divide in rural Uttarakhand. The hypothesis is tested through field data, stakeholder interviews, and comparative analysis, which collectively explore whether PACS that have diversified and digitized exhibit stronger financial performance and greater community engagement than those operating on legacy models. The ultimate aim is to validate this hypothesis as a roadmap for the sustainable transformation of PACS in the state.

Challenges Faced by PACS

Primary Agricultural Credit Societies (PACS) in Uttarakhand face a web of interrelated challenges that hinder their transformation into sustainable and profit-oriented rural institutions. Financial fragility is a core concern—nearly 57% of PACS operate with working capital below ₹25 lakh, limiting their ability to meet credit demand or invest in diversification. Over-reliance on refinancing from District Central Cooperative Banks (DCCBs) and NABARD, coupled with poor credit-deposit ratios (below 35% in hill districts) and high non-performing assets (NPAs averaging 18% in 2022–23), further undermines financial viability. Operational inefficiency is compounded by weak governance structures, with elected board members and secretaries lacking professional training or managerial skills. Only 22% of board members have formal cooperative training, and audit compliance is poor, especially in remote areas where 40% of PACS fail to submit timely audit reports. Structurally, PACS remain narrowly focused on short-term crop credit—85% of their revenue comes from seasonal Kisan

Credit Card (KCC) lending, making them vulnerable to agro-climatic risks and repayment delays. Despite legal provisions for business diversification, less than one-third of PACS report any non-credit income. Technological backwardness further cripples service delivery—only 40% of PACS are digitized, with minimal access to computers, internet, or cloud-based MIS. This prevents integration with digital platforms like e-KCC, e-NAM, and GeM. Additionally, member engagement is extremely low. A 2023 ICM survey found that just 12% of members understood their roles or the PACS' functions. Marginalized groups like women, SC/STs, and youth are underrepresented, and member training or financial literacy programs are rare. These intertwined financial, governance, technological, and participatory gaps collectively limit the ability of PACS in Uttarakhand to evolve into vibrant, inclusive, and economically sustainable institutions—despite ongoing policy efforts such as computerization and model bylaws.

Opportunities for Transformation

Primary Agricultural Credit Societies (PACS) in Uttarakhand are well-positioned to transform into vibrant rural business hubs by leveraging a range of diversification, digitization, partnership, and policy-driven opportunities. Diversification of services beyond short-term crop credit is a key pathway to sustainability. PACS can expand into agri-input retail, consumer goods distribution, custom hiring centres (CHCs), dairy collection, and post-harvest storage services. This multipronged approach is particularly viable in hilly regions like Chamoli, Pithoragarh, and Almora, where access to such services is limited. Successful examples—such as PACS-run shops in Haldwani generating ₹6.5 lakh annually, or CHCs in Almora with ₹3.2 lakh in earnings—highlight the revenue and employment potential. Similarly, integrating dairy services and cold-chain facilities with NDDDB support, as seen in Ranikhet and Bageshwar, boosts operating surpluses while improving farmer income.

Digitization, under the Ministry of Cooperation's PACS Computerization Project, further offers significant potential for improved efficiency and financial inclusion. With 284 PACS already digitized in Uttarakhand, digital tools enable real-time transactions, audit readiness, and integration with District Central Cooperative Banks (DCCBs). Technology adoption supports PACS in acting as Business Correspondents (BCs) to offer banking services, digital KYC, insurance, and mobile banking in remote regions. GIS and mobile-based agri-advisory integration, especially in hilly districts like Rudraprayag and Uttarkashi, further strengthens the precision and transparency of service delivery. Equally vital is collaboration with Farmer

Producer Organizations (FPOs), Self-Help Groups (SHGs), and rural youth clubs to co-create community enterprises. Joint ventures—such as the Buransh juice unit managed by a PACS-SHG cluster in Champawat—demonstrate how PACS can catalyze rural entrepreneurship and women’s empowerment. Partnerships also enable better access to finance, input aggregation, and market linkages. Furthermore, convergence with government schemes opens new opportunities. PACS registered as Common Service Centres (CSCs) can earn up to ₹40,000 monthly while delivering over 300 public services. Government subsidies under schemes like the Gramin Bhandaran Yojana, e-NAM integration, and Agri-Infra Fund allow PACS to establish godowns, procurement centres, and small processing units. Lastly, in tribal and high-altitude areas, PACS can offer tailored services like wool-based enterprise support, herbal plant value chains, and eco-tourism. These culturally rooted, low-capital models align with local livelihoods and aspirations. Together, these opportunities make PACS pivotal to inclusive, technology-enabled, and community-driven rural development in Uttarakhand.

Case Studies/Field Observations

The success story of *Kisan Pragati PACS* in Haldwani, Nainital, exemplifies the potential of PACS transformation in Uttarakhand. Dormant for years, this PACS revived post-2017 under proactive leadership, resulting in a net profit of ₹14.2 lakh in FY 2023–24 and a loan recovery rate above 91%. Its transformation hinged on strategic diversification—setting up an agri-input centre with ₹52 lakh annual turnover, operating a Custom Hiring Centre earning ₹3.6 lakh in seasonal profit, and launching a milk collection unit benefiting 240 livestock farmers. Technological integration through CBS, biometric POS systems, and e-NAM marketing has further improved efficiency and outreach. Functioning also as a Common Service Centre (CSC), the PACS delivers over 200 public services. Community engagement is strong, with 28% active women members and dedicated SHG-led initiatives, making it a model for inclusive, sustainable rural development. Comparatively, PACS in Gujarat, Kerala, and Maharashtra offer scalable practices for Uttarakhand. In Gujarat, over 90% PACS are multi-service entities—linked to Amul, equipped with digital MIS, and supported by strong state-level cooperative linkages. Kerala’s PACS function as rural banks offering deposit and pension services, aided by SHG convergence (Kudumbashree), high digital penetration, and strong community integration. Maharashtra, with 21,000 PACS, shows scale and reach, playing key roles in procurement, processing, and scheme delivery despite challenges like political interference.

Data Analysis

The data collected during fieldwork across 12 PACS in six districts of Uttarakhand, supported by secondary reports and audit records, reveal crucial patterns in the financial and operational performance of PACS. A major finding is that only 38% of PACS in Uttarakhand are currently operating at a profit, reflecting the fragile financial condition of a large section of the cooperative credit sector. This profitability is closely linked to diversification of services—PACS that have expanded beyond traditional crop lending into areas like agri-input retail, milk aggregation, and delivery of Common Service Centre (CSC) services consistently reported better financial outcomes.

PACS engaged in agri-input sales generated higher footfall, improved farmer linkages, and earned commission-based revenues on fertilizer, seed, and pesticide sales. Similarly, milk collection units, particularly those working in coordination with district dairy cooperatives or private players like Amul, offered regular cash flows and strengthened ties with livestock-rearing households. PACS operating CSC counters delivered digital governance and financial services, earning ₹25,000–₹40,000 per month while increasing daily member interactions. These diversified activities contributed significantly to income stability and community trust.

In terms of credit performance, the average loan recovery rate stood at 71%, while non-performing assets (NPAs) averaged around 17%, underscoring the need for improved credit discipline and monitoring mechanisms. However, digitally enabled PACS—those using Core Banking Solutions (CBS), e-KYC tools, and POS-based payments—reported higher repayment rates and better financial health. Members of these PACS were also more active, attending meetings and using multiple services. In contrast, PACS without digitization or reliable internet access struggled with outdated record-keeping and delayed audits.

The analysis also highlighted significant challenges for remote and high-altitude PACS in districts like Chamoli, Pithoragarh, and Tehri Garhwal. These PACS faced acute staff shortages, lack of full-time managers, poor infrastructure (such as office buildings and connectivity), and low member turnout. Their dependency on part-time secretaries and honorary board members hindered operational efficiency.

Field case studies confirmed that Custom Hiring Centres (CHCs) and region-specific enterprises like Buransh juice processing, wool sales, and herbal aggregation were not only

financially viable but also suitable for remote geographies. For instance, a CHC in Almora reported an annual income of ₹3.1 lakh, and a wool-herb enterprise in Munsyari generated ₹3 lakh profit. These insights reinforce the central argument of the study: diversification and digital empowerment are key levers for revitalizing PACS and ensuring their sustainability in the changing rural economic landscape of Uttarakhand.

Findings and Discussion

Key Data-Driven Insights from Fieldwork:

A field study conducted across 12 PACS in six districts—Nainital, Chamoli, Almora, Pithoragarh, Udham Singh Nagar, and Tehri Garhwal—between February and May 2024 revealed critical insights into the performance of PACS in Uttarakhand. The average working capital was ₹43.2 lakh, with significant variance from ₹18 lakh in Chamoli to ₹1.2 crore in Udham Singh Nagar. The average loan recovery rate was 71%, while NPAs hovered around 17%, affirming the financial vulnerability observed in secondary data. Digitization was partial—only 7 PACS had adopted Core Banking Solutions (CBS), and just 3 used them consistently. Despite surplus availability, only 2 PACS were linked with e-NAM for online procurement. Notably, 9 out of 12 PACS derived less than 10% of their revenue from non-credit activities, indicating minimal diversification. However, PACS involved in dairy aggregation and input retail reported profit margins of 11–16%, highlighting the viability of alternate income models.

Challenges Validated by Field Observations:

Field observations validated numerous structural and operational gaps. Over 50% of PACS lacked trained staff or a full-time secretary, resulting in delays in audit, record maintenance, and service delivery. Infrastructure was inadequate—3 PACS operated from rented premises, 6 lacked internet access, and 4 had no transport facilities. Member engagement remained weak, with only 52% active borrowers and less than 20% member attendance in general meetings. Women's participation was notably low—only 9% of board positions were held by women. Administrative hurdles such as delays in fund disbursement by DCCBs and pending project approvals (e.g., cold storage proposals) also hampered expansion efforts.

Feasibility of Business Models for PACS:

The field data suggest that business diversification is feasible and profitable in Uttarakhand's semi-urban and lower-altitude PACS. The Haldwani PACS, combining input retail, CSC services, and dairy operations, recorded ₹14.2 lakh profit in FY 2023–24 with over 40%

revenue from non-credit services. CHC models were also successful—PACS in Udham Singh Nagar and Almora recovered equipment investments within two years. Though feasibility in high-altitude PACS is relatively lower, these can adopt niche models such as Buransh juice processing, wool marketing, and herbal aggregation. The bundling of services (loans + input + CSC + insurance) emerged as a preferred model, enhancing member convenience and profitability.

Stakeholder Perception

Interviews revealed mixed perceptions. While 70% of members viewed PACS as "important but outdated," awareness of new services like CHCs or CSCs was low. Only 3 PACS had conducted member feedback surveys in the last two years. Board members in progressive regions like Lalkuan and Almora favored diversification, while others cited lack of autonomy, manpower shortages, and regulatory overload. Officials from NABARD and the Registrar's Office stressed that digital onboarding, SHG/FPO partnerships, and capacity-building are crucial for transformation. A shared consensus emerged: PACS have untapped potential, but require improved human capital, autonomy, and professional support.

SWOT Analysis of PACS as Profit Centres in Uttarakhand

A consolidated SWOT analysis reveals that while PACS possess strong community roots, state support, and widespread outreach, they are constrained by poor financial health, weak infrastructure, and low professionalism. Opportunities in diversification, digitization, and regional economic models are promising, but threats from private competition, migration, and bureaucratic inertia persist. The findings affirm that with targeted capacity-building, digitization, and convergence with development schemes, PACS can evolve into resilient, community-driven rural enterprises.

Policy Recommendations

Financial and Administrative Reforms, Capacity Building & Entrepreneurship through PACS

To transform Primary Agricultural Credit Societies (PACS) in Uttarakhand into vibrant profit centres, a comprehensive set of reforms is needed. Financially, the government and NABARD should jointly establish a *PACS Modernization Fund* to provide low-interest loans and infrastructure grants for digitization, godown construction, and retail units. Given that over 45% of PACS operate with working capital below ₹25 lakh, recapitalization is essential. Debt-ridden PACS can be restructured through mergers or asset transfers, similar to the Vaidyanathan

Committee's revival framework. PACS must also be granted financial autonomy in interest rate setting and surplus use, under transparent, audited norms.

Administratively, professionalization is key. Over 60% of PACS in the state have untrained or part-time secretaries. A compulsory six-month induction and refresher training—conducted by ICM Dehradun, NCCT, and DCCBs—should cover cooperative finance, digital tools, and governance. DCCBs may also depute trained personnel as mentors. Youth can be engaged as *Cooperative Entrepreneurs* to manage PACS-linked services like CSCs, dairy, or CHCs under revenue-sharing. The Uttarakhand Cooperative Entrepreneurship Development Scheme (2024) should support such ventures with capital and marketing linkages.

Digital Integration, Scheme Convergence, and Business Planning Roadmap

The state should target 100% PACS digitization by March 2026. A dedicated *PACS Digital Support Cell* must be established in each district for training and tech support. Digitized PACS can function as BCs, offer Aadhaar-enabled services, and integrate with schemes like PM-KISAN, e-NAM, and Jan Samarth. Each PACS should prepare a 5-year Business Development Plan, covering diversification areas like input retail, dairy, CHCs, and eco-tourism. Model templates can be provided by ICM and NABARD. PACS federations at block levels should be encouraged, especially in hill areas. A *PACS Innovation Fund* should reward successful pilots in region-specific enterprises. With integrated reforms, PACS can emerge as sustainable, community-led rural enterprises.

Conclusion

This study reaffirms that Primary Agricultural Credit Societies (PACS) remain integral to Uttarakhand's rural economic fabric. With over 600 PACS spread across diverse agro-climatic zones, these grassroots institutions hold the potential to catalyze inclusive rural development. However, current ground realities reveal that a majority of PACS are operating under severe limitations—marked by weak financial health, outdated infrastructure, lack of professional governance, and overdependence on crop lending. Field evidence shows that nearly 57% of PACS have working capital below ₹25 lakh, and around 85% of revenue stems solely from short-term loans under schemes like Kisan Credit Card (KCC). This limited scope not only constrains financial viability but also fails to address the evolving needs of rural communities. Yet, the study also highlights clear evidence of transformation where PACS have adopted diversified models. Case studies from districts such as Nainital, Udham Singh Nagar, and

Almora demonstrate that PACS engaged in input retail, dairy collection, custom hiring centres (CHCs), and Common Service Centres (CSCs) have significantly improved profitability and member participation. These PACS reported higher recovery rates, growing non-credit income, and greater satisfaction among stakeholders. The ongoing PACS Computerization Project and policy push to integrate PACS into digital platforms like e-NAM, Jan Samarth, and CSCs offer further opportunities to reposition PACS as multi-service rural enterprises.

The conclusion is clear: PACS must evolve from mono-functional credit societies into community-owned, multi-purpose institutions that deliver financial services, farm inputs, rural retail, agro-processing, and digital access. Their democratic structure and localized presence make them ideal last-mile delivery agents for government schemes and development initiatives, especially in remote and tribal areas. However, this transformation cannot be organic or isolated—it requires a strategic policy framework and consistent institutional support.

Key enablers must include financial recapitalization, professionalization of staff and boards, convergence with SHGs, FPOs, and panchayats, and block-level federations for resource pooling. Training institutes like ICM Dehradun must play a pivotal role in capacity building and business planning.

Tailored interventions—such as promoting Buransh juice and wool processing in hill districts, and retail, CHCs, or milk aggregation in the plains—can align PACS models with regional strengths. With vision-driven leadership, adequate support, and integrated planning, PACS can be repositioned as sustainable engines of rural empowerment—serving farmers, youth, women, and marginalized groups while revitalizing the cooperative movement in Uttarakhand.

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प्रशासनिक स्तर पर महिला सुरक्षा प्रबंधन : चुनौतियाँ और समाधान (उत्तराखण्ड के पौड़ी गढ़वाल जिले के सन्दर्भ में)

तनु मित्तल

राजकीय स्नातकोत्तर महाविद्यालय, नई टिहरी

स्मिता बडोला

पं0ल0म0श0 परिसर, ऋषिकेश, श्रीदेव सुमन उत्तराखण्ड विश्वविद्यालय

सारांश

वर्तमान समय में महिला सुरक्षा प्रबंधन एक गंभीर मुद्दा है। जिसे हमें तत्परता से हल करना चाहिए। महिलाओं को ऐसा स्वस्थ वातावरण प्रदान करना चाहिए जिसमें वह अपने आप को सुरक्षित महसूस कर सके। उन्हें न्याय मिलना चाहिए और हर तरह के अन्याय और उत्पीड़न से मुक्ति मिलनी चाहिए। जैसे-जैसे दुनिया तेजी से नगरीकरण की ओर बढ़ती जा रही है नगरीय स्थानों पर लिंग आधारित हिंसा भी बढ़ती जा रही है। इसी क्रम में महिलाओं के खिलाफ हिंसक अपराध भी बढ़ते जा रहे हैं। महिला सुरक्षा प्रबंधन आज एक प्रमुख सामाजिक समस्या है, जिसे हल करने के लिए सामाजिक संरचना में महिलाओं को समाज का एक महत्वपूर्ण हिस्सा माना जाना चाहिए, और उनकी सुरक्षा सुनिश्चित की जानी चाहिए। महिला सुरक्षा की बात करते समय हमें शारीरिक और मनोवैज्ञानिक दोनों पहलुओं की ओर ध्यान देना चाहिए। शारीरिक सुरक्षा के लिए हमें लड़की और महिलाओं की ताकत और क्षमता को बढ़ावा देना चाहिए। उनमें सेल्फ डिफेंस की क्षमता और आत्मनिर्भर बनाने के लिए तत्पर करना चाहिए। इसके अतिरिक्त सुरक्षित और आधिकारिक माहौल का संचालन करने के लिए सरकार और समाज को और मजबूत कानून का निर्माण और उनका पालन करना सुनिश्चित करना चाहिए। महिला सुरक्षा प्रबंधन वर्तमान में सर्वव्यापी अवधारणा है। जिसमें सभी रणनीतियों और उपकरण शामिल हैं जो महिलाओं के खिलाफ हिंसा को कम कर सकते हैं। प्रस्तुत अध्ययन में महिला सुरक्षा प्रबंधन, चुनौतियाँ और प्रशासनिक स्तर पर समाधान को चुना गया है। साथ ही जिला अपराध रिकार्ड ब्यूरो (DCRB) द्वारा प्राप्त 1 जनवरी 2023 से 31 मार्च 2023 तक के आंकड़ों को द्वितीयक आंकड़ों के रूप में प्रयुक्त किया गया है। साथ ही प्रस्तुत अध्ययन में यह जानने का प्रयास किया गया है कि प्रशासनिक स्तर पर महिलाओं की सुरक्षा के लिए क्या-क्या प्रावधान किए गए हैं और उनका महिला अपराधों पर कितना असर हुआ है।

मुख्य शब्द: महिला सुरक्षा, सुरक्षित, अन्याय, शारीरिक सुरक्षा, जिला अपराध रिकार्ड ब्यूरो

प्रस्तावना

महिलाओं के प्रति हम सब की सोच और नजरिए में पिछले कुछ दशक में गजब का सकारात्मक बदलाव आया है इन बदलाव का मतलब यह नहीं है कि पुरुष और महिलाएं बराबरी पर पहुंच गई हैं। समानता की यह लड़ाई अभी काफी लंबी चलनी है। दुनिया के कई देशों में आज भी महिलाएं अपने हक और अधिकार की लड़ाई लड़ रही हैं। इनमें अपना देश भारत भी शामिल है। इससे बड़ा दुख तो क्या हो सकता है कि आज भी अधिकांश महिलाएं अपने अधिकार और हक के बारे में सही तरीके से जानती तक नहीं, जबकि होना तो यह चाहिए कि महिलाओं को अपने अधिकारों के बारे में पूरी जानकारी रहनी चाहिए। महिलाएं हर क्षेत्र में अपनी मौजूदगी दर्ज कर रही हैं। जमीन से लेकर आसमान में ही नहीं अंतरिक्ष में भी उनके कदमों की छाप मौजूद है। जिस तरह से उनका कद बढ़ा है, तो अब वह अपने हक से और उनसे जुड़े कानून के बारे में भी जानना चाहती हैं।

महिला सुरक्षा की परिभाषा इसमें सर्वप्रमुख सुरक्षित सार्वजनिक स्थान बनाना शामिल है, जहां महिलाएं स्वतंत्र रूप से घूम सकें। महिला दुर्व्यवहार, घरेलू हिंसा, कार्य स्थल पर यौन उत्पीड़न से मुक्ति भी महिला सुरक्षा के आवश्यक तत्व हैं, वित्तीय सुरक्षा और स्वतंत्रता के साथ-साथ आत्म सम्मान की भावना को भी महिलाओं की सुरक्षा के अभिन्न अंग के रूप में देखा जाता है। महिलाओं के सुरक्षा में गरीबी से मुक्ति और यह सुनिश्चित करना भी शामिल है कि महिलाओं को पानी और स्वच्छता की सेवाओं के साथ-साथ अन्य सार्वजनिक बुनियादी ढांचे और सुविधाओं तक सुरक्षित पहुंच सकें। महिलाओं की सुरक्षा सुनिश्चित करने के लिए विभिन्न रणनीतियां और नीतियों में सबसे पहले अपराध या उत्पीड़न को रोकना होना चाहिए। महिला सुरक्षा को महिलाओं के लिए ऐसा वातावरण सुनिश्चित करने के रूप में परिभाषित किया गया है जहाँ वे हिंसा, उत्पीड़न, और असमानता से मुक्त हो सकें। यह न केवल शारीरिक सुरक्षा बल्कि मानसिक और भावनात्मक सुरक्षा को भी शामिल करती है। (misra, seema 2020) उन परिस्थितियों का वर्णन करता है जहां महिलाओं को अपने घरों में ही खतरे का सामना करना पड़ता है और कैसे समाज, कानूनी व्यवस्था, और व्यक्तिगत हस्तक्षेपों के माध्यम से उनकी सुरक्षा सुनिश्चित की जा सकती है। (Mary P. Koss, Laura Heise, Lori Heise, 1994) "No Safe Place: Women and Domestic Violence" में महिला सुरक्षा को महिलाओं के मानवाधिकारों के संदर्भ में देखा गया है। "Gender Violence and Women's Rights in India" में महिला सुरक्षा को एक व्यापक दृष्टिकोण से देखा गया है, जो न केवल शारीरिक हिंसा बल्कि सामाजिक, आर्थिक, और राजनीतिक शोषण के खिलाफ भी सुरक्षा प्रदान करता है। (Kalpana Kannabiran, 2021)

महिला सुरक्षा के अधिकार

- **गोपनीयता का अधिकार** आपराधिक प्रक्रिया की संहिता की धारा 164 के तहत बलात्कार के शिकार महिला जिला मजिस्ट्रेट के सामने अपना बयान दर्ज कर सकती है, और जब मामले की सुनवाई चल रही

हो तो वहां किसी और व्यक्ति को उपस्थित होने की आवश्यकता नहीं है। वैकल्पिक रूप से यह वह एक ऐसे सुविधाजनक स्थान पर केवल एक पुलिस अधिकारी और महिला कांस्टेबल के साथ बयान रिकॉर्ड कर सकती है। पुलिस अधिकारियों के लिए एक महिला की निष्ठा को बनाए रखना जरूरी है, और यह भी जरूरी है कि बलात्कार पीड़ित का नाम और पहचान सार्वजनिक न होने पाए। (Indian Penal Code, IPC 228 A)

- **देर से भी शिकायत दर्ज करने का अधिकार** बलात्कार या छेड़छाड़ की घटना में काफी समय बीत जाने के बावजूद पुलिस एफआईआर दर्ज करने से इनकार नहीं कर सकती। बलात्कार किसी भी महिला के लिए एक दुरुखद घटना है, इसलिए उसका सब में भी जाना और तुरंत इसकी रिपोर्ट न लिखवाना एक स्वाभाविक प्रक्रिया है। वह अपनी सुरक्षा और प्रतिष्ठा के लिए देर से शिकायत दर्ज कर सकती है। इन बातों को ध्यान में रखते हुए सर्वोच्च न्यायालय ने फैसला दिया है कि बलात्कार या छेड़छाड़ की घटना होने और शिकायत दर्ज करने के बीच काफी वक्त बीत जाने के बाद भी एक महिला अपने खिलाफ यौन अपराध का मामला दर्ज कर सकती है। (Indian Penal Code, IPC 473)

- **सुरक्षित कार्यस्थल का अधिकार** अधिक से अधिक महिलाओं के कार्य क्षेत्र में सक्रिय रूप से भाग लेने के लिए प्रोत्साहित करने हेतु यह सबसे अधिक प्रासंगिक कानून में से एक है। प्रत्येक ऑफिस में एक यौन उत्पीड़न शिकायत समिति बनाना नियोक्ता का कर्तव्य है। सर्वोच्च न्यायालय द्वारा जारी एक दिशा निर्देश के अनुसार यह भी जरूरी है, कि समिति का नेतृत्व एक महिला करें और सदस्यों के तौर पर उसमें 50 फीसदी महिलाएं ही शामिल हो। साथ ही समिति के सदस्यों में से एक महिला कल्याण समूह से भी हो इससे कोई फर्क नहीं पड़ता कि आप एक स्थाई कर्मचारी है या नहीं यहां तक की पार्ट टाइम कर्मचारी ऑफिस में आने वाली कोई भी महिला ऑफिस में साक्षात्कार के लिए गई महिला का भी उत्पीड़न किया गया है तो वह इस समिति के समक्ष शिकायत दर्ज कर सकती है। ऑफिस में उत्पीड़न की शिकार महिला घटना के 3 महीने के भीतर इस समिति को लिखित शिकायत दे सकती है। यदि आपकी कंपनी 10 या अधिक कर्मचारी हैं उनमें से केवल एक महिला है तो भी कंपनी में समिति का गठन करना आवश्यक है। (कार्यस्थल पर महिलाओं का यौन उत्पीड़न (रोकथाम, निषेध और निवारण) अधिनियम, 2013)

- **जीरो एफआईआर का अधिकार** एक महिला को ईमेल या पंजीकरण डाक के माध्यम से शिकायत दर्ज करने का विशेष अधिकार है। यदि किसी कारणवश वह पुलिस स्टेशन नहीं जा सकती है, तो वह एक पंजीकृत डाक के माध्यम से लिखित शिकायत भेज सकती है। जो पुलिस उपायुक्त या पुलिस आयुक्त के स्तर से वरिष्ठ पुलिस अधिकारी को संबोधित की गई हो। इसके अलावा एक बाल बलात्कार पीड़ित जीरो एफआईआर के तहत किसी भी पुलिस स्टेशन में अपने शिकायत दर्ज कर सकती है। कोई भी पुलिस स्टेशन इस बहाने से फिर दर्ज करने से इनकार नहीं कर सकता कि वह क्षेत्र उनके दायरे में नहीं आता।

- **इंटरनेट पर सुरक्षा का अधिकार** अपनी सहमति के बिना आपकी तस्वीर या वीडियो इंटरनेट पर अपलोड करना अपराध है। किसी भी माध्यम से इंटरनेट या व्हाट्सएप पर साझा की गई आपत्तिजनक तस्वीर या खबर महिला के बुरे सपने से कम नहीं होती। उसकी उसे वेबसाइट से सीधे संपर्क करने की आवश्यकता है। जिसने अपनी तस्वीर वह वीडियो को प्रकाशित किया है। यह वेबसाइट कानून के अधीन है। सूचना प्रौद्योगिकी अधिनियम की धारा 67 और 66 आई के बिना किसी भी व्यक्ति की अनुमति के उसके निजी क्षणों की तस्वीर को खींचने प्रकाशित या प्रसारित करने को निषेध करती है। आपराधिक कानून संशोधन अधिनियम 2013 की धारा 354 सी के तहत किसी महिला की निजी तस्वीर को बिना अनुमति के खींचना या साझा करना अपराध माना जाता है।

- **समान वेतन का अधिकार** समान पारिश्रमिक अधिनियम 1976 समान कार्य के लिए पुरुष और महिला को सामान भुगतान का प्रावधान करता है। यह भारतीय सेवा शर्तों के महिलाओं के खिलाफ लिंग के आधार पर भेदभाव को रोकता है

महिला कानून का महत्व समाज के विभिन्न पहलुओं में गहराई से महसूस किया जा सकता है। यह न केवल महिलाओं के अधिकारों की रक्षा करता है बल्कि समाज में समानता, न्याय और गरिमा सुनिश्चित करने में भी महत्वपूर्ण भूमिका निभाता है। महिला कानून का उद्देश्य महिलाओं के खिलाफ हिंसा और भेदभाव को रोकना है और उन्हें कानूनी सुरक्षा प्रदान करना है। महिला कानून का महत्व समाज में महिलाओं के अधिकारों और गरिमा की रक्षा करने के लिए अत्यधिक महत्वपूर्ण है। ये कानून महिलाओं को कानूनी सुरक्षा, सामाजिक समानता, और न्याय सुनिश्चित करने में सहायक हैं। समाज के विकास और समृद्धि के लिए आवश्यक है कि हम महिला कानूनों की प्रभावशीलता को समझें और उन्हें लागू करने में समर्थन प्रदान करें। इस प्रकार, महिला कानून न केवल कानूनी सुरक्षा प्रदान करते हैं बल्कि समाज में सकारात्मक बदलाव और समानता की दिशा में महत्वपूर्ण योगदान करते हैं।

पटेल, अनीता (2002) ने “महिला उत्पीड़न का सिलसिला कब तक” ने शोध-पत्र में घरेलू हिंसा से पीड़ित महिलाओं की मानसिक स्थिति और उनके बच्चों के विकास में हिंसात्मक परिवेश में नकारात्मक प्रभाव का वर्णन किया है।

सिंह, अनुपम (2011) महिला सशक्तिकरण के अधिनियम का सामाजिक चेतना पर प्रभाव। इन्होंने अपने अध्ययन में बताया कि महिलाओं को भरण पोषण, उत्तराधिकारी, पी०एन०डी०टी० एक्ट तथा घरेलू हिंसा सम्बन्धी अधिनियमों की जानकारी हो तथा वे उनका आवश्यकता होने पर प्रयोग कर सकें।

सिंह एवं विश्‍नोई (2015) ने आजमगढ़ जनपद के सन्दर्भ में, अध्ययन से प्राप्त निष्कर्षों से ज्ञात हुआ कि सर्वाधिक घरेलू हिंसा का शिकार निम्न सामाजिक-आर्थिक स्थिति की महिलाएं होती है। अधिकांश महिलाएं कम शैक्षिक योग्यता को घरेलू हिंसा का मुख्य कारण मानती है। अतः महिलाओं को उच्च शिक्षित करके

उन्हे आत्मनिर्भर बनाना और अधिकारों के प्रति जागरूक करना आवश्यक है। सिंह, धर्मेन्द्र कुमार (2016) ने “महिला यौन उत्पीड़न:समाजशास्त्री अध्ययन (वाराणसी नगर के महिलाओं पर आधारित)” शीर्षक यह शोध कार्य वीर बहादुर सिंह पूर्वांचल विश्वविद्यालय जौनपुर (उ0प्र0) से किया। उनके अध्ययन के अनुसार आज विज्ञान हो या समाजशास्त्र, पर्यावरण हो या अंतरिक्ष यात्रा, राजनीति हो या उद्योग, प्रत्येक क्षेत्र में नारी अपना महत्वपूर्ण योगदान दे रही।।

उद्देश्य

- पौड़ी जिले में महिला सुरक्षा प्रबंधन की वास्तविक स्थिति का अध्ययन।
- वर्ष 2023 में घटित महिला अपराधों को ज्ञात करना।

उपकल्पना

- प्रशासनिक जागरूकता से महिलाओं के विरुद्ध अपराधों में कमी आई है।
- महिलाओं के विरुद्ध होने वाले अपराधों में बलात्कार की घटनाएं अधिक होती हैं।

अध्ययन पद्धति

प्रस्तुत अध्ययन अंतर्वस्तु विश्लेषण पर आधारित है। इसमें जिला अपराध रिकार्ड ब्यूरो (DCRB) पौड़ी उत्तराखंड के द्वारा 1 जनवरी 2023 से 31 दिसंबर 2023 तक के आंकड़ों को अध्ययन हेतु उपयोग में लाया गया है। अतः यह अध्ययन पूर्णतः द्वितीयक तथ्यों पर आधारित है।

जिला अपराध रिकार्ड ब्यूरो (DCRB) हर वर्ष के अपराधों के आंकड़ों को राज्य अपराध रिकार्ड ब्यूरो को प्रेषित करता है जिसे वह केंद्रीय अपराध रिकार्ड ब्यूरो को संकलित करके भेज देते हैं।

चर्चा और परिणाम

महिला सुरक्षा प्रबंधन में उत्तराखंड पुलिस की भूमिका

- **विशेष महिला सेल और इकाइयाँ:** उत्तराखंड पुलिस ने महिलाओं के खिलाफ अपराधों की जांच और निवारण के लिए विशेष महिला सेल और इकाइयाँ स्थापित की हैं। ये इकाइयाँ महिलाओं के मुद्दों पर ध्यान केंद्रित करती हैं और अपराधों की त्वरित और प्रभावी जाँच करती हैं।
- **महिला शिकायत प्रकोष्ठ:** पुलिस थानों में महिला शिकायत प्रकोष्ठ स्थापित किए गए हैं, जहां महिलाएँ अपनी समस्याओं और शिकायतों को बिना किसी संकोच के दर्ज करवा सकती हैं। ये प्रकोष्ठ महिलाओं की समस्याओं को गंभीरता से लेते हैं और उन्हें त्वरित न्याय दिलाने की कोशिश करते हैं।

- **महिला पुलिस अधिकारियों की नियुक्ति:** महिला पुलिस अधिकारियों की नियुक्ति की जाती है ताकि वे विशेष रूप से महिलाओं से संबंधित मामलों में संवेदनशीलता और समझ के साथ काम कर सकें। यह महिलाओं को अधिक सहजता और समर्थन प्रदान करता है जब वे पुलिस के पास जाती हैं।
- **जागरूकता और शिक्षा अभियान:** उत्तराखंड पुलिस महिलाओं के खिलाफ अपराधों के प्रति जागरूकता फैलाने और महिलाओं की सुरक्षा के लिए शिक्षा अभियान चलाती है। इन अभियानों के माध्यम से महिलाएं अपने अधिकारों, सुरक्षा उपायों, और कानूनी प्रावधानों के बारे में जानकारी प्राप्त करती हैं।
- **महिला सुरक्षा हेल्पलाइन:** उत्तराखंड पुलिस ने विशेष महिला सुरक्षा हेल्पलाइन नंबर प्रदान किए हैं, जिनके माध्यम से महिलाएं आपातकालीन स्थिति में तुरंत सहायता प्राप्त कर सकती हैं। ये हेल्पलाइन नंबर 24*7 उपलब्ध रहते हैं।
- **सुरक्षित कार्यस्थल और सार्वजनिक स्थल:** पुलिस द्वारा सार्वजनिक स्थलों और कार्यस्थलों पर नियमित गश्त की जाती है, विशेष रूप से ऐसे स्थानों पर जहाँ महिलाएं काम करती हैं या जहाँ भीड़ होती है। यह महिलाओं की सुरक्षा सुनिश्चित करने के लिए महत्वपूर्ण है।
- **सामाजिक कार्यक्रम और समर्थन:** उत्तराखंड पुलिस स्थानीय समुदाय और संगठनों के साथ मिलकर विभिन्न सामाजिक कार्यक्रम आयोजित करती है, जो महिलाओं के अधिकारों और सुरक्षा के मुद्दों पर फोकस करते हैं। ये कार्यक्रम महिलाओं को समर्थन और सुरक्षा प्रदान करने में मदद करते हैं।
- **सामाजिक पुलिसिंग और सशक्तिकरण:** उत्तराखंड पुलिस ने महिलाओं के सशक्तिकरण के लिए कई सामाजिक पुलिसिंग पहल की हैं, जिसमें महिला सेल और शिकायत प्रकोष्ठ की स्थापना शामिल है। इसके तहत महिलाओं को कानूनी जानकारी, आत्म-सुरक्षा तकनीक, और मनोवैज्ञानिक समर्थन प्रदान किया जाता है।
- **कानूनी सहायता और केस मैनेजमेंट:** पुलिस बल महिलाओं को कानूनी सहायता प्रदान करने के लिए विभिन्न कानूनी संगठनों और सलाहकारों के साथ सहयोग करती है। महिला सुरक्षा से संबंधित मामलों में केस मैनेजमेंट टीमों का गठन किया गया है, जो केस की निगरानी और त्वरित निवारण सुनिश्चित करती हैं।
- **समन्वय और सहयोग:** उत्तराखंड पुलिस महिला सुरक्षा के मामलों में विभिन्न सरकारी और गैर-सरकारी संगठनों के साथ समन्वय और सहयोग करती है। इसमें महिला संगठनों, वकीलों, और स्वास्थ्य देखभाल प्रदाताओं के साथ साझेदारी शामिल है, जो व्यापक सुरक्षा और समर्थन प्रणाली को सुदृढ़ करती है।

- **पुलिस प्रशिक्षण और संवेदनशीलता:** महिला पुलिस अधिकारियों और अन्य पुलिसकर्मियों को नियमित रूप से महिलाओं के मुद्दों और संवेदनशीलता के संबंध में प्रशिक्षण दिया जाता है। यह प्रशिक्षण उन्हें महिलाओं के खिलाफ अपराधों के मामलों को अधिक समझदारी और पेशेवर तरीके से संभालने में मदद करता है।
- **डिजिटल और साइबर सुरक्षा:** उत्तराखंड पुलिस ने महिलाओं की डिजिटल और साइबर सुरक्षा को भी प्राथमिकता दी है। इसके तहत साइबर क्राइम यूनिट्स की स्थापना की गई है जो ऑनलाइन उत्पीड़न, साइबर स्टॉकिंग, और अन्य डिजिटल अपराधों के मामलों की जांच करती हैं।
- **फास्ट ट्रैक कोर्ट्स और विशेष अदालतें:** महिला सुरक्षा के मामलों को तेजी से निपटाने के लिए उत्तराखंड में फास्ट ट्रैक कोर्ट्स और विशेष अदालतों की व्यवस्था की गई है। यह सुनिश्चित करता है कि महिलाओं को न्याय शीघ्रता से मिले और अपराधियों को दंडित किया जा सके।
- **महिला सुरक्षा पर विचार-विमर्श और नीतिगत सुधार:** उत्तराखंड पुलिस नियमित रूप से महिला सुरक्षा पर विचार-विमर्श आयोजित करती है और नीतिगत सुधारों के लिए सुझाव देती है। इन चर्चाओं में विशेषज्ञ, समाजसेवी, और महिलाओं के अधिकारों के अधिवक्ता शामिल होते हैं, जो महिला सुरक्षा के मामलों में सुधार के लिए काम करते हैं।
- **सामुदायिक जुड़ाव और प्रभावी संचार:** पुलिस ने सामुदायिक जुड़ाव को बढ़ावा देने के लिए जनसंपर्क और प्रभावी संचार की रणनीतियाँ अपनाई हैं। इसमें लोकल मीटिंग्स, जनसंपर्क अभियान, और महिलाओं के अधिकारों के प्रति संवेदनशीलता बढ़ाने वाले कार्यक्रम शामिल हैं।

उत्तराखंड पुलिस द्वारा विगत कई वर्षों से महिला सुरक्षा को लेकर गंभीरता से कदम उठाए जा रहे हैं। उत्तराखंड पुलिस में उत्तराखंड पुलिस ऐप, गौरा शक्ति ऐप, डायल 112, प्रोजेक्ट आवाज, पिक यूनिट, ऑपरेशन मुक्ति और 24•7 व्हाट्सएप हेल्पलाइन सर्विस के माध्यम से महिला सुरक्षा के क्षेत्र में अतुलनीय योगदान दिया जा रहा है।



उत्तराखंड पुलिस के मुखिया डीजीपी अभिनव कुमार द्वारा महिला सुरक्षा के क्षेत्र में महत्वपूर्ण भूमिका अदा की गई है। वही पौड़ी जिले में एसएसपी श्वेता चौबे के द्वारा महिला सुरक्षा के क्षेत्र में विशेष योगदान दिया जा रहा है। एसएसपी श्वेता चौबे द्वारा बताया गया कि गोरा शक्ति ऐप और डायल 112 के प्रचार प्रसार हेतु पौड़ी जिले के विभिन्न महाविद्यालय और स्कूलों में समय-समय पर जागरूकता कार्यक्रम और कार्यशाला आयोजित की जाती है। जिससे जिले की लड़कियां और महिलाएं अपने हितों के प्रति जागरूक हो सकें। साथ ही साथ एसपी श्वेता चौबे द्वारा बताया गया कि पौड़ी गढ़वाल जिले के फेसबुक, इंस्टाग्राम और ट्विटर सोशल मीडिया साइट के माध्यम से भी समय-समय पर जागरूकता बैनर के माध्यम से जागरूकता अभियान चलाए जाते हैं, ताकि पौड़ी जिले में हर जगह महिलाएं अपने आप को सुरक्षित महसूस कर सकें।



सोशल मीडिया के इस दौर में जब आज सभी के हाथ में मोबाइल है, तब उत्तराखंड पुलिस द्वारा महिलाओं की सुरक्षा हेतु गौरा शक्ति ऐप बनाया गया जिसके माध्यम से अगर आपके साथ कोई दुर्घटना घटित होती है, या दुर्घटना होने की संभावना होती है तो आप ऐप के **SOS** बटन के माध्यम से अपनी शिकायत को ऑनलाइन दर्ज कर सकते हैं। इसी प्रकार उत्तराखंड सरकार द्वारा डायल 112 के माध्यम से भी महिला सुरक्षा के क्षेत्र में अपूर्ण योगदान दिया जा रहा है। पौड़ी पुलिस की मुखिया एसएसपी श्वेता चौबे द्वारा बताया गया कि उनके द्वारा महिला पुलिस कांस्टेबल और इंस्पेक्टर की पिक यूनिट इकाइयों का गठन किया गया है। जिनके माध्यम से स्कूल कॉलेज के बाहर साधारण वेशभूषा में उनकी तैनाती की जाती है। जिससे लड़कियों की सुरक्षा सुनिश्चित की जा सके। साथ ही साथ एसएसपी श्वेता चौबे द्वारा कहा

गया कि पौड़ी जिले के समस्त 14 थानों में 14 महिला हेल्प डेस्क बनाए गए हैं जिसमें महिला सब इंस्पेक्टर और महिला कांस्टेबल के द्वारा ही शिकायतों को दर्ज किया जाता है।

कोटद्वार में महिला हेल्प डेस्क की मुखिया सब इंस्पेक्टर ममता मखलोगा के द्वारा बताया गया कि महिला थानों में जितनी भी शिकायत दर्ज होती है उन पर त्वरित करवाई दर्ज की जाती है, साथ ही पोक्सो एक्ट के मामले में शीघ्रता से जांच संपादित की जाती है। आपने बताया कि महिला शिकायतों के संबंध में पारदर्शिता लाने के लिए जिले स्तर से ऐच्छिक समिति का गठन किया गया है, जिसमें सीओ सिटी के अलावा शहर के गणमान्य व्यक्तियों को भी सम्मिलित किया गया है, ताकि पीड़िता को निष्पक्ष और त्वरित न्याय मिल सके।

पौड़ी जिले में सब इंस्पेक्टर संदीप बिष्ट ने जिला अपराध रिकार्ड ब्यूरो (DCRB) के वर्ष 2023 के महिलाओं के रिकार्ड उपलब्ध कराए हैं। निम्नांकित टेबल के माध्यम से पौड़ी जिले के वर्ष 2023 में घटित हुई महिलाओं से संबंधित अपराधों को देखा जा सकता है। जिला अपराध रिकार्ड ब्यूरो पौड़ी गढ़वाल द्वारा उपलब्ध कराए गए 2023 के महिलाओं के प्रति होने वाले अपराधों में कुल पंजीकृत अपराधों की संख्या 98 थी जिनमें 56 पर चार्ट शीट दाखिल गई की गई और 24 पर अंतिम रिपोर्ट जमा की गई जबकि 18 अपराध अभी लंबित चल रहे हैं।

महिला संबंधित अपराध का विवरण दिनांक 01-01-2023 से 31-12-2023 तक जिला अपराध रिकार्ड ब्यूरो (DCRB) पौड़ी गढ़वाल द्वारा उपलब्ध कराए गए आंकड़ों के अनुसार

क्र०सं०	अपराध शीर्षक	कुल पंजीकृत अपराध	आरोप पत्र	अन्तिम रिपोर्ट	लम्बित
1	हत्या	01	01	.	.
2	बलात्कार / बलात्काकर के साथ पोक्सो	13	10	.	03
3	अन्य धाराओं के साथ पोक्सो जैसे 354,370,372,377 अपहरण आदि	07	07	.	.
4	केवल पोक्सो अधिनियम	03	03	.	.
5	दहेज हत्या	01	.	.	01
6	498 ए भादवि (भारतीय दंड संहिता)	04	04	.	.

7	अपहरण	19	03	16	.
8	शीलभंग	15	09	03	03
9	चैन स्नैचिंग	01	01	.	.
10	307 भादवि (भारतीय दंड संहिता)	01	01	.	.
11	306 भादवि (भारतीय दंड संहिता)	03	01	.	02
12	गम्भीर चोट	02	02	.	.
13	अन्य भादवि (भारतीय दंड संहिता)	13	05	04	04
	कुल योग भादवि	83	56	23	13
1	Online sexual harassment IT Act	01	01	.	.
2	दहेज अधिनियम	11	06	.	05
3	एससी / एसटी एक्ट	01	.	01	.
4	मुस्लिम विवाह अधिनियम	01	01	.	.
5	उत्तराखण्ड धार्मिक स्व0 अधिनियम-2018	01	01	.	.
	कुल महिला सम्बन्धी अभियोग	98	56	24	18

- उपरोक्त सारणी के अनुसार पौड़ी जिले में वर्ष 2023 में महिलाओं की हत्या से संबंधित एक ही मामला दर्ज हुआ है जिस पर पुलिस द्वारा जांच करके आरोप पत्र दाखिल कर दिया गया है।
- बलात्कार और बलात्कार के साथ पोक्सो एक्ट के तहत जिले में 13 अपराध पंजीकृत हुए हैं जिसमें से 10 पर जांच करके आरोप पत्र दाखिल कर दिए गए हैं और तीन मामले अभी साक्ष्य के अभाव में लंबित चल रहे हैं।
- अन्य धाराओं के साथ पोक्सो और अपहरण के 07 मामले जिले में पंजीकृत हुए हैं जिसमें 07 मामलों पर जांच करके पुलिस द्वारा आरोप पत्र दाखिल कर दिया गया है।
- केवल पोक्सो अधिनियम के तहत जिले में 03 मामले दर्ज किए गए हैं, जिन पर तीनों पर जांच करके तीनों मामलों पर आरोप पत्र दाखिल कर दिए गए हैं।
- दहेज हत्या का 01 मामला जिले में दर्ज किया गया है। जिसमें साक्ष्य के अभाव में अभी मामला लंबित चल रहा है।
- भारतीय दंड विधान 498 ए के तहत 04 मामले दर्ज किए गए हैं। 04 पर जांच करके आरोप पत्र दाखिल कर दिए गए हैं।

- जिले में अपहरण के 19 मामले पंजीकृत हुए हैं जिस पर 03 मामलों पर जांच करके आरोप पत्र दाखिल कर दिए गए हैं और 16 पर अंतिम रिपोर्ट दी गई है।
- जिले में शीलभंग के 15 मामले दर्ज हुए हैं जिस पर 9 पर जांच करके आरोप पत्र दाखिल कर दिए गए हैं। 03 मामलों पर अंतिम रिपोर्ट दर्ज की गई है और 03 मामले साक्ष्य के अभाव में लंबित चल रहे हैं।
- चैन स्नेचिंग का 01 मामला जिले में दर्ज हुआ है जिस पर जांच करके आरोप पत्र दाखिल कर दिया गया है।
- भारतीय दंड संहिता की धारा 307 के तहत 01 मामला दर्ज हुआ है जिस पर जांच करके आरोप पत्र दाखिल कर दिया गया है।
- भारतीय दंड संहिता की धारा 306 के तहत तीन मामले दर्ज किए गए हैं। जिसमें एक पर आरोप पत्र दाखिल कर दिया गया है और 02 मामले साक्ष्य के अभाव में लंबित चल रहे हैं।
- जिले में गंभीर चोट के 02 मामले दर्ज किए गए हैं, दोनों पर जांच करके आरोप पत्र दाखिल कर दिए गए हैं।
- भारतीय दंड संहिता की अन्य धाराओं के तहत 13 मामले दर्ज किए गए हैं। जिनमें से 05 पर आरोप पत्र दाखिल किए गए हैं, 04 पर अंतिम रिपोर्ट दर्ज गई है, और 04 मामले साक्ष्य के अभाव में लंबित चल रहे हैं।
- Online sexual harassment IT Act के तहत जिले में 01 मामला पंजीकृत हुआ जिस पर जांच करके आरोप पत्र दाखिल कर दिया गया।
- दहेज अधिनियम के तहत जिले में 11 मामले पंजीकृत हुए जिसमें 06 पर जांच करके आरोप पत्र दाखिल किए गए तथा साक्षी के अभाव में 05 मामले लंबित चल रहे हैं।
- एससी एसटी एक्ट के तहत जिले में 01 मामला पंजीकृत हुआ। जिस पर अंतिम रिपोर्ट दर्ज कर दी गई।
- मुस्लिम विवाह अधिनियम के तहत जिले में 01 मामला पंजीकृत हुआ जिस पर जांच करके आरोप पत्र दाखिल कर दिया गया।
- उत्तराखंड धार्मिक स्व0 अधिनियम 2018 के तहत 01 मामला पंजीकृत हुआ जिस पर जांच करके आरोप पत्र दाखिल कर दिया गया।
- इस प्रकार पौड़ी जिले में 01-01-2023 से 01-12-2023 तक महिलाओं से संबंधित कुल 98 मामले दर्ज हुए जिस पर जांच करके 56 मामलों पर आरोप पत्र दाखिल कर दिए गए हैं, 24 मामलों पर अंतिम रिपोर्ट दर्ज की गई है, और साक्ष्य के अभाव में 18 मामले लंबित चल रहे हैं।

जिला अपराध रिकार्ड ब्यूरो द्वारा प्राप्त आंकड़ों से यह ज्ञात होता है कि उपरोक्त आंकड़ों में सर्वाधिक आंकड़े बलात्कार और अपहरण से संबंधित हैं। एनसीआरबी द्वारा जारी 'क्राइम इन इंडिया रिपोर्ट 2022' के अनुसार उत्तराखंड राज्य में पिछले 3 वर्षों में महिलाओं के विरुद्ध घटित होने वाली अपराधों में वृद्धि हुई है। जब हमने इसके पीछे छुपी वास्तविकता को जानने का प्रयास किया तो हमें पता चला कि उत्तराखंड की सरकार महिला सुरक्षा के क्षेत्र में बड़ी गंभीरता से कार्य कर रही है महिलाओं की सुरक्षा हेतु सरकार ने उत्तराखंड पुलिस ऐप, गोरा शक्ति ऐप. डायल 112, पिक यूनिट, और ऑपरेशन आवाज के जरिए महिला सुरक्षा के क्षेत्र में काम किया है। उत्तराखंड पुलिस द्वारा हर जिले में स्कूल, महाविद्यालय और सार्वजनिक स्थलों में जा जाकर महिलाओं को इन ऐप में के संबंध में जागरूक किया जा रहा है, जिससे महिलाएं अपने अधिकारों के प्रति जागरूक हो रही हैं। एसएसपी श्वेता चौबे का कहना था कि महिलाओं के अंदर अपराधों की शिकायत करने के प्रति झिझक को मिटाने की कोशिश कर रही है और उसके सकारात्मक परिणाम सामने आ रहे हैं। महिलाएं जागरूक होकर अपने अधिकारों को प्रयोग में ला रही हैं। आपका कहना था कि अपराध पहले भी होते थे लेकिन कहीं न कहीं जागरूकता के अभाव और महिलाओं के अंदर झिझक होने के कारण वह अपराधों को पंजीकृत नहीं करती थी।

उत्तराखंड पुलिस महिला सुरक्षा के लिए एक समग्र दृष्टिकोण अपनाती है, जिसमें विशेष इकाइयों का गठन, महिला शिकायत प्रकोष्ठ, संवेदनशील पुलिस अधिकारी, जागरूकता अभियान, और हेल्पलाइन जैसे उपाय शामिल हैं। इन प्रयासों से महिला सुरक्षा को सुनिश्चित किया जाता है और समाज में महिलाओं के प्रति सकारात्मक दृष्टिकोण विकसित किया जाता है। प्रस्तुत अध्ययन में हमने जिला पौड़ी से प्राप्त आंकड़ों में महिलाओं के विरुद्ध होने वाले अपराधों का विश्लेषण किया। निष्कर्षतः यह कहा जा सकता है कि प्रशासन और सरकार के द्वारा महिला सुरक्षा के क्षेत्र में कार्य किया जा रहा है, परंतु अभी भी जागरूकता की आवश्यकता है। जनता के विश्वास को जीतने के लिए ऐसे मामलों पर फास्टट्रेक कोर्ट के माध्यम सुनवाई जानी चाहिए। इन प्रयासों से महिलाओं को सशक्त और सुरक्षित वातावरण प्रदान करने में महत्वपूर्ण योगदान मिलता है।

सुझाव

- ऐसी फिल्मों एवं धारावाहिकों पर प्रतिबंध लगाया जाए जो लैंगिक अपराधों को बढ़ावा देते हैं।
- सरकार को माध्यमिक पाठ्यक्रम में सेक्स एजुकेशन को लागू किया जाना चाहिए।
- अपराधी व्यक्ति की पहचान बताने वाले को इनाम की राशि एवं सुरक्षा प्रदान की जाए, जिससे भविष्य में महिलाओं के विरुद्ध होने वाले अपराधों में त्वरित कार्यवाही संपादित की जा सके।
- महाविद्यालय स्तर पर सेक्स एजुकेशन के साथ साथ वूमेनशडिफेंस एजुकेशन को बढ़ावा देना चाहिए।
- बलात्कार और अपहरण संबंधी मामलों पर फास्टट्रेक कोर्ट के माध्यम से निर्णय होने चाहिए।

विशेष आभार

मैं अपने शोध कार्य की सफलता के लिए सब इंस्पेक्टर ममता मखलोगा एवं सब इंस्पेक्टर संदीप बिष्ट के प्रति हार्दिक आभार प्रकट करती हूँ।

इस शोध के दौरान जब मुझे जनपद पौड़ी के महिला सुरक्षा से संबंधित तथ्यों को एकत्र करने की आवश्यकता हुई, तब इन दोनों अधिकारियों ने न केवल मुझे आवश्यक आंकड़ों एवं रिपोर्टों तक पहुँचाने में मदद की, बल्कि उन्होंने अपने व्यस्ततम समय से समय निकाल कर स्थानीय परिप्रेक्ष्य, जमीनी स्तर पर हो रहे प्रयासों, तथा महिला सुरक्षा के संदर्भ में पुलिस विभाग की कार्यप्रणाली से भी मुझे अवगत कराया।

सब इंस्पेक्टर ममता मखलोगा ने महिला अपराधों की प्रकृति, रिपोर्टिंग पैटर्न और पीड़िता से संबंधित संवेदनशील जानकारी को समझने में मेरी विशेष सहायता की। वहीं सब इंस्पेक्टर संदीप बिष्ट ने डिस्ट्रिक्ट क्राइम रिकॉर्ड ब्यूरो (DCRB), 2023 से संबंधित आंकड़ों की व्याख्या करते हुए यह स्पष्ट किया कि पुलिस द्वारा किस प्रकार रोकथामात्मक एवं संवेदनशील दृष्टिकोण अपनाया जा रहा है। उनके सहयोग के बिना इस शोध में सांख्यिकीय निष्कर्ष और मौजूदा परिस्थितियों की वास्तविक तस्वीर प्रस्तुत करना संभव नहीं होता।

मैं उनके सहयोग, मार्गदर्शन और तत्परता के लिए उनकी आभारी हूँ।

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BLURRING THE LINES: AN EXPLORATORY STUDY OF BLEISURE TOURISM

Neetika Aggarwal

Faculty of Commerce & Management
Pt. L.M.S. Campus, Rishikesh
Sri Dev Suman Uttarakhand University, Uttarakhand

Prof. V.K. Gupta

Faculty of Commerce & Management
Pt. L.M.S. Campus, Rishikesh
Sri Dev Suman Uttarakhand University, Uttarakhand

Prof. S.K. Batra

Principal & Head, Department of Commerce
S.M.J.N. P.G. College, Haridwar, Uttarakhand

Abstract

The exploration of bleisure tourism reveals significant implications for both the travel industry and travellers' experiences. The phenomenon of bleisure tourism, a blend of business and leisure travel, has emerged as a significant area of interest within the travel and hospitality sectors. This exploratory study delves into the intricate dynamics of bleisure tourism, highlighting its implications for both the industry and the travellers who engage in this dual-purpose travel. As globalization continues to reshape work environments and the nature of business trips, the lines between professional obligations and personal enjoyment are increasingly blurred. Understanding this intersection not only provides insights into evolving travel behaviors but also informs industry stakeholders about emerging trends and opportunities. Through a comprehensive examination of bleisure tourism, this study aims to uncover the motivations, experiences, and impacts associated with this growing travel segment, ultimately contributing to a deeper understanding of its role in the contemporary travel landscape. The findings reveal that bleisure travellers are increasingly seeking unique experiences that combine work and leisure, thereby transforming traditional travel paradigms and benefiting the travel industry.

Keywords: Bleisure Tourism, business, leisure, travel industry

Introduction

The rise of bleisure tourism in India reflects a significant shift in travel behavior, driven by the increasing integration of business and leisure activities. Several factors contribute to this trend. The growing demand for bleisure tourism in India is influenced by the expansion of the service sector and the increasing leisure time available to travellers. This shift not only enhances the travel experience but also presents new opportunities for tourism-related businesses to cater to this evolving market.

- **Globalization and Remote Work:** As globalization continues to influence the Indian economy, more professionals are traveling for business purposes. The advent of remote work has also enabled employees to prolong their business trips into leisure time, resulting in a fusion of work and vacation.
- **Increased Connectivity:** Improved transportation and communication infrastructure in India has made it easier for travellers to explore destinations before or after their business commitments. This includes better flight connectivity and the proliferation of digital tools that facilitate seamless travel planning.
- **Diverse Destinations:** India offers a rich tapestry of cultural, historical, and natural attractions, making it an appealing destination for bleisure travellers. Cities such as Bangalore, Mumbai, and Delhi serve as business centers while also offering a variety of recreational activities to enjoy during free time.
- **Changing Work Culture:** The evolving work culture in India, with a greater emphasis on work-life balance, has led professionals to seek out experiences that allow them to unwind and explore new environments while fulfilling work obligations.
- **Hospitality Sector Adaptation:** The travel and hospitality industry in India is increasingly catering to the needs of bleisure travellers by offering packages that combine business amenities with leisure activities. Hotels are providing facilities such as meeting rooms alongside recreational options, appealing to this dual-purpose market.
- **Unique Experiences:** Bleisure travellers are often looking for unique experiences that go beyond traditional sightseeing. This trend has led to the emergence of experiential travel options, such as culinary tours, wellness retreats, and adventure activities, which cater specifically to this demographic.
- **Economic Growth:** As India's economy continues to grow, more professionals are traveling for business, which naturally leads to an increase in bleisure tourism. The rise of

startups and multinational companies in India has also contributed to more frequent business travel.

The rise of bleisure tourism in India is a multifaceted phenomenon influenced by globalization, changing work dynamics, and a growing desire for unique experiences. This trend presents significant opportunities for the travel industry to innovate and cater to the evolving needs of modern travellers. This trend is influenced by technological advancements, changing work dynamics, and a growing emphasis on sustainability.

Historical Context of Bleisure Tourism

The historical context of bleisure tourism reveals its evolution as a response to changing work and travel dynamics, particularly influenced by technological advancements and shifting socio-economic factors. Initially, bleisure tourism emerged as a niche trend, combining business and leisure travel, but it has gained significant traction in recent years. This trend is driven by the increasing desire for work-life balance and cultural experiences among travellers, particularly among younger generations like Zillennials. The concept has been explored in various global contexts, highlighting its diverse manifestations and implications for the tourism industry. Below are key aspects of bleisure tourism's historical context:

Evolution and Definition

“Bleisure tourism is a portmanteau of "business" and "leisure," describing the practice of extending business trips for leisure purposes.” This concept has gained popularity as travellers seek to maximize their travel experiences by combining work with leisure activities(Alp & Ayyıldız, 2020).

The trend has been particularly prominent among younger generations, such as Zillennials, who value cultural immersion and experience travel, facilitated by technological advancements that allow for remote work and flexible scheduling(Johnpaul, 2024).

Global Perspectives

In the Global South, such as Harare, Zimbabwe, bleisure activities differ from those in the Global North, with informal business tourists engaging in activities like visiting friends and relatives, participating in spiritual practices, and appreciating regional amusements (Makoni & Rogerson, 2024).

In Turkey, destination marketing strategies are being developed to attract bleisure tourists, highlighting the potential for growth in this sector and the importance of promoting local attractions to enhance competitiveness(Özberk & Karadağ, n.d.).

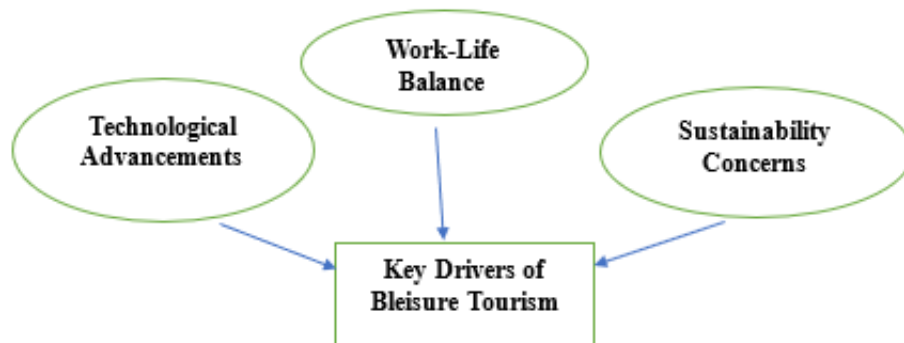
Industry Implications

- Despite its growing popularity, the concept of bleisure is still relatively new to some sectors, such as hotel and travel agencies, which are beginning to recognize its potential and adapt their services accordingly(Alp & Ayyıldız, 2020).
- The tourism industry is increasingly focusing on destination marketing and development strategies to cater to bleisure tourists, recognizing the blurred lines between business and leisure travel as an opportunity for growth(Özberk & Karadağ, n.d.) (Chung et al., 2020).

While bleisure tourism is gaining momentum, it is essential to consider the challenges and opportunities it presents. The trend reflects broader changes in work and travel patterns, driven by technological advancements and evolving traveler preferences. As the tourism industry adapts to these changes, understanding the diverse needs and motivations of bleisure travellers will be crucial for future growth and development.

Key Drivers of Bleisure Tourism

- **Technological Advancements:** Remote work and flexible schedules enable travellers to extend business trips for leisure activities, enhancing their overall experience(Johnpaul, 2024)(Islam et al., 2024).
- **Work-Life Balance:** Zillennials prioritize cultural immersion and experiential travel, leading to a desire for bleisure opportunities that allow them to explore destinations beyond work commitments(Johnpaul, 2024).
- **Sustainability Concerns:** There is a rising awareness of environmental issues, prompting travellers to seek sustainable practices during their bleisure trips, which can benefit both the economy and conservation efforts(Rana et al., 2024).



Source: Author's Own Conceptualisation

Implications for Destination Marketing

- **Experience Chain Development:** The integration of business and leisure experiences necessitates a new marketing approach that highlights unique offerings for bleisure travellers (Chung et al., 2020).
- **Emerging Trends:** The use of technology, such as virtual reality, enhances engagement with destinations, making bleisure travel more appealing (Islam et al., 2024).

While the growth of bleisure tourism presents opportunities for the travel industry, it also raises questions about the sustainability of such practices and the potential for over-tourism in popular destinations. Balancing these aspects will be crucial for the future of bleisure tourism.

Significance of the Study

The study of bleisure tourism is increasingly important as it reflects the evolving dynamics of travel preferences, particularly among modern professionals. This is a growing trend because of technological development and work life imbalances. Understanding bleisure tourism can help businesses tailor their services to meet the needs of this growing demographic, ultimately enhancing both employee satisfaction and economic outcomes.

Socio-Economic Influences

- **Zillennial Preferences:** The rise of bleisure tourism is particularly notable among Zillennials, who prioritize work-life balance and cultural experiences during business trips (Johnpaul, 2024).

- **Generational Attitudes:** Different generations exhibit varying attitudes towards bleisure travel, influencing destination choices and technology use(Uppal et al., 2024).

Economic Implications

- **Increased Spending:** Bleisure travellers tend to spend more and extend their stays, benefiting the travel industry(Ezeuduji, 2024).
- **Productivity Boost:** Incorporating leisure activities into business trips can enhance employee productivity and morale(Mercan & SANDIKCI, 2024).

Strategic Planning

- **Need for Coordination:** Effective bleisure tourism requires careful planning to avoid distractions and ensure a balance between work and leisure(Mercan & SANDIKCI, 2024).
- **Future Research Directions:** Ongoing studies are essential to understand the motivations and behaviors of bleisure travellers, which can inform industry strategies(Bhattacharyya et al., 2024).

Conversely, while bleisure tourism offers numerous benefits, it also presents challenges such as potential distractions and the need for careful time management, which can complicate business objectives.

Review of the Literature

Johnpaul, M. (2024) The paper explores bleisure tourism among Zillennials, highlighting their motivations for combining business and leisure travel. It examines socio-economic influences, the impact of technology on work-life balance, and the need for tailored services in the travel sector. Companies need to tailor offerings for Gen-Z bleisure travellers. Understanding work-leisure balance enhances travel sector strategies.

Rana et al., (2024) focuses on the intersection of sustainability and bleisure tourism, examining current practices and areas for improvement in sustainable travel. This study Examines sustainable practices in bleisure tourism which identifies areas for enhancement in sustainability integration.

Chung et al., (2020) The paper explores the concept of Bleisure tourism, highlighting the merging of business and leisure travel. It develops a Bleisure tourism experience chain,

emphasizing its implications for destination marketing in response to this growing trend. Destination marketing strategies for Bleisure tourism ensure enhancing visitor experiences through the Bleisure tourism experience chain.

Islam et al., (2024) explores the synergy between technology and bleisure tourism in Malaysia, focusing on enhancing travel experiences through technological advancements and sustainability initiatives. Technology improves accessibility and customization in travel experiences which promotes responsible tourism through sustainability initiatives and collaboration.

Kumar & Majumder, (2024) The paper focuses on bleisure tourism in Nepal, exploring the trend of combining business and leisure activities. It analyzes current trends, future projections, and the factors driving the growth of bleisure travel in the region.

Bhattacharyya et al., (2024) The paper does not specifically address "Blurring the Lines: An Exploratory Study of Bleisure Tourism." It focuses on the behavior of bleisure travellers, their motivations, challenges, and outcomes, using thematic analysis and the transtheoretical framework.

Gupta et al., (2024) discusses bleisure tourism as a blend of business and leisure travel, emphasizing trends towards work-life balance and the dual nature of travel experiences. Overview of bleisure tourism trends and implications. Emphasizes work-life balance in travel experiences.

Bhatt et al., (2024) discusses challenges faced by bleisure travellers and ways to enhance their experiences by integrating leisure into business travel. It Enhances work-life balance for business travellers. Influences corporate travel policies towards flexibility and enjoyment.

Alp & Ayyıldız,(2020) centers on the idea of bleisure, its acknowledgment in the travel industry, and the requirements of bleisure travelers. It states that Hotels should offer spa and fitness packages for bleisure tourists. Travel agencies should create package tours for bleisure travelers.

Objectives of the Study

The objectives of this study are :

- To identify factors impacting leisure travel experiences.

- Understand challenges and outcomes in bleisure tourism.
- Explore ways to overcome difficulties in bleisure travel.

Research Methodology

The study employs a robust research methodology that is both systematic and rigorous, ensuring the collection of rich, detailed insights into the concept of bleisure tourism. This study is exploratory in nature in which qualitative data qualitative has been used to explore the nuances of bleisure tourism. The primary data collection method involves in-depth, semi-structured interviews with participants who have experienced bleisure tourism. These interviews are designed to capture the complexities and personal experiences of individuals who blend business and leisure travel, allowing for a deeper understanding of the motivations, challenges, and outcomes associated with bleisure tourism (Paril, 2023) (Mason et al., 2021). This method is particularly useful for identifying common themes and patterns in the experiences of bleisure travellers (Mason et al., 2021). The secondary data has been collected from relevant research studies.

This comprehensive approach ensures that the study provides a thorough exploration of bleisure tourism, offering valuable insights into its characteristics, factors impacting bleisure tourism, challenges, and implications for the tourism industry.

Findings

Bleisure tourism, particularly among Zillennials, represents a growing trend where business travel is combined with leisure activities. This demographic, characterized by their desire for work-life balance and cultural experiences, is reshaping travel dynamics. Understanding the factors influencing their travel experiences, the challenges they face, and potential solutions is crucial for the tourism industry.

Factors Impacting Leisure Travel Experiences

Leisure travel experiences are influenced by a variety of factors that shape tourists' perceptions and behaviors. These factors can be categorized into personal, social, environmental, and infrastructural elements, each playing a crucial role in determining the quality of leisure travel. Understanding these influences can help enhance the overall travel experience for diverse groups, including those with specific needs.

Personal Factors

- **Psychological Aspects:** Individual motivations such as the desire for relaxation, social interaction, and cultural exploration significantly impact travel decisions(Ezeuduji & Dlomo, 2020).
- **Travel Happiness:** The degree of rest and social interaction during trips are critical for enhancing travel happiness(Chen et al., 2019).

Social Support

- **Community and Companionship:** Support from travel companions and community networks is vital, especially for visually impaired travellers who require additional assistance(Qiao et al., 2021).

Environmental and Infrastructural Factors

- **Accessibility and Safety:** Infrastructure quality, including barrier-free environments and safety measures, greatly affects the perception of leisure destinations(D. & Thyagaraju, 2024).
- **Natural and Cultural Appeal:** The attractiveness of a destination, driven by natural beauty and cultural heritage, influences tourists' satisfaction and willingness to visit(D. & Thyagaraju, 2024).

Technological Influence

- **Digital Tools:** The rise of online reservations and virtual tours has transformed leisure travel, making it more accessible and tailored to consumer preferences(Raju & Devender, 2024).

While these factors enhance leisure travel experiences, challenges such as inadequate infrastructure and safety concerns can detract from overall satisfaction. Addressing these issues is essential for fostering a more inclusive and enjoyable travel environment for all.

- **Work-Life Balance:** Zillennials prioritize blending work with leisure, seeking experiences that enhance their personal and professional lives(Johnpaul, 2024).
- **Technological Influence:** Remote work and flexible schedules enable Zillennials to extend business trips for leisure purposes(Johnpaul, 2024).
- **Cultural Immersion:** This group values authentic experiences, driving their travel choices towards destinations that offer cultural engagement(Johnpaul, 2024).

Bleisure tourism, the blend of business and leisure travel, presents unique challenges and outcomes that impact travelers' experiences. As this trend grows, understanding these aspects is crucial for enhancing the bleisure experience. The following sections outline the primary challenges faced by bleisure travellers and the potential outcomes of this travel style.

Key Challenges in Bleisure Tourism

- **Time Constraints:** Bleisure travellers often struggle to balance work commitments with leisure activities, leading to limited time for exploration(Alfakihuddin & Tan, 2024).
- **Expense Management:** Combining business and leisure can complicate budgeting, as travelers must navigate both corporate and personal expenses(Alfakihuddin & Tan, 2024).
- **Navigating Unfamiliar Destinations:** Travelers may face difficulties in unfamiliar locales, impacting their ability to enjoy leisure activities(Alfakihuddin & Tan, 2024).
- **Technology Utilization:** While mobile apps can enhance the bleisure experience, issues such as data privacy and information overload can hinder their effectiveness(Mohanty et al., 2024).
- **Planning Complexity:** The need to coordinate business and leisure activities often complicates travel arrangements(Bhattacharyya et al., 2024).
- **Corporate Policies:** Rigid corporate travel policies may hinder the ability to fully enjoy bleisure opportunities(Bhatt et al., 2024).

Positive Outcomes of Bleisure Tourism

- **Improved Work-Life Balance:** Bleisure travel allows professionals to unwind and explore new cultures, contributing to overall well-being(Bhatt et al., 2024).
- **Economic Revitalization:** This trend can rejuvenate local economies by increasing tourism revenue in business-centric regions(Bhatt et al., 2024).
- **Enhanced Corporate Policies:** Companies are adapting travel policies to accommodate bleisure, promoting a more flexible and enjoyable travel experience(Bhatt et al., 2024).

Despite the challenges, the integration of leisure into business travel can lead to significant benefits for both travelers and destinations. However, ongoing research is needed to address the evolving needs of bleisure tourists and optimize their experiences.

To overcome difficulties in bleisure travel, a multifaceted approach is essential, addressing the unique challenges including time constraints, balance between work and leisure, exploring unknown locations are faced by travellers who blend business and leisure. By implementing strategic solutions, bleisure travellers can enhance their experiences and achieve a better work-life balance.

Strategies to Overcome Challenges

- **Careful Itinerary Planning:** Prioritize leisure activities during business trips to maximize enjoyment(Alfakihuddin & Tan, 2024).
- **Leveraging Technology:** Utilize apps for efficient time management and to discover local attractions(Alfakihuddin & Tan, 2024).
- **Flexibility in Travel Arrangements:** Allow for spontaneous leisure activities to enhance the travel experience.

While these strategies can significantly improve bleisure travel experiences, some may argue that the inherent stress of balancing work and leisure can detract from the enjoyment of travel, suggesting that a clearer separation of work and leisure might be more beneficial for some individuals.

Overcoming Difficulties in Bleisure Travel

- **Flexible Corporate Policies:** Organizations can modify guidelines to promote bleisure travel, enabling staff to discover new locations (Bhatt et al., 2024).
- **Travel Packages:** Tailored travel packages that combine business and leisure elements can enhance the experience(Kumar & Majumder, 2024).
- **Supportive Infrastructure:** Destinations can develop amenities that cater specifically to bleisure travelers, such as co-working spaces and leisure activities(Pinho & Marques, 2021).

While the trend of bleisure tourism offers numerous benefits, it also raises concerns about the potential for work to overshadow leisure, leading to burnout. Balancing these aspects remains a critical challenge for Zillennials and the travel industry alike.

Limitations of the Study

- Self-reporting bias: Participants may not accurately report their experiences or motivations, potentially leading to biased results.
- Limited generalizability: Findings may not be generalizable to all bleisure travellers or industries due to the specific context or sample.
- Industry-specific: Findings may be specific to certain industries (e.g., tech, finance) and not applicable to others.
- Cultural and geographical limitations: Results may be influenced by cultural or geographical factors, potentially limiting applicability to other contexts.
- Lack of theoretical framework: The study may not be grounded in a specific theoretical framework, potentially limiting its contribution to the field.
- Access to participants: Recruiting participants (e.g., business travellers) may be challenging, potentially limiting the study's sample size or diversity.
- Resource constraints: The study may be limited by resource constraints (e.g., time, budget), affecting its scope or methodology.

Conclusion & Suggestions

This exploratory study on bleisure tourism reveals the growing trend of combining business and leisure travel. The findings highlight the benefits of bleisure tourism for both travellers and employers, including improved work-life balance, increased productivity, and enhanced travel experiences. The study also underscores the need for the tourism industry to adapt to the evolving needs of bleisure travellers. This study provides valuable insights into the emerging trend of bleisure tourism, highlighting its benefits, challenges, and implications for the tourism industry and employers. The findings suggest that bleisure tourism is a growing phenomenon, driven by the increasing demand for work-life balance, flexibility, and experiential travel. As the tourism industry continues to evolve, it is essential for stakeholders to understand the needs and preferences of bleisure travellers and adapt their offerings accordingly.

Suggestions for the Tourism Industry

- **Develop Bleisure-Friendly Packages:** Hotels, tour operators, and destination marketing organizations should create packages that cater to the needs of bleisure travelers, including leisure activities, cultural experiences, and relaxation options.
- **Offer Flexible Booking Policies:** Travel companies should consider offering flexible booking policies, allowing bleisure travelers to extend their stays or change their travel plans without incurring significant costs.
- **Provide Leisure Activities:** Destinations and hotels can offer a range of leisure activities, such as cultural events, outdoor activities, or wellness programs, to enhance the bleisure experience.
- **Targeted Marketing:** Industry stakeholders should target marketing efforts towards business travelers, highlighting the benefits of bleisure tourism and promoting destinations and services that cater to their needs.

Suggestions for Employers

- **Support Bleisure Travel:** Employers can support bleisure travel by allowing employees to extend business trips, working remotely, or providing travel allowances for leisure activities.
- **Promote Work-Life Balance:** Employers can promote work-life balance by recognizing the benefits of bleisure tourism and encouraging employees to take breaks and recharge.
- **Develop Bleisure Travel Policies:** Companies can establish policies guiding bleisure travel, ensuring clarity and consistency in terms of expenses, travel arrangements, and work expectations.

Suggestions for Future Research

- **Quantify the Economic Impacts:** Future research should quantify the economic impacts of bleisure tourism, including its contribution to local economies and the benefits for businesses.
- **Compare Bleisure Tourism Across Industries:** Comparative studies can explore the differences and similarities in bleisure tourism across various industries, such as tech, finance, and healthcare.

- Investigate Challenges and Limitations: Further research is needed to investigate the challenges and limitations associated with bleisure tourism, including blurred boundaries, productivity concerns, and cultural differences.

Practical Implications

- Enhanced Traveler Experience: By catering to the needs of bleisure travellers, the tourism industry can enhance the overall travelling experience, leading to increased satisfaction and loyalty.
- Increased Competitiveness: Destinations and companies that offer bleisure-friendly services and packages can differentiate themselves and attract more business travellers.
- Economic Benefits: Bleisure tourism can generate significant economic benefits for destinations, hotels, and local businesses, contributing to local economic development.

By understanding the dynamics of bleisure tourism and implementing these suggestions, stakeholders can unlock its potential, driving growth, innovation, and competitiveness in the tourism industry.

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A ROLE OF E-GOVERNANCE AND ITS TRANSPARENCY IN THE ECONOMY OF UTTARAKHAND

Dr. Shreshtha Mishra

Assistant Professor

Department of Commerce and Management

Alpine Group of Institutes, Dehradun Uttarakhand

Email id: - Shreshtha185 @gmail.com

Abstract

Around the globe, public sector and government organizations must change their public administration structures in order to provide their stakeholders with greater information and knowledge as well as more economical and efficient services. The effective use of communication and information technology (ICT) to enhance the existing governance structure and offer citizens with superior services is known as e-governance. Since e-government is seen as the sole way to bring IT to the "Common Public," it is seen as a high-priority agenda item in India. Advance in electronic governance present prospects to use Information and communication technology (ICT) potential to render the governing process affordable, highly adaptable, and comprehensive. The present paper focuses mainly on the different modes of E-government in Uttarakhand.

Keywords: Public sector, E-governance, ICT, IT

Introduction

Electronic government, or e-government, which provides practice of delivering Public services provided to citizens and other peoples in a nation or region by utilizing technology communications tools like computers and the Internet. Direct citizen service delivery and more comfortable citizen-government interaction are made possible by e-government. Some definitions, which describe e-government as only instruments or facilitators and concentrate on certain developments in Public Administration challenges, deviate from the notion that technology is an object. The definition that defined Mauro D. Ríos as a specialized

technologist is the internal change of a government. In his article, "In Search of a Definition of Electronic Government", the author states: "Digital government is a new way of organization and management of public affairs, introducing positive transformational processes in management and the structure itself of the organization chart, adding value to the procedures and services provided, all through the introduction and continued appropriation of information and communication technologies as a facilitator of these transformations.

History

In 1992, the terms "electronic democracy" and "electronic government" were first used interchangeably. Governments all throughout the world have made investments in ICT over the past 20 years in an effort to improve public services while bringing down costs. However, as even the least developed nations have shifted to websites, e-services, and e-government tactics throughout that period, it has become more and more obvious that e-government has not produced all of the anticipated advantages. According to one survey, 35% of e-government initiatives in poor nations failed completely, and 50% just partially.

A response to these subpar results has been a shift in focus toward transformational government, which aims to address the organizational and cultural barriers that have prevented the realization of public service benefits. This approach goes beyond improving e-government processes from a purely technical standpoint. According to researchers, "the exploitation of e-government such that benefits can be realized" is the theory behind transformative government. A report from the Organization for the Advancement of Structured Information Standards (OASIS) was released in 2010 and detailed a number of typical hazards that have prevented many governments from reaping the benefits of their technological expenditures. But OASIS also mentioned this:

A growing number of governments are now addressing the considerably more extensive and intricate range of organizational and cultural adjustments required for ICT to significantly help the public sector. This new strategy is commonly known as "Transformational Government."

OASIS the UK and Australia as two of the leaders in this area: "A new "virtual" business layer within government, known as "Transformational Government," enables the provision of integrated, citizen-focused services to the public across all channels, without additional expense or need for government reorganization. The "Ask Just Once" portal in South Australia and the "Direct Gov" portal of the UK government are two excellent examples of this new strategy. The strategy is expounded upon in great detail in the white paper "Citizen

Service Transformation a Manifesto for Change in the Delivery of Public Services" published by CS Transform.

Review of literature

Dwivedi, S. S., (2015) stated that India is making progress toward e-governance. The quality of governance has improved as e-governance projects have proliferated. Geographical, social and economic inequalities are the major impediments for full-fledged e-governance. Other limitations include illiteracy, a lack of infrastructure, and security and privacy of financial and personal data. The major obstacles arise from the fact that we are the largest democracy, ranked second in terms of people, and have a varied terrain. This essay's goal is to go over India's place in the e-governance landscape as well as current problems, difficulties, and road blocks. By defining its key components, examining its operational flaws, and highlighting the need for creative solutions, it attempts to offer a framework for e-governance in India. The purpose of the study is to assess the program in light of theoretical frameworks and to derive from it useful lessons that may serve as models for future e-governance initiatives in developing countries.

Sangrola, H., and Palaria, R., (2017) reported that government forms the backbone of any country. The well-being of its population is the main goal of any government. Many governments across the globe began to take the initiative to offer government services online with the introduction of the globe Wide Web and the transformation of communication and information technology. India has made significant efforts to implement Federal, state, and local e-governance municipal levels in keeping with this trend. SMART government, or simple, moral, accountable, and responsive government, was the primary driving force behind the introduction of e-government in India. India, the world's biggest democracy, stands to benefit much from e-governance, particularly as we grow into a major economic force and prospective global superpower.

According to Soni, P., (2016) information and communication technology (ICT) is so prevalent, individuals are able to communicate, retrieve data, and use information more quickly and effectively. The system that enables citizens to access government services online is known as e-government. It has gained a lot of acceptance due to its sophisticated function. Any nation's ability to develop hinges on how well its government provides services and carries them out.

Chand, G., (2017) said that India is a country under development. After China, it possesses the second world greatest population. In order to govern in a variety of areas pertaining to the people, the federal government and state governments must provide a range of public services. Therefore, the onus is on both governments to carry out governance in an effective and efficient manner. One of the best ways to offer online citizen-provided public services is through e-government. It aids the government in carrying out its duties pertaining to the people. Research on e-Government governance in India has to be ongoing. Examine the national body of literature on e-Government in this study and distinguish amongst four e-Government types of public service delivery: G2C, G2E, G2G, and G2C. Six advantages are found: Five downsides include: improved communication, government accountability, savings, citizen participation, speed and time savings, and transparency of public services. Internet access restriction, security issues, ICT and electricity drawbacks, expensive electronic newspapers, and Internet connections.

Dwivedi, S. K., and Bharti, A. K., (2010) Globally, public sector and government organizations are confronted with the challenge of modernizing their public administration structures in order to provide their constituents with improved information and understanding, along with more economical and efficient services. The effective use of information and communication technology (ICT) to improve the current governance structure and provide citizens with superior services is known as e-governance. Since e-Government is seen as the sole way to bring IT to the "Common Public," it is seen as a high priority agenda item in India. Advance in electronic governance present prospects to use the potential of Information and Communication Technology (ICT) to render the governing process affordable, highly adaptable, and comprehensive. In this essay, we address the fundamental issues and viability of e-government in India.

According to Singh, A., (2023) everyday lives of people all over the world has been completely transformed by information, communication, and technology (ICT). Technological developments such as chat bots, cloud computing, web 2.0 to 5.0, artificial intelligence, and the Internet of Things has changed the governance of both the public and private sectors. To oversee their countries' daily activities, governments everywhere are putting e-governance into practice. Using information and communication technologies has made public service delivery more efficient. Government trust has increased as a result of public services becoming digitalized. Enhancing public administration and governance is now of the utmost importance due to the country's socioeconomic progress. These days, the

internet has changed how businesses function. ICT technologies are changing the way that businesses, individuals, and the government communicate. E-governance is a step toward modernizing public service delivery and placing the administration at the center of the citizenry. By eliminating corruption and bribery, e-governance in the financial industry contributes to economic growth. The way that citizens and government communicate has been greatly affected by e-governance.

Parveen, S., (2018) lifestyle in India is really high. On one end of the spectrum, there are those who are extremely wealthy, well educated, open to developments in technology across all spheres of life, and adaptable to shifting social mores. However, there are also others who are impoverished, ignorant or very little educated, resistant to modern advancements, and who adhere to antiquated traditions and rituals. Even with their extremes, both cults have one thing in common: they use electronic media. Not only has the internet made living easier, but it has also made work smarter across the board. Among the many benefits of electronic media, using it for governance is seen to benefit society. With the help of e-government, both the administration and the public can now see more clearly. However, because India is a diverse country, there are many obstacles to overcome before e-governance can be widely adopted and used.

Mondal, S., (2019) India is a country mostly built on bureaucratic structures. Users may now communicate more quickly, more affordably, more precisely, and more easily. They can also access high-quality facilities, store information efficiently, work efficiently, process data, share information, and use information. Sales are increased and regulations are tightened as a result. All party individuals, parties, businesses, organizations, or governments benefit from ICT. But in order to do this, the government will need to change a number of internal processes, attitudes, laws, rules, and regulations, as well as how it interacts with the public. E-governance is crucial in incorporating such a paradigm change towards the e-governance module. The modern world demands e-government; it is no longer a choice. E-Government is focused on government modernization, automation of tasks and procedures, and improved methods for delivering public services based on technology, allowing the government to operate autonomously. The Indian government started a number of initiatives to assist e-governance, including smart govt, e-seva, e-kranthi, digital India, etc. However, several issues with the application of e-governance produce e-progress impediments. Governance's. This piece impartially examines the many prospects, status and implementation challenges of e-Government.

Mittal, P., and Kaur, A., (2013) People can now communicate, access data, and use information more efficiently and effectively because to the advancement of information and communication technology, or ICT. In essence, e-Government refers to the use of ICT to enable citizens to access government services online. A multitude of obstacles exist when attempting to implement e-Government initiatives in developing nations like India, where the majority of people are living below poverty level, the literacy rate is extremely low, and people are not even aware of the advantages of these initiatives.

Sharma, P.,(2018) revealed the requirement for the shift from conventional to e-governance in the paradigm of government. The contribution of e-government to good governance is thus the main topic. ICT is being used in e-governance to increase the system's efficacy, efficiency, and transparency. The exercise of economic, political, and administrative power to oversee a community's operations at all levels is known as governance. The quality and reputation of governance patterns have increased with the global and Indian adoption of e-government. The idea of "good governance" has been more well-known in political science and public administration lately. It now receives equal treatment and coexists with ideas like social and sustainable development, democracy, human rights, and public engagement. Transparent, accountable, and participatory government are characteristics of good governance. It is efficient and fair in upholding and advancing the rule of law and encouraging growth in a country's political, social, and economic domains. Good governance aims at enabling an organization to execute its work and realize its objective.

Objective

- To analyze the different types of e-government services offered in Uttarakhand state.
- To examine the different benefits of people through e-government services.

E-office Status in Uttarakhand

At present various offices in the state have implemented the e-office system. The implementation process is in progress. Nic's application software "office" has been selected to digitize the secretariat's functioning. In this sequence, master data of employees has been prepared, and government email IDSC ID has been created for 80 percent of employees. For the successful implementation of the e-office, ITDA (Information Technology Development Agency) has upgraded the local area network in the secretariat premises, and 300 computer systems have been procured and distributed to the secretariat administration. The training was

provided to secretariat employees in ITDA for operating the e-office. The table 1 below shows the various status in Uttarakhand in the platform of e-governance

Table :-1 E-office status

S.No	Items	Total
E –office		
1	Total number of licenses	15,000
2	License allotted	11,000
3	e-receipt created for Uttarakhand	1,31,40,051
4	Total e-files created	1,63,951
Onboarding status		
1	Total number of departments involved	418
E-office training status		
1	Secretariat	68
2	Management department	42
3	District	13
4	Departments	41
5	Agency	4
6	Corporation	6
7	Organization/Board	10
8	Sub-department	226
9	Others	8

Source: - Uttarakhand survey 2023-24

It is clear from the table that the total license offered by the government is 15,000 out of which the government allotted 11,000. The e-receipt created by the Uttarakhand government is 1,31,40,051 and the e-files are 1,63,951 in the state by the e-office. There are 418 departments in onboarding status out of which training is provided under different departments regarding the e-office like secretariat, Management, district agency, etc.

E-District “Apuni sarkar Portal”

under the E-District project, 768 citizen services of 73 departments have been developed and integrated and are being provided to the citizen in all the districts of Uttarakhand state

through “Apuni Sarkar Portal” through web portal, mobile Apps, E-District and CSC (common service centre) centers.

- The Department of Administrative Reforms and Public Grievances, Government of India, presented Apuni Sarkar Portal with the esteemed 26th national e-governance award.
- Apuni Sarkar Portal is linked to the government of India and recognized as best practice across the country by NESDA (National e-Governance Service Delivery Assessment) framework of the Department of Administrative and Public Grievances.
- The portal has been checked and assessed as per GIGW 2018 where the website meets 86 quality requirements of Government of India Guidelines 2018.
- The portal is free from OWASP (Open Worldwide Application Security Project) 2021 top 10 vulnerabilities (secure as per government guidelines).
- Vulnerability and penetration testing (VAPT) assessment of the server has been audited by CERT in empanelled agency.

DBT (Direct Benefit Transfer)

Under the DBT scheme, 49 schemes are being provided through the “Apuni Sarkar” portal and 23 schemes are in the process of becoming online under the different departments of the state government of Uttarakhand. These departments are the Social Welfare Department, Sanskrit Education, tribal matters, Fisheries, minority affairs, Animal Husbandry, Dairy Development, military welfare & rehabilitation Board, and Sports Department.

Common Service Centre (CSC) or Dev Bhoomi Seva Kendra

Currently, 24,100 common service centres are registered in the state, out of which 19,003 common service centres are established in gram panchayats. 9,461 CSCs have been authorized for e-district services. E-districts and other G2C services of the state and centre are being provided to the citizens through the common service centre. Apart from this various B2C services are also being provided through CSC.

E-Gate pass

Uttarakhand E-gate pass developed by the ITDA (Information Technology Development Agency) is an initiative of the state government through this, a simple digital process has been developed for citizens to get appointments in government offices/premises. Under this, the application process is available at www.egatepass.uk.gov.in. E-gate pass system has been implemented in Uttarakhand Secretariat. More than 1.80 lakh online passes have been issued

through this system. An E-invitation application has been created and implemented for invitations to Raj Bhavan.

Conclusion and the way forward

The public benefits from the e-services schemes of the government show a positive result, as these benefits work directly at the ground level. The engine and maintainer of India's economic progress will be an effective government. Authorities can be held accountable to the people and their trust may be restored via good administration. Participation is essential for democracy to function, hence citizens must take an active part. To put the policies into effect, the nation must work very hard. It is necessary for citizens, executives, and the government to adopt a new perspective on e-governance, which is an evolving phenomenon in India. The Internet may assist in making government procedures productive, efficient, and user-friendly.

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