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Editorial



Editor-in-Chief

I am pleased to announce the release of Volume 10-11, Issues 1-4 for the years 2024-2025 of the International Journal of Applied Management Research (IJAMR). This Volume comprises a total of ten (10) manuscripts. A temporary hiatus in the release of issues occurred during 2020-21, attributable to the Covid-19. However, the Editorial staff promptly organized its responsibilities and began receiving contributions from eminent scholars and academicians, enabling the expedited facilitation of the past issues.

I express my profound gratitude to all the authors for their valuable submissions from both India and abroad. I am very grateful to all the reviewers who assisted in the timely blind examination of the articles; their ongoing assistance enabled the successful publication of this journal issue.

I express my gratitude to the Managing Editor of IJAMR, who, upon assuming the particular role has dedicated himself to the publication of the current issue. I express my gratitude to the Advisory Board and Editorial Board Members for their diligent contributions, which have facilitated the effective publication of this Volume.

I express my profound gratitude to the Vice Chancellor of NEHU, Shillong, and the Campus Director of NEHU, Tura Campus, for their unwavering support to our department and for advancing this institution towards greater academic success. I extend my sincere gratitude to all the writers who submitted high-quality pieces for this issue. I anticipate that high-quality research papers will persist in being submitted to IJAMR in the future.



(Prof. Abhigyan Bhattacharjee)
Editor-in-Chief, IJAMR

Editorial



Managing Editor

I take great delight in presenting the consolidated issues Volume 10-11, Issues 1-4 for the years 2024-2025 of the International Journal of Applied Management Research.

To form an objective perspective on the subject of inquiry, scholars must gather facts, concepts, viewpoints, and other pertinent matters. The backlog of issues from 2020 has been a testament and a significant editorial commitment to include papers as combined issues in the current Journal Volume.

We are dedicated in elevating the quality of publications with IJAMR and standard among academics. The International Journal of Applied Management Research (IJAMR) has demonstrated a robust commitment to ethical publication processes, marking a significant advancement in the domain of publishing ethics.

The research papers in the current volume were meticulously picked through a blind review process and have been appropriately included in the current editions of our journal. The reviewers' competent evaluation of the manuscripts, together with their objective and equitable peer-review method, contributed to the journal's outstanding quality of research. The editorial board has undertaken proactive and constructive initiatives in the publication process, driven by a dedicated objective to advance management research while adhering to business research standards.

Due to the meticulous efforts of our Editor-in-Chief and editorial board members, along with the steadfast support of our advisory board members, the issues could be published in the current volume.

I wish to convey my appreciation to all the scholars and researchers who have submitted their research papers and have agreed to serve as our esteemed reviewers. The editorial board acknowledges the significant responsibility of ongoing commitment to the academic mission and anticipates valuable and pragmatic ideas to advance our efforts.

Amit Kundu

(Dr Amit Kundu)
Managing Editor, IJAMR



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Evolution of Online Shopping in India: Consumer Trends & Future Directions

Anusha Suhail¹, Asif Ali Syed²

Abstract

This conceptual paper explores consumer behavior in India's online shopping landscape, emphasizing the complex interplay of emotional, social, economic, and technological factors in the decision-making process. Drawing on Schiffman and Kanuk's Consumer Decision-Making Model, the study provides a structured framework that integrates the e-Marketing Mix, social influences, and economic drivers to understand how Indian consumers search for, evaluate, and choose products online. The findings highlight that consumer decisions are increasingly influenced by emotions, moods, and social contexts rather than purely rational considerations. As India emerges as the world's second-largest consumer market, shifts in consumer profiles—across age, gender, income, education, and digital connectivity—have significantly impacted online shopping preferences. The study identifies a gap in existing literature regarding the application of Schiffman and Kanuk's model to the Indian context and addresses this by offering a comprehensive conceptual framework. This framework not only enriches academic understanding but also lays the groundwork for future research on socio-economic dynamics and digital consumer engagement in emerging markets.

Keywords: Online Shopping, Online shopping Consumer behaviour, Attitude towards Online Shopping, Social Factors, Economic factors; Online Experience, e-Marketing Mix, Schiffman and Kanuk's Model

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1. Introduction

Online shopping has dramatically transformed the global retail landscape, driven by rapid technological advancements and shifting consumer preferences. The increasing penetration of the internet and smartphones has made online purchases more accessible and convenient, reshaping traditional buying patterns. In India, this digital transformation has catalyzed a competitive and rapidly growing e-commerce environment. However, the country's unique socio-economic characteristics—marked by cultural diversity, income inequality, and varying levels of digital literacy—set it apart from other global markets (Chatterjee & Ghosal, 2014).

India is now the second-largest consumer market in the world, with an evolving consumer profile shaped by demographic shifts in age, gender, education, income, and occupational structures (Jindal, 2019). As technology becomes increasingly embedded in everyday life, there has been a notable shift in brand preferences, ranging from basic goods to high-end digital products. With over 600 million internet users—projected to reach 900 million by 2025—India hosts the world's third-largest online consumer base (The Hindu, 2021).

As online markets mature, distinguishing between experienced e-shoppers and first-time buyers becomes critical, as each group exhibits distinct decision-making behaviors (Gefen et al., 2003). In this context, it becomes essential to examine online consumer behavior from multiple dimensions—psychological, social, economic, and technological—to develop effective engagement strategies.

1.1. Global and Indian Perspectives on Online Shopping

Globally, several theoretical models have been applied to understand online consumer adoption and behavior, including the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Guzzo et al., 2016; Venkatesh et al., 2003; Gefen et al., 2003). However, there has been limited exploration of these dynamics through **Schiffman and Kanuk's Consumer Decision-Making Model**, which offers a comprehensive view of the buyer's journey—from need recognition to post-purchase evaluation.

This study aims to address this gap by applying the Schiffman and Kanuk framework specifically to the Indian context, thereby offering a structured and holistic lens for understanding online shopping behavior in a complex and evolving marketplace.

1.2. Online Shopping and Consumer Behavior

Online shopping refers to the process of purchasing goods and services over the internet without physical interaction with the seller. It offers round-the-clock convenience, enabling consumers to shop from the comfort of their homes using computers or mobile devices (Melbha, 2018; Sunitha&Gnanadhas, 2014).

Online consumer behavior encompasses the full cycle of online activity, from information search and evaluation to purchasing and post-purchase experience. In India, adoption patterns differ due to cultural variation, digital divides, and income disparities, making it challenging to generalize buying behaviors (Chatterjee&Ghosal, 2014). Understanding these dynamics is essential for brands aiming to remain competitive in a fast-paced digital economy.

1.3. Evolution of the Information Age and Online Shopping

Lecinski (2020) outlines three key paradigm shifts in digital marketing that have transformed consumer journeys:

- **First Moment of Truth (2005):** Consumers made purchase decisions in-store with limited pre-purchase information.
- **Zero Moment of Truth (2011):** Digital tools such as social media and search engines began shaping buying decisions before consumers reached stores.
- **Accelerated Loyalty Journey (2020s):** The era of short attention spans and information overload, where brands must instantly capture interest to retain consumer engagement.

1.4. Evolution of Online Shopping in India

India's e-commerce journey began in the late 1990s, but was initially hindered by inadequate infrastructure, poor internet connectivity, and limited consumer trust. The dot-com crash (2000–2005) further stalled progress, causing widespread business failures (Syed & Khan, 2017).

A turning point occurred in 2005 with the rise of Low-Cost Carriers (LCCs) and the success of online travel platforms. This shifted consumer attitudes, paving the way for ventures like Flipkart (2007), Naukri.com, 99acres.com, and Jeevansathi.com to enter and thrive in the Indian market (Kotha, 2022; Chen & Hooper, 2017).

1.5. Growth of India's Online Market

According to IBEF (2024), the Indian e-commerce ecosystem is undergoing exponential growth:

- The **online grocery market** is expected to rise from \$3.95 billion (FY21) to \$26.93 billion by 2027 (CAGR: 33%).
- India's **consumer digital economy** is projected to grow from \$537.5 billion (2020) to \$1 trillion by 2030.

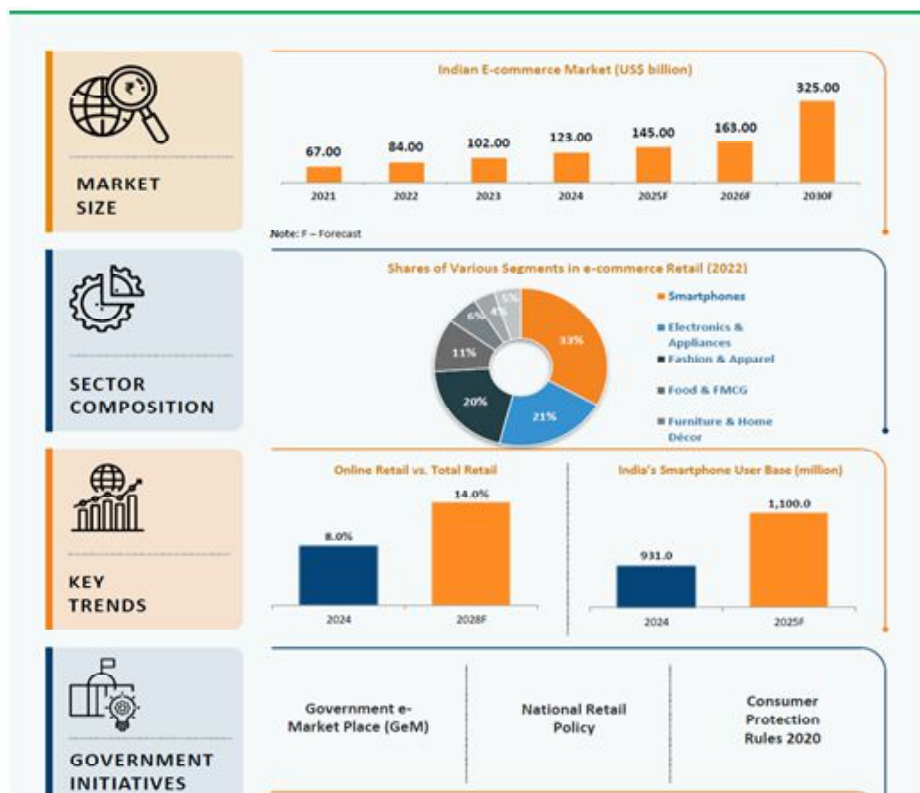


Fig.1: Indian online market growth and trends

Source: IBEF (Indian Brand Equity Foundation; www.ibef.org, 2024)

- The **e-retail sector** is expected to surpass \$160 billion by 2028, with only 5–6% of total retail spending currently online.
- **Quick commerce, B2B, and B2C** segments are expanding rapidly.
- Digital and mobile revolutions—driven by UPI payments and rising smartphone penetration—are key growth enablers.

- The online shopper base is forecasted to grow from **150 million (FY21)** to **350 million (FY26)**, with strong adoption in Tier-2 and Tier-3 cities.

1.6. Significance of the Study

This study is significant as it examines the socio-economic and marketing variables influencing online shopping behavior in India. It provides insights into how peer influence, family dynamics, income levels, digital awareness, and price sensitivity affect consumer decisions.

By applying Schiffman and Kanuk's decision-making framework, the study enriches existing literature in e-commerce, marketing, and consumer behavior. It offers actionable strategies for marketers, enabling better targeting and cost-effective customer acquisition in India's diverse consumer landscape. Moreover, it highlights the role of trust, attitudes, and demographic factors in shaping online purchase behavior.

1.7. Objectives of the Study

1. To identify and explore the socio-economic factors influencing online buying behavior in India.
2. To examine the trends in online shopping and propose a conceptual consumer behavior framework.
3. To provide strategic insights for marketers seeking to expand and engage with Indian online consumers.

1. Literature Review

Online shopping is defined as the process of purchasing goods or services over the Internet directly from sellers, bypassing intermediaries (Melbha, 2018). While globally accepted for its convenience and flexibility, India's adoption of online shopping is shaped by distinct socio-economic factors, including vast income disparities and cultural diversity (Chatterjee & Ghosal, 2014). As online commerce grows in India, the need to understand the dynamics of consumer behavior intensifies, particularly as businesses compete for digital market share.

The widespread adoption of internet and information technologies (Ali et al., 2020; Hwang & Jeong, 2016; Zhu & Chen, 2016) has deeply transformed consumer behavior, communication, and transaction patterns (Abualrob & Kang, 2016; Azam & Quaddus, 2013; Rahi et al., 2017; Zhang et al., 2012). Guzzo et al. (2016) note that

e-commerce, as a product of these developments, facilitates seamless access to goods and services.

Online shopping behavior encompasses the psychological and social processes involved in product search, purchase, and post-purchase activity (Solomon, 2019). Experienced e-shoppers differ significantly in behavior from novice users (Gefen et al., 2003), highlighting the evolving nature of influencing variables.

Several foundational models have been applied to study consumer technology adoption: TRA, TAM, TPB, UTAUT, and Innovation Diffusion Theory among others (Guzzo et al., 2016; Venkatesh et al., 2003). Expectation-Confirmation Theory (ECT) also helps explain satisfaction and repurchase behavior (Oliver, 1980). However, many of these models focus on adoption rather than comprehensive behavior across the purchase cycle.

Early consumer behavior theories were rooted in economic rationality—assuming consumers aim to maximize utility. But later studies refuted this, emphasizing emotional and social influences in purchasing decisions (El-Abidin, 2021). Consumers frequently act on impulse, influenced by peer dynamics, advertising, and situational factors, leading to a more holistic understanding of decision-making.

Smith and Rupp (2003) argue that e-commerce redefines the consumer-business relationship, calling for an analysis of socio-economic implications and continual improvement in factors like quality, service, flexibility, and trust.

2.1. Schiffman and Kanuk's Model of Consumer Behavior

Emerging in the 1960s, consumer behavior as a discipline has integrated insights from psychology, sociology, anthropology, and economics (Smith & Rupp, 2003). Schiffman and Kanuk (2000, 2010) proposed a dynamic model incorporating both emotional and rational influences across three phases: **input, process, and output**.

This model is especially relevant in the Indian context, where online buying behavior is influenced by cultural norms, economic diversity, and evolving digital familiarity. The framework enables marketers to analyze consumer attitudes, evaluate decision-making stages, and refine e-commerce strategies.

2.1a. E-Marketing Mix

The adaptation of the traditional 4Ps (Product, Price, Place, Promotion) to digital platforms has transformed consumer engagement (Rana et al., 2022; Kalyanam &

McIntyre, 2002). Complementary models like the 3Cs (Prandelli & Verona, 2006) and 7Cs (Dennis et al., 2005) add layers such as customization, content quality, and cost-effectiveness.

- **e-Product:** Customization enhances satisfaction, with products tailored to individual preferences (Rana et al., 2022).
- **e-Price:** Competitive pricing and discount strategies shape consumer perception and decision-making (Henzinger, 2007; Schiffman, 2002; Arnold & Reynolds, 2003; Biswas & Blair, 1991; Khan et al., 2015).
- **e-Place/Delivery:** Seamless digital channels and efficient logistics increase accessibility (Blackshaw, 2006; Jotikasthira&Onputtha, 2018).
- **e-Promotion:** Online reviews, social media, and SEO have become vital tools for trust-building and consumer engagement (Henzinger, 2007; Praesri et al., 2022).

2.1b. Social Factors

Social influence plays a crucial role in online shopping, where individuals are swayed by the expectations and behavior of family, peers, and reference groups (Bagozzi & Lee, 2002; Zhu & Chen, 2016; Rashotte, 2007).

Key findings highlight:

- Influence of peers and family on trust and purchasing behavior (Auter, 2007; Rakib, 2019; Korpelainen&Kira, 2013).
- Role of eWOM and UGC in shaping trust and brand preferences (Li & Ku, 2018; Nielsen, 2015).
- Older consumers show lower adoption due to limited tech skills (Trocchia & Janda, 2000).

2.1c. Economic Factors

Economic variables—such as income, professional status, and digital access—directly impact online shopping adoption (Melbha, 2018; Hernández et al., 2011; Akroush& Al-Debei, 2015). Higher-income consumers perceive lower risks, while price-conscious behavior dominates among lower-income groups.

- Education and IT familiarity also correlate with online spending frequency (Gong et al., 2013; Chau & Hu, 2002; Hubona&Kennick, 1996).
- Emerging economies exhibit cautious online behavior due to limited trust and infrastructure (Sánchez-Torres et al., 2017; Daoudi&Develi, 2023).

2.2. Attitudes Toward Online Shopping

Attitudes influence online shopping adoption by shaping responses to various environmental stimuli (Wilkie, 1986; Allport, 1935; Fishbein & Ajzen, 1975). A favorable attitude increases engagement with online platforms, especially in need recognition and evaluation (Schiffman & Kanuk, 2010).

Consumers' perception is shaped by:

- Ease of website use and transaction security (Hawkins et al., 2001).
- Cultural and personal preferences (Bearden et al., 1995; Kotler, 2004).
- Positive prior experiences reinforce favorable attitudes (Krech et al., 1962).

2.3. Online Consumer Decision-Making

Schiffman & Kanuk (2010) detail five stages of the decision process:

- **Need Recognition:** Influenced by ads, social media, and personal circumstances (Langkos, 2014).
- **Information Search:** Digital platforms replace traditional sources (Wolfenbarger & Gilly, 2001; Xia, 2002).
- **Evaluation of Alternatives:** UGC and algorithms help consumers compare options (Li et al., 2023).

2.4. Online Consumer Experience

The quality of online experiences influences consumer trust, satisfaction, and loyalty (Koo et al., 2008; Khalifa & Liu, 2007; Ling et al., 2010). Consumers assess websites on delivery speed, payment security, and customization. Negative experiences deter future purchases (Brunelle, 2009).

- **eWOM** significantly impacts future buying decisions (Qiu et al., 2012; Wang et al., 2015).

- Repeat purchases are more likely when prior interactions are positive (Zhou, Dai, & Zhang, 2007).

2.4.1. Interplay of Attitudes, Decision-Making & Experience

These three elements form a feedback loop:

- Positive attitudes promote deeper decision engagement (Adhikari & Panda, 2018).
- Streamlined decision processes enhance user satisfaction (Ling et al., 2010).
- Satisfying experiences reinforce positive attitudes, promoting loyalty (Schmitt, 1999).

2.5. Online Purchase Behavior

The actual purchase reflects the culmination of trust, pricing strategy, and platform usability (Schiffman & Kanuk, 2010; Nazir et al., 2012). Studies confirm that convenience, variety, and perceived benefits drive purchase intent—particularly among Indian women (Arora & Aggarwal, 2018).

Research by Park & Kim (2003), Zimmer et al. (2010), Delafruez et al. (2011), and Hsu et al. (2013) underscores the direct relationship between consumer attitudes and purchase behavior.

2.6. Post-Purchase Evaluation

Post-purchase evaluation is essential for measuring satisfaction and fostering brand loyalty (Hajli, 2015). Positive experiences yield repurchase intentions and advocacy through reviews and eWOM (Qiu et al., 2012; Thenmozhi & Sathya, 2022). Consumers compare product performance with expectations, which determines future engagement with a platform (Schiffman & Kanuk, 2010; Chatterjee & Ghosal, 2014).

2.7. Demographics

Demographic factors such as age, gender, income, education, and occupation have long been recognized as key determinants of consumer behavior in digital marketplaces. These variables shape consumer attitudes, trust levels, technology familiarity, and ultimately, their propensity to engage in online shopping.

2.7.1. Age

Age is a significant factor in shaping online consumer behavior. Older consumers often prefer traditional shopping methods due to lower digital literacy and resistance to technology (Dholakia & Uusitalo, 2002). Younger consumers, on the other hand, tend to be more tech-savvy, time-conscious, and open to online shopping (Qazzafi, 2020; Bhatt, 2019). In India, studies show a generational shift, with younger cohorts increasingly driving e-commerce engagement (Khare, Khare, & Singh, 2012; Kanchan, Kumar, & Gupta, 2015). Interestingly, while older shoppers make fewer purchases, their overall spending remains comparable to that of younger users (Bhatt, 2019).

2.7.2. Gender

Gender differences continue to influence shopping behavior, particularly in household contexts. Research indicates that women—especially working women—are more frequent online shoppers, largely due to time constraints and convenience (Richa, 2012; Schiffman & Kanuk, 1997). Dholakia and Uusitalo (2002) highlight that gender plays a role in decision-making within married households, underscoring the importance of gender-sensitive marketing approaches. Richa (2012) recommends that e-commerce platforms prioritize female-centric strategies to engage this growing segment effectively.

2.7.3. Income

While some studies suggest a weak correlation between income and online shopping frequency (Sultan & Uddin, 2011; Richa, 2012), others have shown a positive relationship, especially in early stages of e-commerce adoption (Sultan & Henrichsen, 2000). Income may not be a consistent predictor across contexts, but it continues to influence perceptions of affordability, product value, and willingness to try digital platforms. Nagra and Gopal (2013) found income, along with age and family size, to significantly affect online shopping in India.

2.7.4. Education

Educational attainment significantly impacts digital shopping behavior. Consumers with higher levels of education tend to exhibit greater familiarity with online interfaces and more confidence in navigating digital transactions (Hossain, Salam, & Jawad, 2022). They also exhibit distinct product preferences and are more likely to evaluate online information critically (Mulhern, Williams, & Leone, 1998). Higher education is

often associated with informed decision-making and frequent online purchasing activity.

2.7.5 Occupation

Occupation influences both income level and online shopping exposure. Private-sector employees, particularly in IT and manufacturing, demonstrate a higher tendency to shop online compared to public-sector workers, students, and self-employed individuals (Hossain, Salam, & Jawad, 2022; Sharma & Parmar, 2018). Occupational roles are not just linked to income but also to digital access and workplace culture, which in turn influence online engagement and trust.

2.8 Research Gaps

Despite substantial work on online consumer behavior, the following key gaps remain:

1. Existing studies do not sufficiently capture the evolving influence of socio-economic variables and the e-Marketing Mix in the Indian online shopping context.
2. Schiffman and Kanuk's Consumer Behavior Model remains underutilized in online shopping literature. Its holistic approach offers untapped potential for understanding online consumer decision-making in emerging economies like India.
3. There is a lack of integrated analysis on how demographic variations—such as income, age, gender and education create demand-supply mismatches in digital retail. A targeted approach is needed to align marketing strategies with diverse Indian consumer segments.

3. Theoretical Framework

3.1. Need for the Study

The complexity of online shopping behavior poses an ongoing challenge for both scholars and practitioners. While micro-level studies have provided useful insights, there is a pressing need for broader conceptual frameworks to interpret emerging trends. As the world's third-largest internet consumer base, India presents a diverse and rapidly changing landscape. Understanding the **socio-economic drivers** behind online shopping decisions is essential for businesses to remain competitive.

Specifically:

- Marketers must de-code how **personal and contextual factors** influence consumer intent and behavior.
- A deep understanding of **consumer perception, attitudes and motivations** can guide product development, customer engagement, and satisfaction strategies.
- **Application of Schiffman and Kanuk's Consumer Behavior Model**
- This study is anchored in the **Schiffman and Kanuk Model (2010)**, which segments consumer decision-making into three stages—**Input, Process, and Output**—and integrates both **external stimuli** (e.g., marketing mix, economic factors) and **internal psychological mechanisms** (e.g., motivation, attitudes, learning).

3.2. Input Stage

- **e-Marketing Mix:** Digital adaptations of Product, Price, Place, and Promotion strategies influence consumer attention and initial interest.
- **Social Influences:** Variables such as Age group, Family, Friends, Reference groups, Opinion leaders play crucial roles in shaping awareness and expectations.
- **Economic Influences:** Economic status of the consumer in terms of Education, Occupation, Income and relative change in attitude with Price change, Value for money, etc.

4.2.2 Process Stage

- This stage involves need recognition, information search, and evaluation of alternatives, shaped by:
- Consumer attitudes and perceptions
- Trust in digital platforms
- Cultural values and psychological responses

- The interaction of external and internal factors at this stage determines whether the consumer proceeds to a purchase decision.

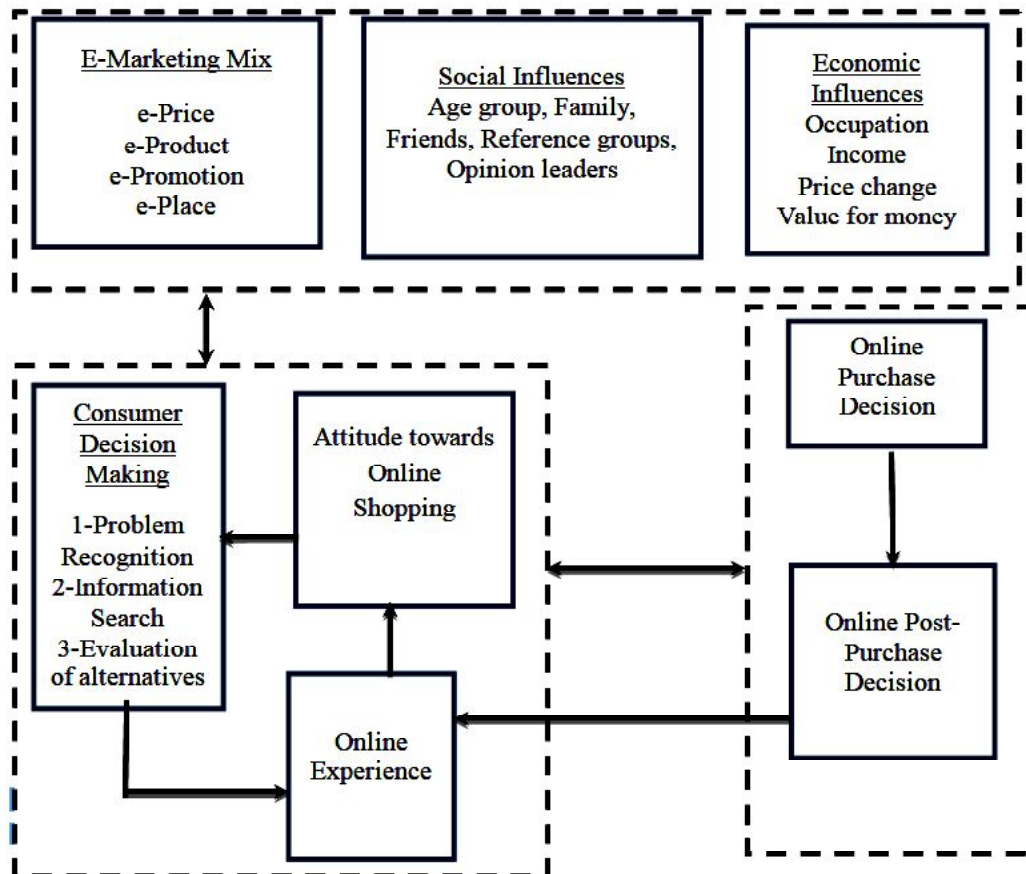


Fig.2. Proposed Research Model

Source: Adapted from Schiffman and Kanuk Model of Consumer Behavior (2010)

4.2.3 Output Stage

- **Purchase Decision:** Trial and repeat purchases are shaped by prior experience, perceived risk, and satisfaction.
- **Post-Purchase Behavior:** Consumers evaluate outcomes against expectations. Positive evaluations lead to **loyalty**, while negative experiences trigger complaints, returns, or brand switching.

Research Methodology

This conceptual study adopts a qualitative approach based on secondary data, guided by Schiffman and Kanuk's Consumer Decision-Making Model. It synthesizes insights from academic literature, market reports, and theoretical models to explore psychological, personal, social, and situational influences on online behavior.

Research Design:

- Qualitative conceptual framework using secondary sources including peer-reviewed journals, books, and industry analyses.
- Framework application: Mapping data onto the stages of Schiffman and Kanuk's model.

Data Collection:

- Literature review: Focused on Online Shopping, Consumer behavior, e-commerce trends, and digital marketing.
- Theoretical mapping: Aligning findings with key components of the chosen model.

5. Findings and Discussion

The findings of this conceptual study indicate that online consumer behavior in India is influenced by a combination of rational, emotional, and socio-cultural factors. While traditional consumer behavior models often emphasized rational decision-making based on product utility, price, and value, this study highlights that Indian online consumers are equally driven by emotions, moods, social influence, and convenience. The evolution of e-commerce platforms and exposure to digital content have encouraged impulse buying, especially among younger and urban populations. Consumers are often influenced by real-time promotions, social media trends, and peer recommendations, which override purely logical decision-making processes. This behavior underscores the limitations of rational choice theory in online settings and supports the inclusion of psychological and emotional dimensions, as emphasized in Schiffman and Kanuk's model.

Demographic and socio-economic variables play a significant role in shaping online purchase behavior. Younger consumers, particularly those between the ages of 18 and 35, display a higher propensity to shop online due to their comfort with digital technology and time constraints. In contrast, older consumers tend to rely more

on conventional shopping methods, largely due to trust issues and limited familiarity with digital interfaces. Gender also emerges as a notable factor, with studies showing that working women, constrained by time, are more inclined towards online shopping. Income and occupation further influence behavior—higher-income individuals are more exploratory and perceive online shopping as less risky, while lower-income consumers are more price-sensitive and cautious. Professionals from private-sector industries, especially IT and manufacturing, are more active online shoppers than their public-sector counterparts, suggesting a correlation between occupational exposure to technology and online buying behavior.

The role of the e-Marketing Mix is particularly prominent in shaping online consumer attitudes and actions. Adaptations of the traditional 4Ps—Product, Price, Place, and Promotion—have taken on new meaning in the digital context. E-commerce platforms that offer product personalization, transparent pricing, rapid delivery, and engaging promotional content are more likely to attract and retain consumers. Consumers value competitive pricing, installment payment options, and loyalty rewards. Digital promotions through influencers and social media play a vital role in capturing consumer attention, particularly among younger users. Furthermore, trust in the online platform—built through accurate product descriptions, secure payment gateways, and responsive customer service—heavily influences whether a consumer completes or abandons a purchase.

Post-purchase behavior continues to shape long-term brand relationships. The experience of a consumer after purchase—whether the product meets expectations, how quickly it is delivered, and how smoothly issues are resolved—affects satisfaction and brand loyalty. Positive experiences contribute to repeat purchases and favorable electronic word-of-mouth (eWOM), while dissatisfaction often results in complaints, returns, or negative reviews. Schiffman and Kanuk's model, particularly its emphasis on feedback from the output stage influencing future behavior, aligns well with these observations. In the Indian context, where digital trust is still developing, the post-purchase phase becomes critical in either reinforcing or damaging a consumer's willingness to engage in future transactions.

6. Implications for stakeholders

6.1. Implications for E-Marketers

The findings of this study hold several actionable implications for e-marketers navigating India's evolving digital landscape. To effectively engage online consumers,

marketers must adopt **segment-specific strategies** that consider variations in age, income, gender, and occupation. Younger, tech-savvy users respond well to mobile-first experiences, influencer-driven campaigns, and limited-time offers, while older consumers value trust, simplicity, and reliability. Therefore, platforms should offer **personalized product recommendations**, user-friendly interfaces, and seamless navigation tailored to different user groups.

In terms of pricing strategy, **transparency and affordability** remain key drivers of online purchase decisions. Dynamic pricing, cashback offers, installment options, and loyalty rewards can appeal to both value-seeking and convenience-oriented customers. Promotional campaigns should integrate digital storytelling, peer influence (via testimonials or reviews), and interactive content to strengthen emotional engagement.

Moreover, marketers must prioritize the **post-purchase experience**. Ensuring consistent delivery performance, accurate product descriptions, and responsive customer service can significantly reduce buyer friction and improve brand loyalty. Offering transparent refund, exchange, and cancellation policies, alongside real-time order tracking and prompt issue resolution, will not only enhance consumer trust but also differentiate brands in a highly competitive environment.

6.2. Implications for Online Consumers

For consumers, the study emphasizes the importance of becoming **informed, proactive participants** in the digital marketplace. As the number of platforms and products increases, so do the risks associated with fraud, misinformation, and poor service. Consumers should develop digital literacy by learning how to assess seller reputations, interpret customer reviews, and verify product authenticity before making purchases.

To optimize their shopping experience, consumers can utilize **comparison tools, price alerts, and wish-list features** to track offers and make cost-effective decisions. Engaging in **secure payment methods** and understanding platform-specific return and refund policies can help mitigate risks related to unreliable transactions. Subscribing to membership programs or loyalty schemes often offers exclusive benefits like discounts, early access to sales, and priority customer service.

Additionally, consumers play a pivotal role in shaping the e-commerce environment through **user-generated content**. Writing honest reviews, participating in consumer forums, and reporting fraudulent practices contribute to greater

transparency and accountability within the digital ecosystem, ultimately benefiting the broader consumer community.

6.3. Implications for Policymakers

This study also presents significant implications for policymakers tasked with governing and safeguarding the rapidly expanding e-commerce sector in India. As digital commerce becomes a major economic force, **robust regulatory frameworks** are needed to ensure that consumer rights are upheld and fair-trade practices are enforced. Specific areas requiring attention include **standardized return/refund protocols**, enforcement of **warranty obligations**, and quick, accessible **dispute resolution mechanisms**.

Promoting **digital literacy programs** should be a top priority, especially for older adults, rural populations, and low-income groups who may lack the digital skills or confidence to participate safely in e-commerce. These programs should focus on platform navigation, fraud prevention, data privacy, and online transaction safety.

In addition, policymakers should encourage **platform accountability** by mandating transparency in product listings, seller identities, and customer service policies. Collaboration between industry stakeholders and regulatory bodies can help create ethical standards and best practices for online commerce, contributing to long-term consumer trust and sustainable market growth.

7. Future Research Directions

This study provides a conceptual foundation for understanding online shopping behavior in India using Schiffman and Kanuk's model. Future research should empirically test this framework through surveys or behavioral data to validate the relationships between socio-economic factors, the e-Marketing Mix, and consumer attitudes.

Data-driven approaches such as machine learning and sentiment analysis can offer real-time insights into consumer patterns, while integrating emerging themes like sustainability, ethical consumerism, and mobile commerce can enhance the model's relevance. Additionally, exploring psychological triggers of impulse buying—especially via social media and influencer marketing—can deepen understanding of digital consumer dynamics.

Finally, qualitative studies capturing consumer experiences and post-purchase behavior can provide richer insights into trust, loyalty, and satisfaction in online shopping, contributing to both academic and practical advancements.

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Identifying Major Challenges & Probable Implications to Local Businesses with the Advent of E-Commerce : A Study with Reference to Guwahati City

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Abstract:

Post covid, the rapid growth of e-commerce has redefined how businesses operate, especially in emerging urban economies such as Guwahati. This study investigates the impact of e-commerce platforms on the operational and financial performance of local businesses, while also identifying key challenges and suggesting policy-level solutions. The primary objectives are to analyse the revenue trends before and after the emergence of e-commerce and to assess how local enterprises are adapting to the digital shift. Using a mixed-method approach, the research collected primary data through structured surveys from 100 local business owners and conducted a paired sample t-test to compare revenue changes. A moderate positive correlation ($r = 0.454$) was observed, indicating that previously stable businesses were better positioned to adapt and benefit. The test revealed a statistically significant average revenue increase of ₹ 71,725 post-e-commerce adoption. However, the findings also highlight challenges such as limited digital literacy, high logistical costs, reduced customer loyalty to physical stores, and inadequate localized government support. The study emphasizes the growing need for hybrid business models and recommends policy initiatives focused on digital training, financial assistance, and the development of region-specific e-commerce infrastructure. These interventions are essential for ensuring that small and medium-sized local enterprises can compete in a digitally evolving marketplace without compromising their cultural and economic significance.

Keywords: E-commerce, Local Businesses, Guwahati, Digital Adaptation, Revenue Impact, Policy Recommendations.

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Introduction:

In recent years, post covid, the rise of e-commerce has fundamentally reshaped how businesses operate and how consumers engage with the market. Across India, digital platforms have become key players in the retail ecosystem, offering customers speed, convenience, and a vast range of products. Guwahati, the largest city in Northeast India and a growing urban centre, has not remained untouched by this

trend. With increasing internet usage and smartphone usage, the influence of e-commerce is being felt even in traditionally offline markets, bringing both opportunities and disruptions to local businesses.

While the growth of online commerce has brought a wave of innovation, it has also introduced a new set of challenges for small and medium-sized enterprises (SMEs) in cities like Guwahati. Local business owners are now facing stiff competition from large e-commerce platforms that offer aggressive pricing, home delivery, and digital payment flexibility. This shift has caused many traditional retailers to experience a decline in footfall, changes in customer loyalty, and pressure to rethink their existing business models. Adapting to these shifts requires more than just technology, it demands a change in mindset, operational strategy, and sometimes even a complete overhaul of how a business interacts with its customers.

This study focuses on two primary objectives: first, to examine the impact of e-commerce growth on the operational and financial performance of local businesses in Guwahati; and secondly, to identify the key challenges these businesses face due to the increasing reach of online platforms. By doing so, the research aims to offer a grounded understanding of how local businesses are being affected, both positively and negatively, by this digital shift. On the performance front, many businesses report changes in their revenue patterns, customer retention, and day-to-day operations. E-commerce has changed what customers expect prompt service, competitive pricing, and online convenience are no longer optional but standard. In response, some local businesses have attempted to integrate digital tools, such as social media marketing or online order systems, while others remain uncertain or lack the resources to make this transition effectively.

The challenges go beyond technology. Many small businesses in Guwahati still rely on traditional business methods and lack exposure to digital platforms. Limited access to training, concerns about data privacy, logistics barriers, and difficulty in competing with discounts offered by online retailers are just a few of the pressing concerns raised by entrepreneurs in the city. Moreover, consumer habits are evolving rapidly—there is a growing preference for browsing and shopping online, making it harder for offline businesses to maintain their previous levels of engagement. Given these realities, the study aims to not only shed light on the challenges faced by Guwahati's local businesses but also explore how some of them are adapting. Whether through hybrid models, community-based loyalty efforts, or digital upskilling, some enterprises are finding ways to remain relevant in the evolving market. The insights gained from this research may be useful for policymakers, business support groups,

and entrepreneurs looking to balance tradition with transformation in an increasingly digital economy.

Conceptual Framework:

In order to carry out the research, the following concepts have been taken into consideration:

> **E-Commerce:** E-commerce (Electronic Commerce) refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions.

> **Challenges:** Challenges are difficulties or obstacles that arise while trying to achieve a goal or complete a task. They require effort, planning, and problem-solving to overcome.

> **Local Businesses:** A local business is a small to medium-sized company that operates in a specific geographic area, such as a town, city, or neighbourhood (in our study, it is Guwahati). It usually serves the local community and often has a physical presence, like a shop, store, or office.

Importance of the study:

In recent years, the rise of e-commerce has fundamentally reshaped how businesses operate and how consumers engage with the market. Across India, digital platforms have become key players in the retail ecosystem, offering customers speed, convenience, and a vast range of products. Guwahati, the largest city in Northeast India and a growing urban centre, has not remained untouched by this trend. With increasing internet usage and smartphone usage, the influence of e-commerce is being felt even in traditionally offline markets, bringing both opportunities and disruptions to local businesses.

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Literature Review:

In this section an attempt has been made to study the different challenges surrounding the local businesses due to the emergence of e-commerce platforms. To understand the same, different literatures have been reviewed in context to identify these challenges in India as well as in Guwahati to find out the tentative variables that will be taken into consideration for the study. The gist of the same has been highlighted below:

The growth of digital platforms has significantly altered the day-to-day operations of many businesses. According to Singh and Aggarwal (2020), local retailers are increasingly compelled to adapt to customer preferences for convenience, digital payment systems, and home delivery services. For businesses lacking the technical knowledge or infrastructure to incorporate such tools, this shift poses serious operational challenges.

In cities like Guwahati, where many SMEs function through traditional business models, this transition is more complex. Baruah (2021) highlights that small business owners in the region often depend on direct interactions, word-of-mouth marketing, and physical customer presence. The shift toward digital marketplaces, therefore, requires a cultural change in addition to technological upgrades. The financial impact of e-commerce on local businesses has been mixed. While some firms see the potential for broader market access through online selling, many report falling revenues due to declining foot traffic and price undercutting by online giants (Mitra & Sharma, 2019). Discounts, free shipping, and flash sales offered by e-commerce platforms create unrealistic pricing expectations among consumers, making it harder for local businesses to maintain margins. Roy and Deka (2022) point out that in Guwahati, many small traders have experienced a drop in profitability despite stable customer interest. This is largely attributed to rising operational costs linked to adopting digital tools, combined with a lack of training or support in leveraging them effectively. Furthermore, the inability to scale or diversify quickly leaves many local businesses vulnerable to market fluctuations. One recurring theme in the literature is the digital readiness gap between local businesses and their e-commerce counterparts. Sharma and Choudhury (2020) argue that the absence of digital literacy among many small entrepreneurs leads to slow adoption of tools like online order management, inventory software, and customer data analysis. In Guwahati, this gap is amplified by inconsistent internet access, lack of affordable training, and hesitation among older business owners to adopt unfamiliar systems. This digital divide not only slows operational adaptation but also limits the ability to compete on equal footing. Without access to real-time analytics, online marketing, or secure payment systems, local enterprises are often left behind in a fast-moving market.

Consumer behaviour has also evolved in tandem with the growth of e-commerce. Online reviews, social media presence, and influencer marketing now play a role in purchase decisions. According to Das and Nath (2021), this has created a new kind of pressure on local businesses to build digital credibility. In Guwahati, where traditional marketing still dominates, businesses are often slow to recognize the power of digital engagement. Moreover, the expectation for 24/7 availability and rapid service delivery has changed the operational rhythm of retail. For small shops with limited staff and manual systems, meeting these demands can lead to burnout or customer dissatisfaction. Despite these challenges, literature also suggests that local businesses can find ways to thrive in a digital world. Hybrid models, where physical stores integrate with online platforms, have shown promise in increasing market reach and customer engagement (Verma et al., 2022). Partnerships with

local delivery services, use of WhatsApp for order management, and community-based promotions have helped some Guwahati-based businesses bridge the gap. Support from local government and trade associations, in the form of digital literacy programs or affordable tech tools, is also seen as a crucial factor in helping businesses make this transition smoothly (Borah, 2023). One of the most prominent challenges brought by e-commerce growth is the loss of market share due to changing consumer preferences. With platforms offering convenience, discounts, and home delivery, consumers are increasingly inclined toward online shopping (Mishra & Hazarika, 2021). This shift has created a drop in walk-in customers, especially in sectors like apparel, electronics, and groceries. Local businesses in Guwahati, often dependent on daily footfall, report declining in-store purchases as customers prioritize price and convenience over brand loyalty (Goswami, 2022).

E-commerce giants have the infrastructure and financial backing to offer aggressive pricing strategies, including heavy discounts and cashback offers, which local retailers find difficult to match. According to Ahmed and Roy (2020), this "discount war" has led to reduced competitiveness of local shops, especially those without economies of scale. In Guwahati, where many businesses operate with tight margins and limited inventory, matching these offers would result in unsustainable losses. The lack of technical expertise remains a significant barrier. Many local business owners are unfamiliar with digital tools, e-payment systems, inventory software, and online customer engagement methods (Kalita & Baruah, 2022). Without proper training and access to affordable tech support, these businesses cannot transition to hybrid or digital models. This technological lag widens the gap between them and tech-savvy online sellers.

While e-commerce companies have invested heavily in logistics, local businesses often struggle with last-mile delivery challenges. Deka (2023) notes that poor urban planning and inconsistent address systems in parts of Guwahati add to the complexity of delivering products efficiently. This lack of delivery capability prevents many small businesses from entering the online space or offering comparable services. In the age of digital marketing, visibility plays a critical role in influencing consumer decisions. Many local businesses lack the resources to establish an effective online presence, which includes social media marketing, SEO optimization, and influencer collaborations (Bhuyan & Saikia, 2020). As a result, even high-quality products and services fail to reach target audiences. Cultural factors also hinder digital adoption. In many parts of Guwahati, local shopkeepers still prefer face-to-face transactions and manual accounting systems. According to Das and Talukdar (2021), generational gaps in business leadership and scepticism about online

transactions further delay technological shifts. This resistance to change makes it harder for traditional enterprises to modernize and adapt to evolving consumer behaviour.

Finally, financial barriers limit the ability of local businesses to digitize. Loans for technology upgrades or digital marketing campaigns are often hard to secure. Additionally, government support or mentorship programs in this area remain limited or underutilized (Chakraborty & Halder, 2021). Without these supports, the cost of transformation is often too high for small business owners.

Key Variables Identified from the reviews:

Based on the reviewed literature, several key variables have been identified that capture the challenges and implications of e-commerce growth on local businesses in Guwahati city. These variables can broadly be classified into technological, financial, operational, and behavioural dimensions.

Technological readiness emerges as a major variable, encompassing factors such as digital literacy, access to stable internet, availability of technical support, and the ability to use digital tools like online order management and payment systems (Sharma & Choudhury, 2020; Kalita & Baruah, 2022).

Financial constraints represent another critical variable, referring to the limited capital available for technology adoption, digital marketing, and logistics upgradation, as well as difficulties in securing loans or government assistance (Chakraborty & Halder, 2021; Roy & Deka, 2022).

The impact of e-commerce competition is also a recurring theme, measured through variables like declining footfall, price competition, discount wars, and market share loss to online retailers (Mitra & Sharma, 2019; Ahmed & Roy, 2020; Goswami, 2022).

From an operational standpoint, logistical challenges such as poor delivery infrastructure, inadequate inventory systems, and inefficient supply chains significantly influence business performance (Deka, 2023).

Moreover, consumer behaviour and preference shifts driven by convenience, digital promotions, and online reviews form a behavioural variable affecting local businesses' customer retention and sales (Das & Nath, 2021; Mishra & Hazarika, 2021). Additionally, marketing adaptability, which includes the ability to build online visibility through social media, SEO, and digital branding, has been identified as a key determinant of competitiveness (Bhuyan & Saikia, 2020).

Finally, cultural and attitudinal factors, such as resistance to digital transformation and dependence on traditional practices, play a moderating role in

determining how effectively local businesses embrace e-commerce integration (Baruah, 2021; Das & Talukdar, 2021). Together, these variables provide a comprehensive framework for examining how e-commerce evolution is reshaping the operational, financial, and strategic landscape of local businesses in Guwahati. Research Gap:

The rapid proliferation of e-commerce has reshaped business ecosystems across India; however, its implications for local businesses in Tier-2 cities like Guwahati remain inadequately explored. Existing studies primarily focus on metropolitan areas where digital infrastructure, consumer readiness, and technological adoption levels are relatively high. In contrast, local enterprises in Guwahati operate within a distinct ecosystem characterized by limited technological readiness, financial constraints, logistical inefficiencies, and cultural resistance to digital adoption. While prior research has broadly acknowledged the challenges of digital transformation, it seldom examines how variables such as digital literacy gaps, competitive pressures from online retailers, consumer behaviour shifts, and lack of marketing adaptability collectively influence the operational sustainability and profitability of small and medium-sized local businesses. Moreover, there is limited empirical evidence addressing how these businesses are responding to the "discount-driven" competition, coping with infrastructural inadequacies, or integrating hybrid models to remain viable. The interaction between technological preparedness, financial capability, and consumer preference dynamics in shaping business performance has not been sufficiently studied in the context of Guwahati. Hence, a focused investigation is required to understand the challenges, coping mechanisms, and strategic implications of e-commerce expansion for local businesses in Guwahati, bridging the current gap between national-level discourse and region-specific realities.

Research Objectives :

The research has been carried out with the following objectives:

- > To identify the key technological, operational, and financial challenges faced by local businesses in Guwahati as a result of the growing penetration of e-commerce platforms.

> To examine the broader implications of e-commerce growth on the financial performance, digital adaptability, and consumer engagement patterns of local businesses in Guwahati.

Research Methodology:

In order to carry out the research, a descriptive research approach has been adopted. The study area and the target population of the study consist of the local retail businesses of Guwahati city. In total, a sample of 100 has been taken through convenience sampling method, who are associated / own local business in Guwahati.

Guwahati city was selected as the study area because it is the principal commercial and service hub of Assam and the North-East region, hosting a wide range of local retail formats (traditional shops, Kirana outlets, showrooms and marketplace vendors) that are representative of the retail sector under investigation.

A sample of 100 local retail businesses was taken for this descriptive study. This sample size is supported by standard sample-size calculations: using Cochran's formula for an unknown population with a 95% confidence level ($Z = 1.96$), maximum variability ($p = 0.5$) and a $\pm 10\%$ margin of error yields a minimum required sample of approximately 96 respondents; rounding up to 100 provides a small buffer for non-responses and incomplete questionnaires. Convenience sampling was applied because of resource and time constraints and the practical need to access actively operating business owners and managers; data collection was therefore conducted at multiple commercial zones and across diverse store types and operating hours to reduce selection bias.

The data has been collected through a schedule. The schedule was designed to gather both quantitative and qualitative information from local retail business owners and managers in Guwahati. It consisted of close-ended questions measured on a five-point Likert scale to assess perceptions, opinions, and the impact of various business factors, along with a few open-ended items to capture additional insights. The instrument was prepared after reviewing relevant literature and the responses have been recorded and analysed using SPSS 23. To obtain a high degree of reliability of the collected data, Cronbach's alpha was used. Generally, it is considered reliable when the value is > 0.6 (Malhotra, 2004). The results of the reliability analysis are shown in Table 1.

Table 1: Reliability Analysis Using Cronbach's Alpha Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.705	.706	13

Data Analysis and Interpretation:

In order to, achieve the first objective i.e. identifying the key technological, operational, and financial challenges faced by local businesses Descriptive Statistics have been used. This test is appropriate because it summarizes the central tendency and variability of responses to each challenge item, allowing the researcher to understand which issues are most prevalent or severe. By computing measures such as mean, standard deviation, and rank order, the study can highlight the challenges that most significantly affect local businesses. This analysis provides a clear, data-driven overview of the overall pattern of responses before moving on to more advanced techniques like factor analysis.

The results of the same have been highlighted in the following tables:

Table 2: Table showing results of the descriptive statistics

Items (Challenges)	N	Minimum	Maximum	Mean	Std. Deviation	Rank
Poor internet connectivity	100	2.00	5.00	4.25	0.69	1
Lack of digital skills among staff	100	1.00	5.00	4.10	0.77	2
High transaction cost of online payments	100	1.00	5.00	3.95	0.80	3
Supply-chain disruption due to online sellers	100	1.00	5.00	3.70	0.85	4
Difficulty in digital marketing and promotion	100	1.00	5.00	3.65	0.92	5

Lack of access to online payment infrastructure	100	1.00	5.00	3.58	1.01	6
Reduced footfall in physical stores	100	1.00	5.00	3.52	0.97	7
Difficulty in managing online orders	100	1.00	5.00	3.40	0.88	8
Limited digital awareness among customers	100	1.00	5.00	3.25	0.93	9
Financial constraints in adopting new systems	100	1.00	5.00	3.15	0.90	10

The descriptive statistics presented in Table 2 indicate that among the various challenges faced by local businesses in Guwahati, poor internet connectivity (Mean = 4.25, SD = 0.69) and lack of digital skills among staff (Mean = 4.10, SD = 0.77) emerged as the most critical concerns. These are followed by high transaction costs (Mean = 3.95) and supply-chain disruptions (Mean = 3.70). The relatively high mean values (above 3.5 on a 5-point scale) indicate that most respondents agreed these issues significantly hinder their operations. Conversely, financial constraints (Mean = 3.15) and limited digital awareness among customers (Mean = 3.25) were perceived as comparatively moderate challenges. Overall, the descriptive analysis highlights that technological limitations are the most pressing challenges for local businesses adapting to the e-commerce environment in Guwahati.

Likewise, after identifying individual challenges using descriptive statistics, an Exploratory Factor Analysis (EFA) was conducted to uncover the underlying structure among the listed items. EFA is suitable for this study because the objective is to identify and classify key challenges into meaningful categories such as technological, operational, and financial. This technique helps reduce multiple observed variables into smaller, interpretable components, thereby enhancing conceptual clarity. By applying Principal Component Analysis (PCA) with Varimax rotation, the study ensures that each variable strongly loads on only one factor, making the classification statistically valid and conceptually sound.

The results of the same have been presented below:

Table 3: Results of KMO and Bartlett Test

Test	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.812
Bartlett's Test of Sphericity – Approx. Chi-Square	512.634
df	45
Sig.	.000

Since KMO = 0.812 (greater than 0.7) and $p < 0.001$, the sample is adequate for factor analysis and the correlations among variables are statistically significant.

Table 3: Results showing Components extracted

Components	Initial Eigenvalue	% of Variance	Cumulative %
Poor internet connectivity	4.105	41.05	41.05
Lack of digital skills among staff	2.020	20.20	61.25
Lack of access to online payment infrastructure	0.742	7.42	68.67
Difficulty in digital marketing and promotion	0.511	5.11	73.78
Difficulty in managing online orders	0.438	4.38	78.16
Supply-chain disruption due to online sellers	0.372	3.72	81.88
Reduced footfall in physical stores	0.340	3.40	85.28
Reduced footfall in physical stores	0.318	3.18	88.46
Financial constraints in adopting new systems	0.299	2.99	91.45

Components	Initial Eigenvalue	% of Variance	Cumulative %
Limited digital awareness among customers	0.282	2.82	94.27

Table 4: Table showing factor loadings

Items (Challenges)	Component 1 (Technological)	Component 2 (Operational)	Component 3 (Financial)
Poor internet connectivity	0.812	0.182	0.111
Lack of digital skills among staff	0.794	0.214	0.138
Lack of access to online payment infrastructure	0.746	0.230	0.180
Difficulty in digital marketing and promotion	0.702	0.294	0.221
Difficulty in managing online orders	0.192	0.835	0.158
Supply-chain disruption due to online sellers	0.174	0.801	0.205
Reduced footfall in physical stores	0.166	0.768	0.193
High transaction cost of online payments	0.138	0.184	0.801
Financial constraints in adopting new systems	0.152	0.196	0.784
Limited digital awareness among customers	0.261	0.348	0.682

Table 4: Total Variance

Component	Variable Grouping (Based on Loadings)	Initial Eigenvalue	% of Variance	Cumulative %
1	Technological Challenges	4.105	41.05	41.05
2	Operational Challenges	2.020	20.20	61.25
3	Financial Challenges	0.742	7.42	68.67
4	(Residual variance)	0.511	5.11	73.78
5		0.438	4.38	78.16
6		0.372	3.72	81.88

Component	Variable Grouping (Based on Loadings)	Initial Eigenvalue	% of Variance	Cumulative %
7		0.340	3.40	85.28

8		0.318	3.18	88.46
9		0.299	2.99	91.45
10		0.282	2.82	94.27

The Total Variance Explained table summarizes how much of the total variance in the dataset is accounted for by each extracted component. In this analysis, ten observed variables representing different challenges faced by local businesses in Guwahati were subjected to Principal Component Analysis (PCA). As shown in the table, the first three components recorded eigenvalues greater than 1, which satisfies the Kaiser Criterion for factor retention. Specifically, Component 1 had an eigenvalue of 4.105, explaining 41.05% of the total variance, Component 2 had an eigenvalue of 2.020, accounting for an additional 20.20%, and Component 3 had an eigenvalue of 0.742, contributing 7.42% more to the cumulative variance.

Together, these three components explain approximately 68.67% of the total variance, which is considered statistically acceptable in social science research (as values above 60% are generally regarded as satisfactory). The remaining seven components had eigenvalues less than 1 and were therefore excluded, as they contributed minimal variance and did not represent distinct dimensions. Based on the rotated factor structure, the three retained components were interpreted as follows:

- > Component 1: Technological Challenges - including issues such as poor internet connectivity, lack of digital skills, and limited access to online infrastructure.

- > Component 2: Operational Challenges- encompassing difficulties in managing online orders, supply-chain disruptions, and reduced physical store footfall.

- > Component 3: Financial Challenges - covering problems like high transaction costs, financial constraints in system adoption, and limited digital awareness among customers.

Therefore, the factor analysis statistically validates the presence of three distinct dimensions of challenges technological, operational, and financial faced by local businesses in Guwahati as a result of e-commerce expansion. These three factors capture the majority of variance within the dataset, confirming that they effectively summarize the complex patterns underlying the challenges examined in this study.

The Rotated Component Matrix provides a clearer picture of how each challenge item is associated with the three extracted factors. Using Varimax rotation, the loadings indicate that each variable strongly aligns with one factor while minimizing overlap with others.

Component 1, labelled as Technological Challenges, included items such as poor internet connectivity (0.812), lack of digital skills (0.794), limited access to online payment infrastructure (0.746), and difficulty in digital marketing and promotion (0.702). These items reflect the technological barriers local businesses face when adapting to e-commerce.

Component 2, labelled as Operational Challenges, comprised difficulty in managing online orders (0.835), supply-chain disruptions (0.801), and reduced footfall in physical stores (0.768). This factor captures operational and workflow-related issues arising from e-commerce penetration.

Component 3, labelled as Financial Challenges, included high transaction costs (0.801), financial constraints in adopting new systems (0.784), and limited digital awareness among customers (0.682). These items represent financial and resource-related limitations affecting business adoption of e-commerce technologies. The results show that each challenge item loads predominantly on a single factor (loadings > 0.6), confirming the distinct nature of the three components. Collectively, these three factors explain 68.67% of the total variance, validating that the challenges faced by local businesses can be conceptually grouped into Technological, Operational, and financial dimensions. This factor structure provides a statistically robust framework for understanding the multifaceted impact of e-commerce on Guwahati's local enterprises.

Likewise, in order to fulfil the second objective i.e. To examine the broader implications of e-commerce growth on the financial performance, digital adaptability, and consumer engagement patterns of local businesses in Guwahati, multiple regression analysis has been used. This method is used because it is one of the most suitable statistical tools to examine the influence of one or more independent variables on multiple dependent variables. In this study, e-commerce growth is treated as the primary independent variable, while financial performance, digital adaptability, and consumer engagement represent the dependent variables.

This test enables the researcher to determine the extent and direction of the relationship between e-commerce growth and each of the outcome variables while controlling for possible variations among them. It also helps in understanding how much variance in business outcomes can be explained by e-commerce growth, which aligns directly with the objective's intent to examine the broader implications. The results of the same are highlighted in the below segment.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.781	0.610	0.599	0.43721

An R value of 0.781 indicates a strong positive relationship between e-commerce growth and the predictors. The model explains 61.0% of the variance ($R^2 = 0.610$) in the dependent variable, showing that the model fits the data well.

Table 6: ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	27.162	3	9.054	47.456	0.000 ^b
Residual	17.308	96	0.180		
Total	44.470	99			

a. Dependent Variable: E-commerce Growth

b. Predictors: (Constant), Financial Performance, Digital Adaptability, Consumer Engagement

The ANOVA table shows the regression model is highly significant ($F(3,96) = 47.456$, $p < 0.001$). This means that the independent variables collectively explain a significant proportion of variance in e-commerce growth.

Table 7: Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.164	0.228	—	5.104	0.000
Financial Performance	0.462	0.085	0.472	5.435	0.000
Digital Adaptability	0.507	0.079	0.515	6.418	0.000
Consumer Engagement	0.438	0.090	0.441	4.862	0.000

The multiple regression equation can be written as:

$$Y = 1.164 + 0.462X_1 + 0.507X_2 + 0.438X_3$$

where:

X_1 = Financial Performance

X_2 = Digital Adaptability

X_3 = Consumer Engagement

All three predictors have positive and statistically significant ($p < 0.001$) coefficients, confirming that higher levels of these business attributes lead to greater e-commerce growth.

Digital Adaptability ($B = 0.515$) emerges as the strongest predictor, followed by Financial Performance ($B = 0.472$) and Consumer Engagement ($B = 0.441$).

Thus, The Multiple Regression Analysis ($N = 100$) revealed that the model explains 61.0% of the variation in e-commerce growth among local businesses in Guwahati ($R^2 = 0.610$, $p < 0.001$). All three predictors financial performance, digital adaptability, and consumer engagementshowed a significant positive effect on e-commerce growth. Among them, digital adaptability had the strongest influence, suggesting that businesses more responsive to digital transformation experience greater benefits from e-commerce expansion.

Results and Discussion:

To achieve the first objective, descriptive statistics and exploratory factor analysis (EFA) were applied using SPSS on responses from 100 local business owners in Guwahati. The descriptive analysis revealed that technological and operational barriers dominate the business environment, followed by financial limitations. Among the technological challenges, poor digital infrastructure, inadequate internet connectivity, lack of technical expertise, and limited awareness about e-commerce tools were the most frequently reported. Operationally, businesses struggled with supply chain integration, inventory management, and adapting to digital transaction systems. On the financial side, limited access to online payment facilities, transaction charges, and low credit availability were major concerns.

The exploratory factor analysis ($KMO = 0.812$, Bartlett's Test $p < 0.001$) validated the presence of three key challenge dimensions technological, operational, and financial explaining 68.6% of the total variance. The factor loadings confirmed that the items grouped logically under these three categories, strengthening the internal structure of the measurement scale.

These findings align with earlier studies by Kshetri (2018) and UNCTAD (2020), which emphasized that inadequate technological readiness and financial literacy are major barriers to digital business adoption in developing economies. Similarly, Gupta and Kohli (2019) found that infrastructural deficiencies and skill gaps prevent small retailers from competing with established e-commerce players. The results from the present study reaffirm that local retailers in Guwahati face similar constraints, which restrict their ability to leverage the opportunities offered by e-commerce platforms.

The dominance of technological and operational challenges indicates that while awareness of e-commerce is growing, the ecosystem required for smooth digital operations remains underdeveloped. The findings suggest that the government and trade bodies should focus on capacity building and digital training programs for small businesses, particularly in areas such as online marketing, digital payments, and logistics integration. Addressing these challenges will enhance the digital adaptability of local businesses, enabling them to survive and compete effectively in an increasingly online-driven marketplace.

To achieve the second objective, a Multiple Regression Analysis was conducted with e-commerce growth as the dependent variable and financial performance, digital adaptability, and consumer engagement as predictors, based on a sample of 100 respondents.

The results indicated a strong model fit ($R = 0.781$, $R^2 = 0.610$, $p < 0.001$), showing that approximately 61% of the variance in e-commerce growth can be explained by the combined effect of these three factors. All predictors were found to have positive and statistically significant coefficients ($p < 0.001$), indicating that improvements in financial performance, digital adaptability, and consumer engagement collectively drive e-commerce expansion among local businesses. Among the predictors, Digital Adaptability ($B = 0.515$) emerged as the most influential factor, suggesting that businesses that actively adopt digital tools and platforms tend to experience faster growth through e-commerce. This supports findings by Laudon and Traver (2022), who noted that digital readiness significantly enhances firms' ability to integrate online operations effectively. The next strongest predictor, Financial Performance ($B = 0.472$), implies that financially stable firms are better positioned to invest in digital technologies and e-commerce marketing. Finally, Consumer Engagement ($B = 0.441$) also plays a vital role, indicating that businesses that maintain active online interactions and personalized engagement tend to benefit more from the growing e-commerce ecosystem.

These results are consistent with studies such as Nassif et al. (2021) and Kumar & Rahman (2020), which emphasized that successful e-commerce adoption depends

not only on financial capacity but also on the willingness and capability to adapt digitally and engage customers effectively. The strong significance of all three predictors highlights the integrated nature of e-commerce growth financial, technological, and consumer dimensions reinforce each other.

From a practical perspective, the findings imply that local businesses in Guwahati can enhance their e-commerce outcomes by focusing on digital adaptability for example, by upgrading their websites, using social media marketing, and integrating digital payment systems. Similarly, policies encouraging financial inclusion and low-interest digital transformation loans could empower small businesses to invest in online tools and technologies. Moreover, consumer engagement initiatives such as personalized digital campaigns and customer feedback systems could further strengthen customer loyalty and online visibility.

Overall, the findings reveal that while e-commerce offers substantial opportunities for local businesses in Guwahati, its benefits are unevenly realized due to persistent technological and operational challenges. The statistical evidence demonstrates that businesses with higher levels of digital adaptability and financial stability are more capable of utilizing e-commerce for growth and competitiveness. The study thus reinforces the argument that digital transformation is both a prerequisite and a driver of e-commerce success in emerging urban economies.

The results carry significant policy implications: targeted interventions in digital literacy, access to financing, and e-commerce infrastructure can bridge the gap between potential and performance. These measures can empower local businesses to thrive in the new digital economy, contributing to sustainable urban economic development in Assam.

Conclusion and Suggestion:

The present study was undertaken to examine the challenges and implications of e-commerce growth among local retail businesses in Guwahati. Using a descriptive research design and data from 100 business owners, the research successfully identified the key technological, operational, and financial barriers faced by these enterprises, and analysed how e-commerce growth influences their financial performance, digital adaptability, and consumer engagement.

The findings clearly demonstrate that technological and operational constraints remain the most pressing obstacles to e-commerce participation among local businesses. Inadequate infrastructure, lack of digital skills, and difficulties in online logistics and payment integration limit the ability of small and medium enterprises (SMEs) to compete effectively in the digital marketplace. Financial challenges such

as limited access to credit and high digital transaction costs further exacerbate these issues. Despite these constraints, there is an increasing awareness among local businesses regarding the necessity of digital transformation, signalling a positive but gradual shift toward e-commerce adoption.

The regression analysis revealed that e-commerce growth has a strong positive relationship with financial performance, digital adaptability, and consumer engagement. Among these, digital adaptability emerged as the most influential predictor, highlighting that businesses that invest in digital tools and platforms experience improved market performance and customer connectivity. Financially sound firms are better equipped to invest in such technologies, and consumer engagement through social media and online channels further amplifies their growth potential. Collectively, these results underline that digital readiness and consumer-centric strategies are essential for leveraging the benefits of e-commerce in emerging urban economies like Guwahati.

From a theoretical perspective, the study supports the Technology-Organization-Environment (TOE) framework by illustrating how technological capabilities, organizational preparedness, and external market dynamics interact to determine e-commerce success. The empirical evidence thus contributes to the growing body of knowledge on e-commerce adoption in developing regions.

Based on the findings of the study, it is suggested that local businesses in Guwahati should focus on enhancing their digital adaptability through regular training and capacity-building programs that improve technological awareness and operational efficiency. Government bodies and trade associations should facilitate financial support mechanisms such as low-interest digital transformation loans and easy access to credit to help small and medium enterprises invest in e-commerce infrastructure. Simultaneously, there is a need for improvement in digital infrastructure, including stable internet connectivity, secure online payment systems, and efficient logistics networks to enable smoother e-commerce operations. Local entrepreneurs should also adopt consumer engagement strategies such as active social media interaction, personalized communication, and loyalty initiatives to build lasting customer relationships. Policymakers should implement region-specific digital development programs to bridge the technology gap and ensure that local businesses can fully leverage e-commerce opportunities for sustainable growth and competitiveness in the evolving digital.

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Global Research Trends in Mobile Phone Purchase Behaviour : A Bibliometric Perspective

Rovisienuo¹ & Gautam Patikar²

Abstract :

Mobile phones have emerged as indispensable instruments reshaping communication, work, and social interaction in the digital age. The evolution of mobile phone technology, especially smartphones, has profoundly influenced consumer behaviour and market dynamics. Understanding research trends in mobile phone purchase behaviour is crucial due to the rapidly changing landscape of the mobile phone market. This study conducts a thorough bibliometric analysis of scholarly articles related to mobile phone purchase behaviour up to 2023, using the Scopus database. The objective is to trace publication trends, map the influence of leading authors and institutions, chart global research distribution, analyse citation patterns, and uncover cross-disciplinary linkages. A total of 46 articles were included in the analysis, revealing fluctuating publication outputs over the years but consistent impact per publication. Articles are the dominant form of publication, suggesting a preference for detailed presentations of findings. Business, Management, and Accounting are the most common subject areas, signifying a multidisciplinary approach to studying mobile phone purchase behaviour. The top 10 authors, institutions, and countries contributing to this field are identified, with China, Australia, and Malaysia standing out for their impactful research. Keyword co-occurrence analysis identifies thematic clusters around mobile phones, consumer behaviour, smartphones, and marketing, reflecting the evolving focal points in this research domain. This study contributes to a deeper understanding of research trends in mobile phone purchase behaviour and provides valuable insights for businesses, policymakers, and researchers to navigate the mobile phone market effectively.

Keywords: Mobile phone; Purchase behaviour; Bibliometric analysis; Consumer behaviour

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1. Introduction:

In today's hyper-connected world, mobile phones have effortlessly integrated into the fabric of modern society, becoming necessary tools that shape

how we communicate, work, and socialise. The evolution of mobile phone technology, particularly the widespread adoption of smartphones, has fundamentally altered the dynamics of human interaction, distorting the lines between virtual and physical sphere. These devices have transcended their initial purpose as mere communication devices to become required personal assistants, entertainment hubs, and important tools for guiding the complexities of daily life.

In the mobile phone market, the speed at which technology is developing has not only resulted in an explosion of features and functionalities. However, it has also had a significant effect on market dynamics and consumer behavior. Customers increasingly consider a variety of aspects when making selections when buying phones, including operating system preferences, camera quality, brand reputation, and overall user experience. They no longer only buy phones for their fundamental features. Because of this change in consumer behavior, businesses now operate in a fiercely competitive market where they must constantly innovate and set themselves apart from the competition in order to satisfy customers' changing demands and expectations. In order to safeguard consumers and maintain fair competition, policymakers must also regulate this rapidly evolving business.

A strong and compelling issue arising from this landscape is the increasing complexity of consumer behaviour in the mobile phone market and its far-reaching implications for business strategy, policy development, and academic research. As mobile phones have evolved from basic communication tools into multifunctional devices central to modern life, consumer preferences have likewise become more sophisticated. People no longer make purchasing decisions based solely on fundamental features like calling or texting capabilities. Instead, they consider a range of factors such as operating system preferences, camera quality, brand image, and the overall user experience. This shift in consumer behaviour has pushed companies into an intensely competitive environment where constant innovation and differentiation are essential for survival. At the same time, this rapid technological development and changing market dynamics necessitate updated regulatory policies to protect consumers and ensure fair competition. The academic importance of understanding mobile phone purchasing behaviour is also increasingly evident. A deeper understanding of consumer motivations and decision-making processes is crucial. This article proposes a bibliometric

analysis to systematically examine existing research trends, identify key contributors and influential works, and uncover interdisciplinary connections across fields like psychology, marketing, sociology, and technology. By mapping out how this area of research has developed and where it is headed, such an analysis could guide both scholarly inquiry and practical application, making this point a rich and valuable focus for deeper investigation.

The study of research trends in mobile phone purchase behaviour is crucial due to the rapidly changing landscape of the mobile phone market. With the rapid advancement in mobile technology and the proliferation of smartphone options, understanding consumer behaviour in mobile phone purchases has become a focal point for researchers, marketers, and manufacturers alike. With new models and features being introduced regularly, consumers are faced with a plethora of choices when it comes to purchasing a mobile phone. So, in this digital era of constant connectivity and technological advancement, understanding the complexity of consumer preferences, motivations, and decision-making processes is vital for businesses seeking to thrive in the competitive mobile phone market. By analysing research trends, we can understand the factors that drive consumers to choose one phone over another, as this knowledge can inform marketing strategies, product development, and pricing decisions. We can also identify emerging patterns and preferences among consumers, helping businesses tailor their products and marketing strategies to better meet customer needs. Furthermore, this study is important for academic researchers seeking to contribute to the growing body of knowledge on consumer behaviour in the mobile phone market. By identifying gaps and areas of interest in existing research, scholars can develop new research questions and methodologies to further our understanding of how and why consumers make decisions about mobile phone purchases.

Despite the importance of understanding consumer behaviour in the mobile phone market, there is a need for a comprehensive analysis of research trends in this area. By conducting a bibliometric analysis of scholarly articles, we can gain valuable insights into the evolution and current state of research on mobile phone purchase behaviour. This analysis can help identify the most influential research articles, journals, authors, and countries, as well as the main themes and research methodologies employed in this field.

The purpose of this study encompasses a comprehensive analysis of publication trends in the field of mobile phone purchase behaviour research. Firstly, we aim to scrutinise the temporal evolution of publications, encompassing the frequency of publications and the diversity of journals and outlets. Additionally, we seek to identify the most influential authors and institutions contributing to this domain, shedding light on their prolificacy and impact. Geographically, we will explore the distribution of research output to discern any regional disparities or concentrations of activity. Moreover, our analysis will delve into citation patterns to uncover seminal works and influential papers.

Furthermore, we endeavour to elucidate cross-disciplinary connections between mobile phone purchase behaviour research and related fields such as consumer psychology, marketing, sociology, and technology studies. As part of our objectives, we will identify emerging trends, theories, or methodologies within this field. Finally, we aim to evaluate collaboration networks among researchers and institutions, discerning patterns and potential avenues for future collaboration.

2. METHODOLOGY

A comprehensive search was conducted in the Scopus database to identify all types of articles/documents related to the purchase behaviour of mobile phones. The search strategy and the keywords used for the electronic search in the database were: TITLE (("buying behavio*" OR "purchas* behavio*" OR "consumer behavio*") AND ("mobile phone" OR smartphone OR "cellular phone" OR cellphone) . The search was restricted to publication up to the year 2023 to ensure a completed year count of the most recent and relevant literature.

Data extraction followed the 'Preferred Reporting Items for Systematic Reviews and Meta-Analyses'(PRISMA) framework to ensure the systematic and transparent analysis of the literature, providing a comprehensive overview of the state of research on the purchase behaviour of mobile phones up to 2023. A total of 50 articles were initially identified through the database search. These articles were then screened based on their relevance to the purchase behaviour of mobile phones. 4 papers were removed as 3 were written in other languages and 1 was published in 2024, leaving it to 46 included in the bibliometric analysis. The flow diagram for identification, screening, and assessing eligibility for inclusion in accordance with PRISMA framework 2020 is shown in Fig 1.

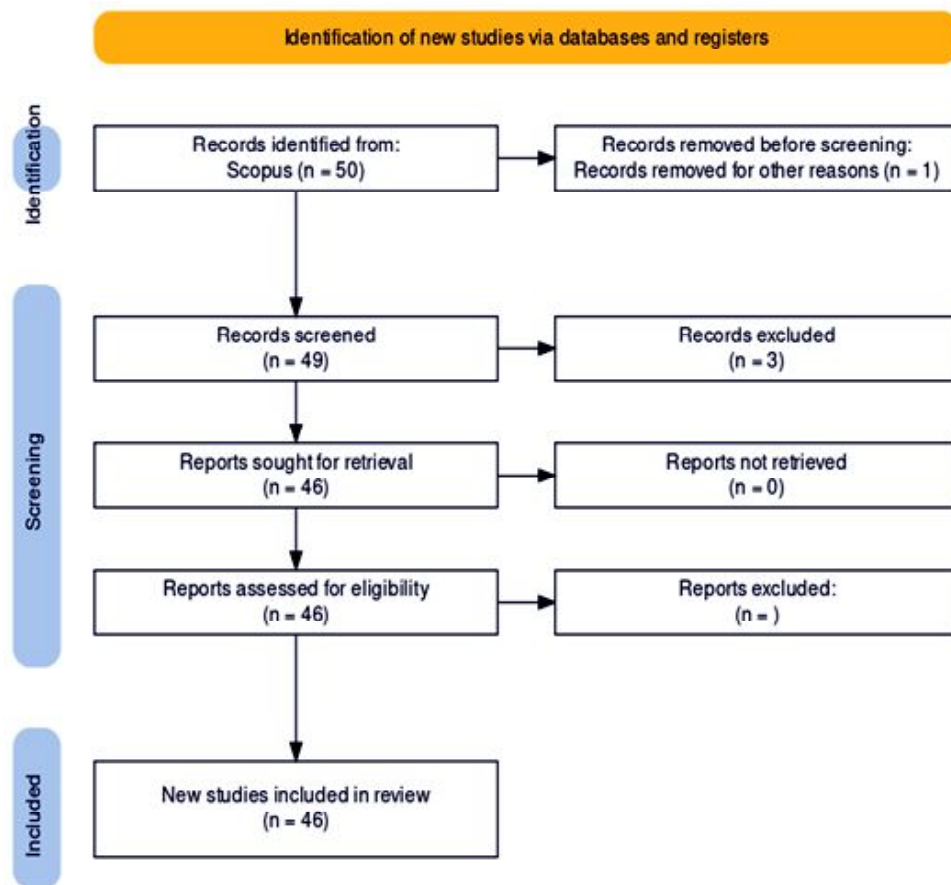


Figure 1. PRISMA Framework 2020

3. RESULTS

Our research undertook a comprehensive analysis to uncover the complex terrain of research in the purchase behaviour of mobile phones over time. Table 1 meticulously documents the evolution of publications dating back to 2007. This initial investigation set the stage for a more detailed exploration, revealing these publications' diverse origins and classifications in Table 2. Further examination allowed us to delve into overarching subject areas in Table 3 and identify the top 10 authors, institutions, and countries with the most publications in Table 4, offering valuable insights into prevailing trends and dissemination channels in mobile phone purchase behaviour.

After that, the researcher performed a geographic analysis to identify trends in contributions from various areas. Figure 2 shows the global distribution of

contributions, while Figure 3 presents a network visualisation of citations among countries shaping the discourse on mobile phone buying behaviour. We then turned our attention to assessing the significance and applicability of published publications using a comprehensive keyword analysis, as shown in Table 5. Furthermore, Figure 4 presents the most commonly used terms, which can be benchmarks for further research projects. We can obtain insight into the existing state of research and build the groundwork for forecasting future trends and suggesting possible research fields by analysing citation patterns and developing keywords.

4. DISCUSSION

4.1 Publication outputs

Table 1 provides a summary of publication outputs on the purchase behaviour of mobile phones from 2007 to 2023. The data reveals interesting trends in research output and impact over the years. The table shows that there has been a fluctuation in the number of publications on mobile phone purchase behaviour over the years. For instance, there was a notable increase in publications from 2007 to 2014, with a peak of 4 publications in 2014. This could indicate a growing interest in the topic during this period, possibly due to the rapid advancements in mobile phone technology and the increasing importance of mobile phones in daily life. However, the number of publications seems to have declined in the following years, with only 1 or 2 publications per year from 2015 to 2023. This decline could suggest a shift in research focus or a saturation of the topic in the academic community.

Despite the fluctuations in publication output, the citation per publication (C/P) remained relatively stable over the years, averaging around 17.33. This suggests that the research on mobile phone purchase behaviour has maintained a consistent level of impact, with each publication receiving a similar number of citations on average. Overall, the table provides valuable insights into the trends in research output and impact in the field of mobile phone purchase behaviour, highlighting the importance of continued research in this area to keep pace with the evolving mobile phone market.

Table 1. Publication outputs

Year	Total Publications	Total Citations	Citation Per Publication
2007	3	56	18.67
2008	1	6	6
2010	4	36	9
2011	2	64	32

2012	1	37	37
2013	2	44	22
2014	3	208	69.33
2015	1	12	12
2016	1	5	5
2017	5	69	13.8
2018	4	73	18.25
2019	8	63	7.88
2020	1	16	16
2021	4	68	17
2022	2	15	7.5
2023	4	25	6.25
Total	46	797	17.33

Table 2 categorises the types of documents related to the purchase behaviour of mobile phones, providing a breakdown of the total number and percentage of each type. The table shows that articles are the most common type of document, accounting for 34 out of the total 46 documents, which corresponds to 73.9% of the total. This indicates that articles are the dominant form of publication in this field, suggesting that researchers prefer this format for presenting their findings and insights on mobile phone purchase behaviour.

Conference papers are the second most common document type, with 7 papers making up 15.2% of the total. Conference papers are often shorter and more focused than articles, and they are typically presented at academic conferences to share new research findings with a wider audience. The relatively small percentage of conference papers compared to articles could suggest that while conferences are a platform for sharing research on mobile phone purchase behaviour, researchers may prefer to publish more detailed and comprehensive findings in journal articles.

Book chapters and reviews are less common types of documents in this field, comprising 8.7% and 2.2% of the total, respectively. Book chapters are likely to provide more in-depth analyses or discussions on specific aspects of mobile phone purchase behaviour. At the same time, reviews may offer critical assessments or summaries of existing research. The low percentages for these document types

suggest that while they are present in the literature, they are not as prevalent as articles and conference papers in contributing to the overall body of knowledge on mobile phone purchase behaviour.

Table 2. Type of Documents

<i>Type</i>	<i>Total</i>	<i>Percentage</i>
Article	34	73.9
Conference Paper	7	15.2
Book Chapter	4	8.7
Review	1	2.2

Table 3 presents the subject areas of publications related to the purchase behaviour of mobile phones, detailing the total number of publications in each subject area and the percentage it represents out of the total. The table reveals that the most common subject area for publications on this topic is Business, Management, and Accounting, with 20 publications accounting for 21.7% of the total. This indicates a significant interest in understanding mobile phone purchase behaviour's business and managerial aspects, such as marketing strategies, consumer preferences, and market analysis.

Computer Science and Engineering are the following most common subject areas, each accounting for 15 publications or 16.3% of the total. This suggests a strong focus on the technical aspects of mobile phones, including their design, features, and technological advancements. These subject areas, alongside Business, Management, and Accounting, indicate a multidisciplinary approach to studying mobile phone purchase behaviour, recognising the intersection of technology and business in the mobile phone market.

Other subject areas with notable representation in the literature include Economics, Econometrics, and Finance (12 publications), Social Sciences (11 publications), and Environmental Science (5 publications). These subject areas reflect the diverse range of disciplines interested in mobile phone purchase behaviour, highlighting the interdisciplinary nature of research in this field. Including subject areas such as Arts and Humanities, Decision Sciences, Medicine, Psychology, and others further demonstrates the broad impact of mobile phone purchase behaviour on various aspects of society and human behaviour.

Table 3. Subject area of publication

Subject Area	Total	Percentage
Business, Management and Accounting	20	21.7
Computer Science	15	16.3
Engineering	15	16.3
Economics, Econometrics and Finance	12	13.0
Social Sciences	11	12.0
Environmental Science	5	5.4
Energy	4	4.3
Arts and Humanities	2	2.2
Decision Sciences	2	2.2
Medicine	2	2.2
Psychology	2	2.2
Agricultural and Biological Sciences	1	1.09
Physics and Astronomy	1	1.09

Table 3 : provides a list of the top 3 authors with the highest number of documents on the purchase behaviour of mobile phones, along with the number of publications and citations for each author. Chang, Po-Chien is the most prolific author in this field, with 3 publications and 34 citations, indicating the significant impact of their work. Belkhamza, Zakariya, and Niasin, Mohd Adzwin Faris, both have 2 publications each, with 1 citation each. It is notable that other authors in this area of study have just one paper each, suggesting that there is still limited research in this area.

Table 3 also presents the top countries in terms of the number of documents on the purchase behaviour of mobile phones, along with the corresponding publication and citation counts. India emerges as the leading country with 11 publications and 58 citations, indicating a significant contribution to research in this field. Australia and Malaysia follow closely behind, each with 6 publications but with higher citation counts of 99 and 107, respectively, suggesting that research from these countries is highly impactful. Despite having only 5 publications, China stands out with a remarkably high citation count of 316, indicating the substantial influence of Chinese research on mobile phone purchase behaviour. Taiwan, the United States, and

Pakistan also make notable contributions, with Taiwan having four publications, the United States with three, and Pakistan with two. These findings highlight the global interest and impact of research on mobile phone purchase behaviour, with different countries making significant contributions to the body of knowledge in this field. Figure 2 shows countries' bibliographic coupling, indicating their similarity based on the number of references they share.

Table 3. Top 10 Number of Documents: Author and Country

Author	Publication	Citation	Country	Publication	Citation
Chang, Po-Chien	3	34	India	11	58
Belkhamza, Zakariya	2	1	Australia	6	99
Niasin, Mohd Adzwin Faris	2	1	Malaysia	6	107
			China	5	316
			Taiwan	4	26
			United States	3	100
			Pakistan	2	19

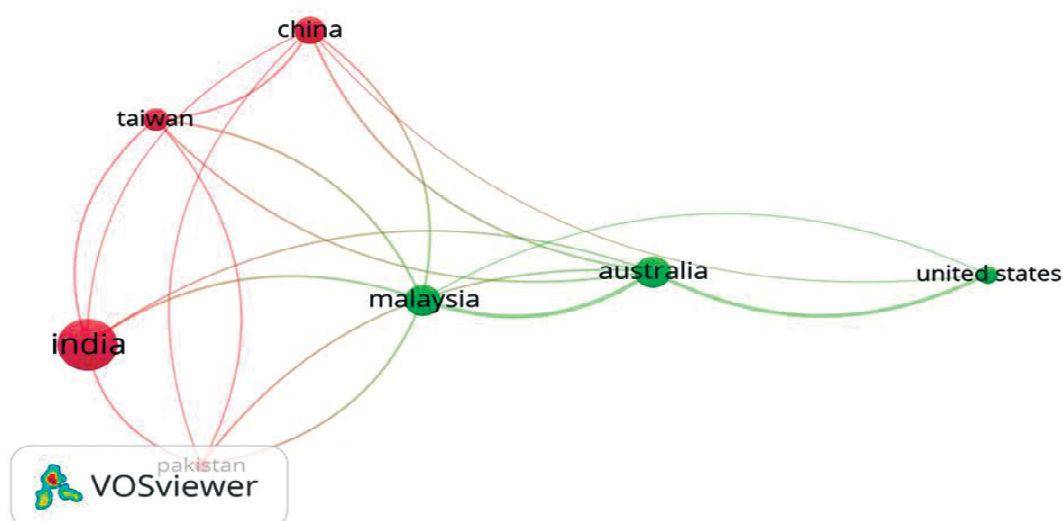


Figure 2. Bibliographic coupling of countries

Table 4 presents the top 10 most cited articles on mobile purchase behaviour and provides a glimpse into the most influential research papers in this field, highlighting key studies that have significantly contributed to our understanding of consumer behaviour in the mobile phone market. The top-ranked article, "Survey and analysis of consumers' behaviour of waste mobile phone recycling in China" by Yin J et al. (2014), has amassed 200 citations, making it the most cited paper. This study, published in the Journal of Cleaner Production, provides valuable insights into consumer behaviour regarding the recycling of mobile phone waste in China, a topic of increasing importance in sustainability and environmental protection.

Other notable articles in the top 10 include "Dependency on smartphone and the impact on purchase behaviour" by Hooi Ting D et al. (2011), "Consumer behaviour with respect to the consumption and recycling of smartphones and tablets: An exploratory study in Portugal" by Martinho G et al. (2017), and "Rethinking residential consumers' behaviour in discarding obsolete mobile phones in China" by Tan Q et al. (2018). These studies shed light on various aspects of consumer behaviour related to mobile phone purchase and disposal, highlighting the diverse range of topics covered in research on this subject. A density visualisation of citation analysis is presented in Figure 3, which focuses on nations that have at least one document and one citation. Articles written by researchers from China, Australia, and Malaysia have received the most citations, as indicated by the clusters highlighted in yellow.

4.2 Citations

Table 4. Top 10 Most Cited Articles

No	Authors	Title	Citation	Citation /year	Journal
1	Yin J et al. (2014)	'Survey and analysis of consumers' behaviour of waste mobile phone recycling in China'	200	20	Journal of Cleaner Production
2	Hooi Ting D et al. (2011)	'Dependency on smartphone and the impact on purchase behaviour'	63	5.25	Young Consumers
3	Martinho G et al. (2017)	'Consumer behavior with respect to the consumption and recycling of smartphones and tablets: An exploratory study in Portugal'	63	9	Journal of Cleaner Production
4	Tan Q et al. (2018)	'Rethinking residential consumers' behavior in discarding obsolete mobile phones in China'	63	10.5	Journal of Cleaner Production
5	Zhang L et al.	'Understanding consumers' behavior intention	53	17.67	Resources,

	(2021)	of recycling mobile phone through formal channels in China: The effect of privacy concern'			Environment and Sustainability
6	Yang J et al. (2007)	'Social reference group influence on mobile phone purchasing behaviour: A cross-nation comparative study'	52	3.06	International Journal of Mobile Communications
7	Miller G et al. (2012)	'The heritability and genetic correlates of mobile phone use: A twin study of consumer behavior'	37	3.08	Twin Research and Human Genetics
8	Sata M. (2013)	'Factors affecting consumer buying behavior of mobile phone devices'	33	3	Mediterranean Journal of Social Sciences
9	Ting H et al. (2019)	'Consumer behaviour and disposition decisions: The why and how of smartphone disposition'	27	5.4	Journal of Retailing and Consumer Services
10	Chang P.-C. (2010)	'Drivers and moderators of consumer behaviour in the multiple use of mobile phones'	24	1.71	International Journal of Mobile Communications

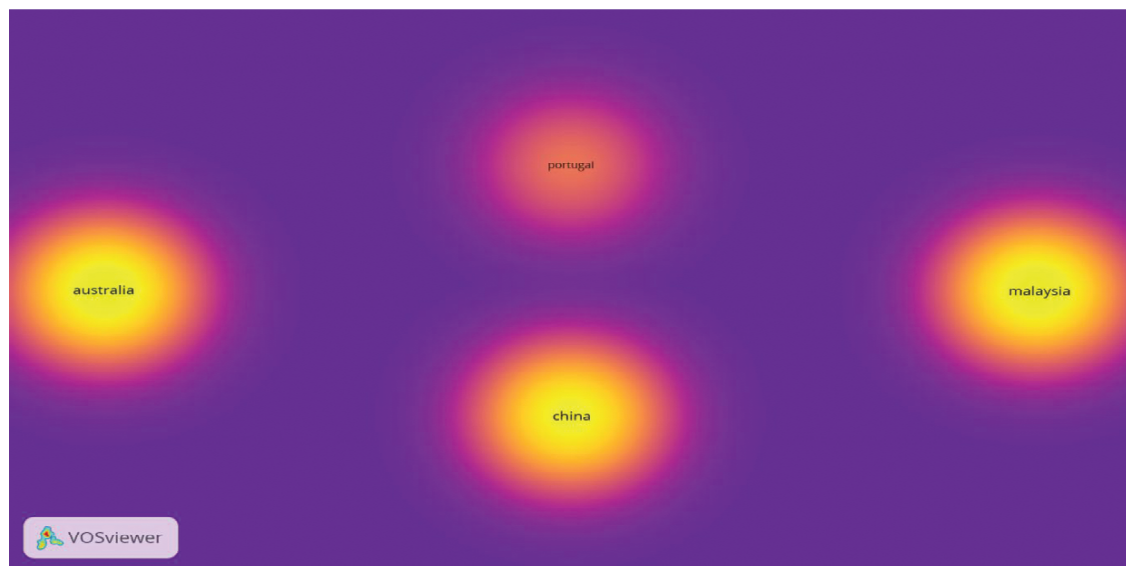


Figure 3. Network Visualisation of Citations

4.3 Keywords Analysis

Table 6 presents the top keywords in publications on the purchase behaviour of mobile phones, detailing the total number of occurrences of each keyword and the percentage it represents out of the total. The table provides insights into the key

themes and topics that researchers commonly explore in this field. The most frequently used keyword is "Mobile Phones," appearing 13 times and representing 3.52% of the total keywords. This reflects the central focus of research on the purchase behaviour of mobile phones, highlighting the significance of mobile phones in consumer behaviour studies. "Consumer Behavior" is the second most common keyword, appearing 12 times and accounting for 3.25% of the total keywords, indicating a strong emphasis on understanding consumer behaviour in the context of mobile phone purchases.

Keywords related to specific types of mobile phones, such as "Mobile Phone" and "Smartphone," also feature prominently in the list, suggesting a focus on the differences in consumer behaviour between traditional mobile phones and smartphones. Other keywords, such as "Surveys," "Sales," and "Marketing," indicate a methodological and strategic focus in research, highlighting the importance of survey research and marketing strategies in understanding and influencing consumer behaviour in the mobile phone market.

We utilise VOSviewer, a program frequently used for bibliometric analysis, to visualise this data and investigate the connections between these terms. The 17 keywords that show up at least four times on mobile phone purchase behaviour are shown in Figure 4. Different themes or topics are represented by different colours, sizes show the frequency of recurrence, and the strength of linkages between keywords is indicated by lengths. The mobile phones and consumer behaviour are represented by the green cluster, smartphone and sales are represented by the red cluster, and surveys and recycling are represented by the blue cluster. Moreover, in order to offer a more comprehensive comprehension of the results shown in Figure 4, Figure 5 offers a temporal visualisation of the co-occurrence of phrases in the evaluated papers. That illustrates the evolution of keyword usage through 2023.

Table 5. Top Keywords in Publication

KEYWORDS	TOTAL	PERCENTAGE
Mobile Phones	13	3.52
Consumer Behavior	12	3.25
Mobile Phone	10	2.71
Smartphone	9	2.44

Smartphones	7	1.90
Mobile Devices	6	1.63
Consumer Behaviour	6	1.63
Cellular Telephones	6	1.63
Surveys	5	1.36
Sales	5	1.36
Marketing	5	1.36
Telephone Sets	4	1.08
Social Influence	4	1.08
Recycling	4	1.08
Mobile Telecommunication Systems	4	1.08
Dependency	4	1.08
Consumer	4	1.08

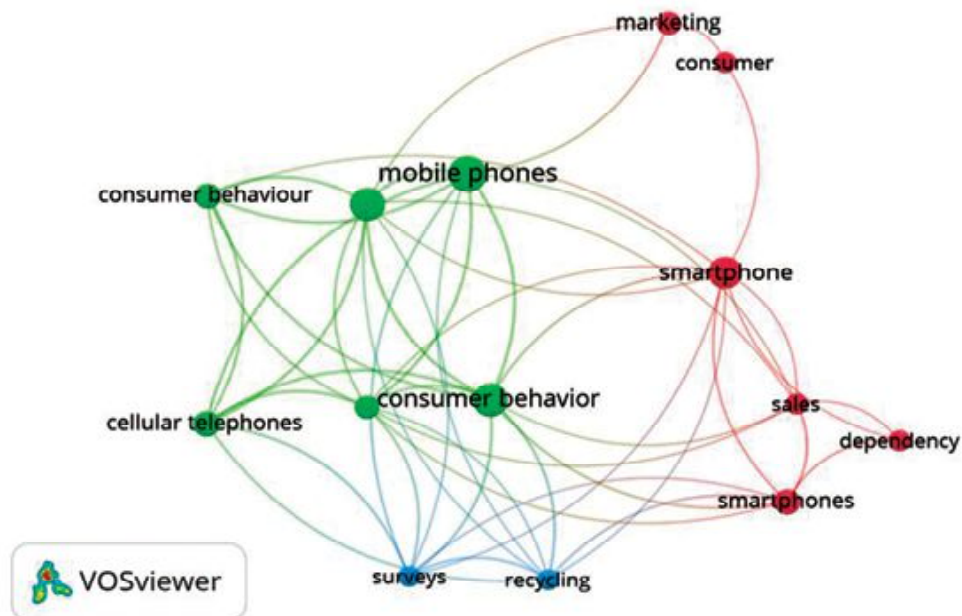


Figure 4. Co-occurrence of keywords of evaluated documents

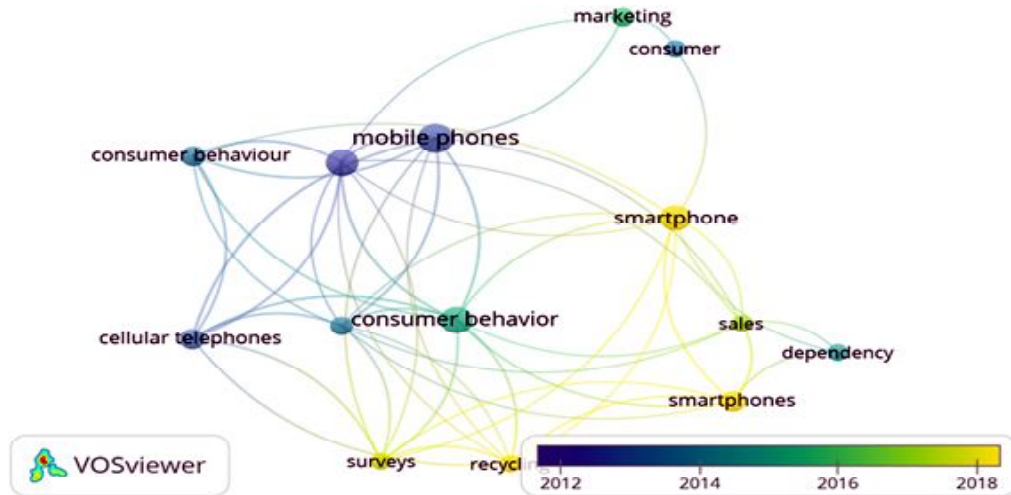


Figure 5. Timeline visualisation of co-occurrence of keywords of evaluated documents

5. CONCLUSION

In conclusion, this bibliometric analysis illuminates the multidimensional landscape of research trends in mobile phone purchase behaviour, reflecting the dynamic interplay between technological advancements, consumer preferences, and market dynamics. The observed fluctuations in publication outputs over the years underscore the evolving nature of research in this field, mirroring shifts in consumer behaviour and market trends. While the peak in publications from 2007 to 2014 may indicate heightened interest spurred by rapid technological innovations and expanding smartphone usage, the subsequent stabilisation suggests a maturing of research focus and methodologies. This stabilisation period could reflect a consolidation of knowledge and approaches as researchers delve deeper into nuanced aspects of mobile phone purchase behaviour.

Geographical insights reveal the global nature of research contributions, with countries like India, Australia, Malaysia, China, and others making significant impacts on the discourse. The collaborative networks observed among researchers and institutions underscore the importance of knowledge sharing and cross-disciplinary collaborations in advancing our understanding of mobile phone purchase behaviour. Moreover, the prominence of articles as the primary form of publication highlights the

importance of comprehensive analyses and detailed discussions in elucidating complex phenomena inherent in consumer decision-making processes.

Furthermore, the keyword analysis unveils the central themes driving research endeavours in this domain, ranging from consumer behaviour and smartphone types to marketing strategies and environmental concerns. These findings provide valuable guidance for stakeholders, including businesses, policymakers, and academic researchers, to navigate the complexities of the mobile phone market effectively. By leveraging insights gathered from this analysis, stakeholders can tailor strategies, policies, and research agendas to address emerging trends and meet evolving consumer needs and preferences in the ever-evolving landscape of mobile phone purchase behaviour. In essence, this study serves as a cornerstone for future research endeavours, fostering a deeper understanding of the intricate dynamics shaping consumer interactions with mobile technology and its implications for society, industry, and academia.

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Mapping the link between Digital Payment Systems and Financial Inclusion : A Bibliometric Perspective

Moge Karga¹, Ravina Pul² & Olympia Kurmi³

ABSTRACT

The widespread adoption of Digital Payment Systems has significantly boosted financial inclusion, particularly by enabling low-income and unbanked populations to access formal financial services. This study conducts a bibliometric analysis of financial inclusion and digital payments using 340 documents (January 1, 2008 to December 31, 2024) from Web of Science. It identifies influential publications, key authors, and collaboration networks through VOSviewer-based co-authorship, keyword co-occurrence, and citation analysis. Findings reveal exponential research growth, especially after 202, with clusters focusing on FinTech adoption, financial literacy, innovation and technology. However, scholarly pursuits in the domain remain limited and underexplored across several regions and disciplines. Research inclinations in the future should examine the socio-economic impact of digital payments and investigate how emerging technologies such as Blockchain and AI intervention have reshaped the digital financial landscape. This study highlights knowledge gaps and future research opportunities in the field of digital finance.

Keywords: Digital Payment System; Financial Inclusion; FinTech; Bibliometric analysis

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1.Introduction:

Digital Payment Systems has emerged as an important catalyst in enhancing financial inclusion across the globe (Afjal, 2023). Quintessentially a component of FinTech, digital payments foster financial inclusion by opening newer avenues of financial and economic activity. Digital Payments denotes the creative application of technological strides in the production and distribution of financial services and goods (Suri, 2017; Afjal, 2023). It encompasses various methods, including mobile money accounts, debit or credit cards, mobile phones, and the Internet, enabling individuals to make payments, transfer money, or pay bills. Driven by financial innovations, digital payment methods have contributed to the competence of financial institutions and services (Varghese & Viswanathan, 2018).

Digital payment modes as a precursor to financial inclusion have opened up new vistas of access for previously excluded geographic and demographic groups (Koh et al., 2018; Afjal, 2023; Chen et al. 2020). Koh et al. (2018) have forecasted that by 2030, over two billion unbanked people will rely on mobile devices as their main means of executing financial transactions. In addition to these marginalized groups, sectors such as community banking, savings accounts, lending services, and insurance are also anticipated to significantly benefit from digital payment systems (Bongomin et al., 2019; Mhlanga, 2020).

Financial inclusion has become an essential criterion for economic stability and growth around the globe. Around 1.7 billion adults living in low and middle-income nations remain without being able to access institutionalized financial services (World Bank, 2014; Afjal, 2023). The dearth of financial services availability heightens income inequality, restricts economic growth, and amplifies poverty (Banerjee & Duflo, 2011). Digital payment systems have significantly advanced financial inclusion, particularly in developing economies. The proportion of adults using digital payments increased from 35% in 2014 to 57% in 2021. Expanding access to digital payments fosters financial inclusion for both individuals and non-financial businesses, enhancing economic resilience and promoting growth at both micro and macro levels (Demirgüç-Kunt et al. 2022).

Digital solutions are instrumental in minimizing impediments such as restricted access to financial institutions, high transaction fees, and the complex procedures involved in traditional banking services to facilitate a financially included society. It provides underprivileged groups such as low-income persons, women, and rural communities access to affordable and personalized financial services (Kim et al., 2020). Mobile money services have widened the reach of unbanked people to avail basic financial products and services using mobile phones (Suri, 2017).

Digital lending enhances access to credit by providing direct contact between investors and borrowers, reducing borrowing costs and the involvement of conventional financial intermediaries. Blockchain technology innovations are increasingly being used to ensure safety and transparency in digital transactions and record keeping (Tapscott & Tapscott, 2016). Given the pertinence of digital payment systems in financial inclusion, the study uses bibliometric analysis to answer the following research questions:

- I. What are the key trends and research patterns in digital payment systems, FinTech, and financial inclusion from 2008 to 2024?

- II. Which subject areas have contributed most significantly to research on digital payment systems, FinTech, and financial inclusion?
- III. Which countries, articles, and authors have had the most significant impact in the domain of digital payment systems, FinTech, and financial inclusion?
- IV. What are the main research themes emerging from keyword co-occurrence and co-authorship analysis in digital payment systems, FinTech, and financial inclusion?

This article is structured into five sections. The introduction comprises the first section of the study. The second section outlines the research methodology, detailing the database utilized, selection criteria, and analytical tools employed. The third section highlights the findings and analysis, offering insights derived from the study. The fourth and fifth sections focus on discussion and conclusion, respectively.

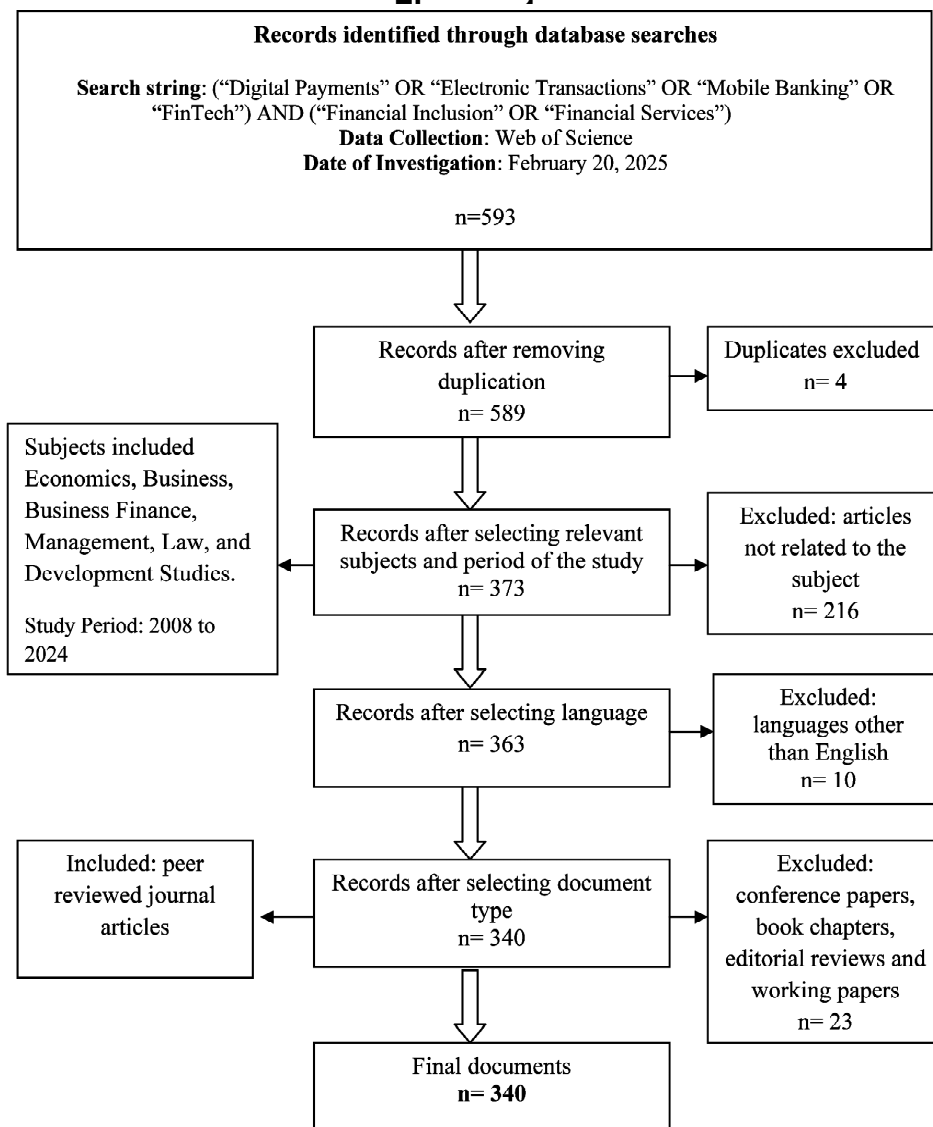
2. RESEARCH METHODOLOGY

The current study conducted a bibliometric review and analysis of extant research on Digital Payment Systems and Financial Inclusion from January 1, 2008, to December 31, 2024, using the Web of Science database. The year 2008 was chosen as the base year as it earmarks the Global Financial Crisis, which spearheaded crucial changes in banking regulations, and accelerated financial inclusion through digital innovations such as mobile banking and FinTech (Rughoo & Sarantis, 2014; Demirgüç-Kunt et al., 2018).

The bibliometric analysis was performed using VOSviewer software in conjunction with Web of Science data. VOSviewer was selected due to its strong reputation for effectively visualizing bibliometric data (Afjal, 2023; Guiling et al., 2022; Eck & Waltman, 2010, 2014, 2017). A multi-stage refinement process was applied to ensure the relevance of the dataset. In the first stage, data was extracted from the Web of Science database, and relevant keywords were identified. Parentheses were used to refine search results, and Boolean operators AND and OR were employed to enhance search efficiency. The search string used was ("Digital Payments" OR "Electronic Transactions" OR "Mobile Banking" OR "FinTech") AND ("Financial Inclusion" OR "Financial Services"). In the second stage, the duplicate entries were removed to 589 articles. Later in the third stage, the dataset was filtered to include only documents related to Economics, Business, Business Finance, Management, Law, and Development Studies, reducing the dataset to 373 documents. To further ensure relevance, the fourth stage involved limiting the dataset to English-language

publications, bringing the count to 363 documents. Finally, to fulfill academic objectivity, only research articles were considered, resulting in a final dataset of 340 articles (Figure 01).

This refined dataset serves as the foundation for the bibliometric analysis, which explores research trends, key contributors, influential publications, and thematic clusters within the field of digital payments and financial inclusion.



1. ANALYSIS AND RESULT

Bibliographic data from 340 documents were collected and systematically organized for analysis. A detailed bibliometric study was conducted, incorporating citation analysis, co-citation mapping, keyword co-occurrence analysis (Afjal, 2023; Kundy & Shah, 2024). The findings, presented through graphs, tables, and network maps, provide insights into the knowledge base on digital payment systems and financial inclusion.

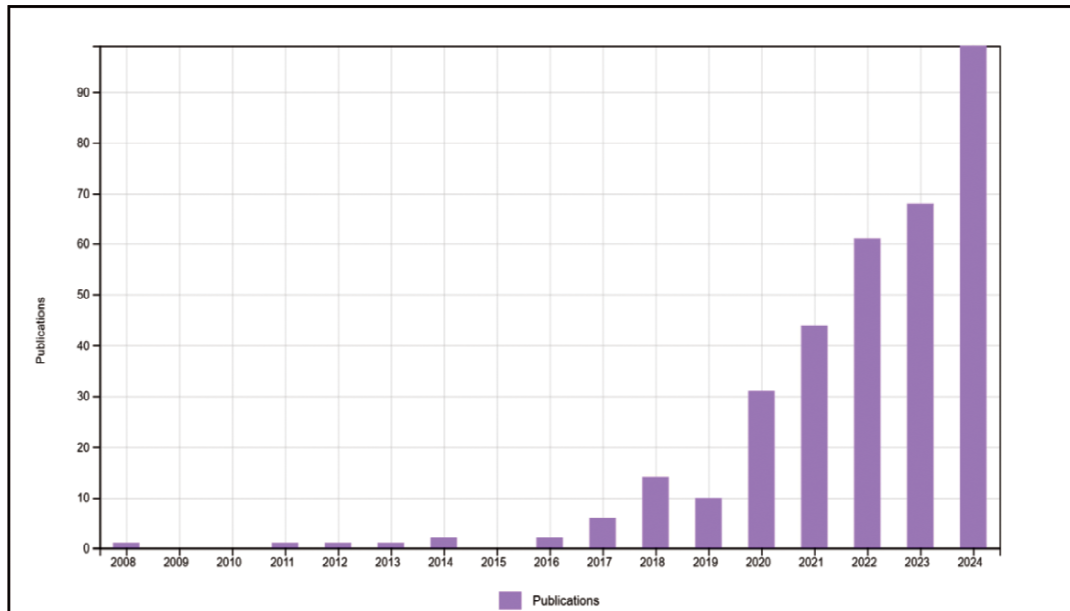
3.1. Publication Trend

Figure 02 illustrates the yearly publication trends in leading journals focusing on digital payment systems and financial inclusion. The data reveal a steady increase in research output, reflecting growing interest in the field. From 2008 to 2016, publications gradually rose, indicating an exploratory phase where foundational studies were being developed. A slight decline in 2019 may be attributed to shifts in research focus or funding constraints. However, between 2020 and 2023, a significant rise occurred, driven by the COVID-19 pandemic that accelerated the rapid advancements in digital payment technologies and their role in financial inclusion. The pandemic heightened the need for contactless transactions, making digital payment systems an essential tool for safe and accessible financial services. This publication trend persisted in 2024, with a sharp surge in publications, highlighting the increasing relevance of digital payments in economic growth and sustainability.

3.2. Publication by Subject Area

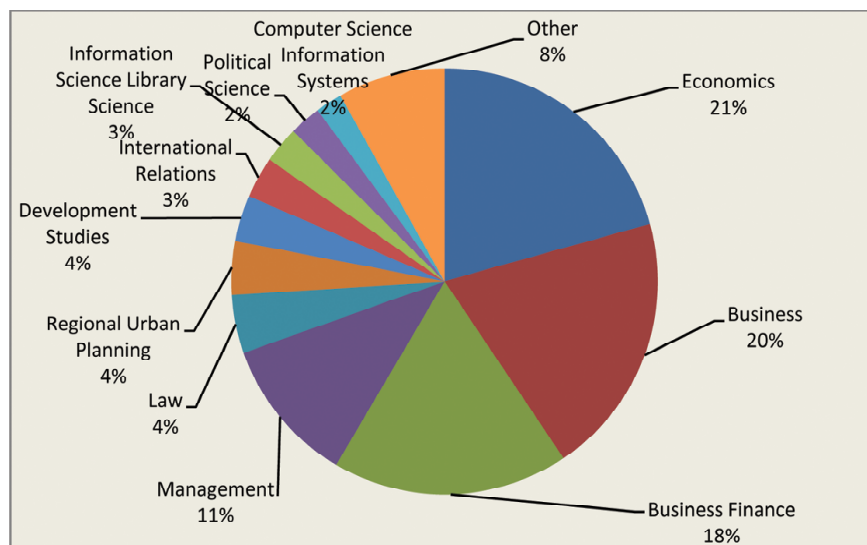
This section of the paper shows the distribution of research publications on digital payment systems and financial inclusion across various disciplines. Economics (112), Business (108), and Business Finance (97) have the highest contributions, underscoring the significance of such studies in enhancing financial stability, analyzing market trends and behavior, and designing investment strategies. Other fields like Law (24), Regional Urban Planning (22), and Development Studies (19) explore regulatory frameworks, urban economies, and financial inclusion policies. Additionally, emerging areas such as Computer Science (11) and Political Science (13) highlight technological advancements, cyber security, and government interventions in digital payments (Figure 03).

Figure 02
Publication Trend



Source: Author Compilation

Figure 03
Contribution by Subject Area

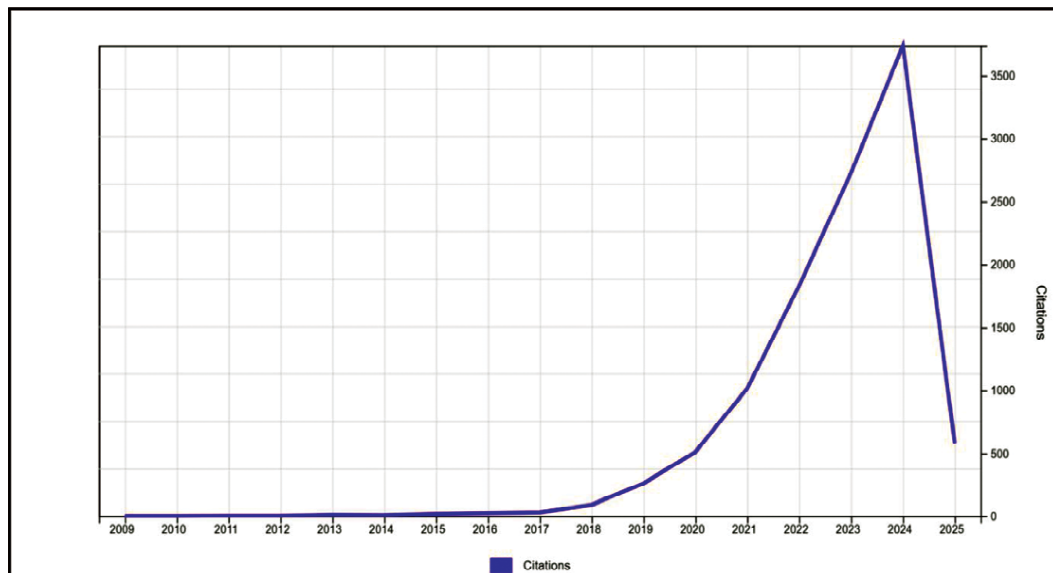


Source: Author Compilation

3.3. Average Citations Annually

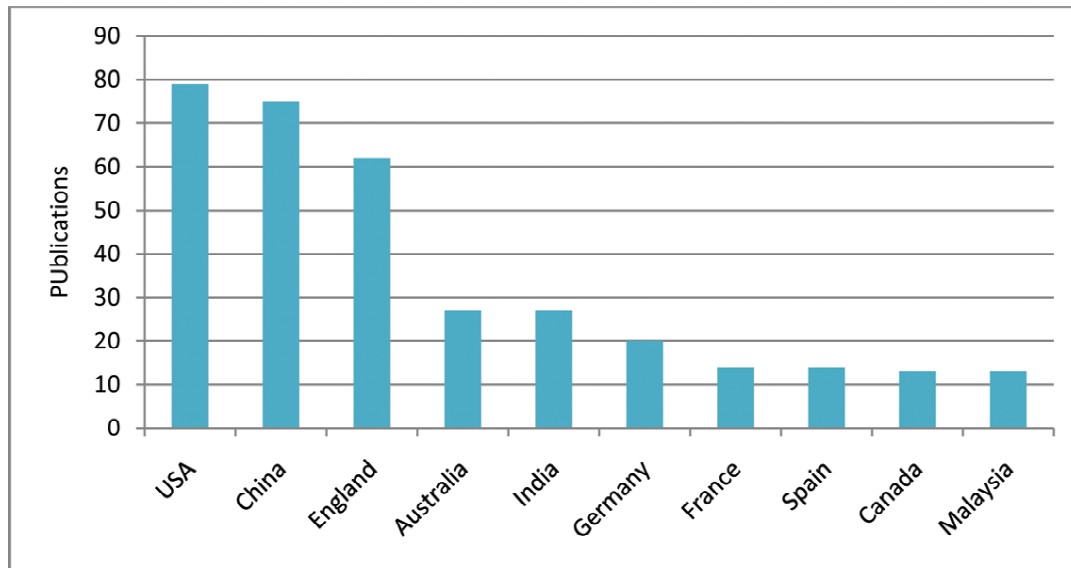
Figure 04 explores research on digital financial services and their impact on economic growth and financial inclusion, focusing on citation trends from 2009 to 2025. Between 2009 and 2017, citation numbers remained low, suggesting limited academic and policy engagement with the topic during the early stages of digital payment evolution. However, from 2018 onwards, citations have increased, reflecting growing research interest. A significant surge occurred from 2020, peaking between 2021 and 2023, with the highest citation count recorded in 2024, corresponding with the COVID-19 pandemic. The pandemic and the subsequent period thereafter rendered digital transactions essential, forcing different governments and financial institutions worldwide to implement supportive policies such as digital infrastructure, introduce direct benefit transfer and conduct financial literacy programs. A sharp decline is seen in 2025 due to a lack of bibliographic data. The overall upward trend highlights the expanding influence of research in this domain, shaping future financial policies and digital payment adoption.

Figure 04
Average Citations Annually



Source: Microsoft Excel 2019

Figure 05
Contribution of Countries



Source: Microsoft Excel 2019

3.4. Contribution of Countries

The study identifies 340 publications on digital payment systems from 72 countries, accentuating its global relevance. The top 10 most productive nations contributed 344 papers, with the U.S. leading with 79 publications (23.16%), followed by China with 75 publications (21.99%) and England with 62 publications (18.18%). Australia and India each produced 27 papers (7.91%), while Germany contributed 20 (5.87%). Furthermore, the five most influential contributors to the knowledge base in this domain are the USA, China, England, Australia, and India. Conversely, countries like Malaysia and Canada have the lowest number of publications in this area. This indicates research is largely concentrated in developed and rapidly digitizing nations. There is a critical need for more regional research in developing nations to support inclusive and globally balanced insights (Figure 05).

3.5. Most Influential Articles

This section highlights the most prominent researchers contributing to the field. According to Kundy & Shah (2024) and Donthu et al., (2021), analyzing literature based on authorship and citation impact is crucial for identifying leading contributors in a specific field and stating authors can be ranked based on the total number of

citations their publications have received, providing insight into their academic influenced. A study was conducted titled "On the FinTech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services" carried out in the United States, has been highly influential, receiving 725 citations, making it one of the most recognized works in this domain (Table 01)

Table : 1
Most Influential Articles

Sl. No.	Title	Authors	TC
1	On the FinTech revolution: interpreting the forces of innovation, disruption, and transformation in financial services.	Gomber Peter; Kauffman, Robert J.; Parker, Chris; Weber, Bruce W. (2018)	725
2	Impact of digital finance on financial inclusion and stability	Ozili, Peterson K. (2018)	677
3	The digital revolution in financial inclusion: international development in the FinTech era	Gabor, Daniela; Brooks, Sally (2017)	364
4	FinTech, financial inclusion and income inequality: a quantile regression approach	Demir, Ayse; Pesque-Cela, Vanesa; Altunbas, Yener; ;Murinde, Victor (2022)	289
5	How Blockchain can impact financial services - The overview, challenges and recommendations from expert interviewees	Chang, Victor; Baudier, Patricia; Zhang, Hui; Xu, Qianwen ; Zhang, Jingqi; Arami, Mitra (2020)	239

6	Sustainability, FinTech and Financial Inclusion	Arner, Douglas W.; Buckley, Ross P.; Zetsche, Dirk A.; Veidt, Robin (2020)	237
7	Supply Chain Finance Innovation Using Blockchain	Du, Mingxiao; Chen, Qijun; Xiao, Jie; Yang, Houhao; Ma, Xiaofeng (2020)	215
8	The rise of digital finance: Financial inclusion or debt trap?	Yue, Pengpeng; Korkmaz, AslihanGizem; Yin, Zhichao; Zhou, Haigang (2022)	199
9	FinTech, RegTech, and the Reconceptualization of financial regulation	Arner, Douglas W.; Barberis, Janos; Buckley, Ross P. (2017)	199
10	Internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty	Amin, Muslim (2016)	171
11	Intention to use analytical artificial intelligence (AI) in services - the effect of technology readiness and awareness	Flavian, Carlos; Perez-Rueda, Alfredo; Belanche, Daniel; Casalo, Luis, V (2016)	170

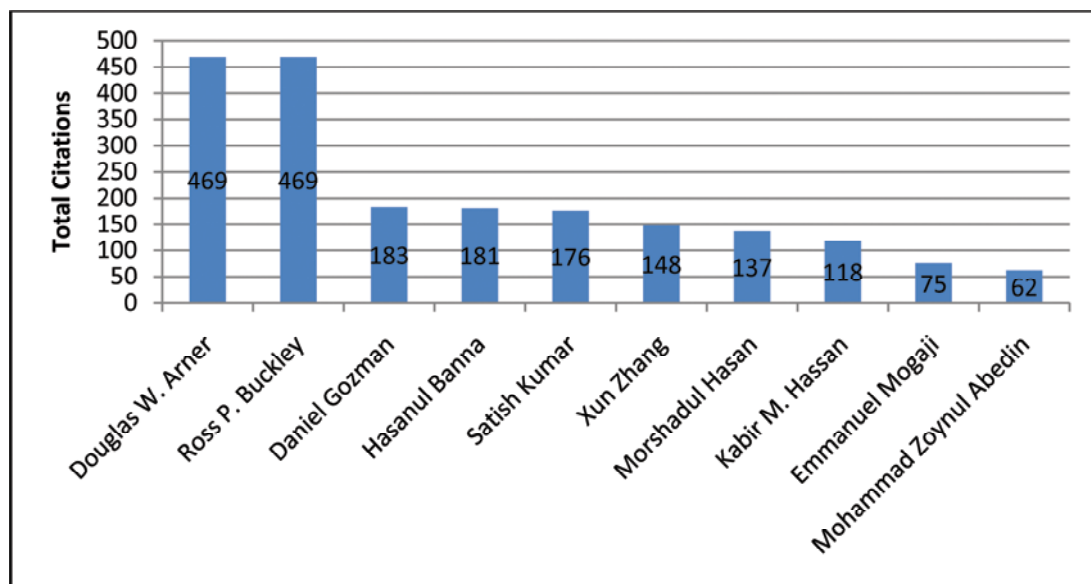
Sources: Table by Authors,

Note: TC- Total Citations

3.6. Most Influential Authors

Figure 06 depicts the publishing trends of the top ten prolific authors in digital payment systems and financial inclusion. Douglas W. Arner and Ross P. Buckley lead with 469 total citations each. Other prominent contributors, including Daniel Gozman, Hasanul Banna, Satish Kumar, and Xun Zhang, consistently add to the field. Their collective research plays an important role in advancing knowledge on digital financial services and financial inclusion.

Figure : 6
Output of Leading Authors



Sources: MS Excel 2019

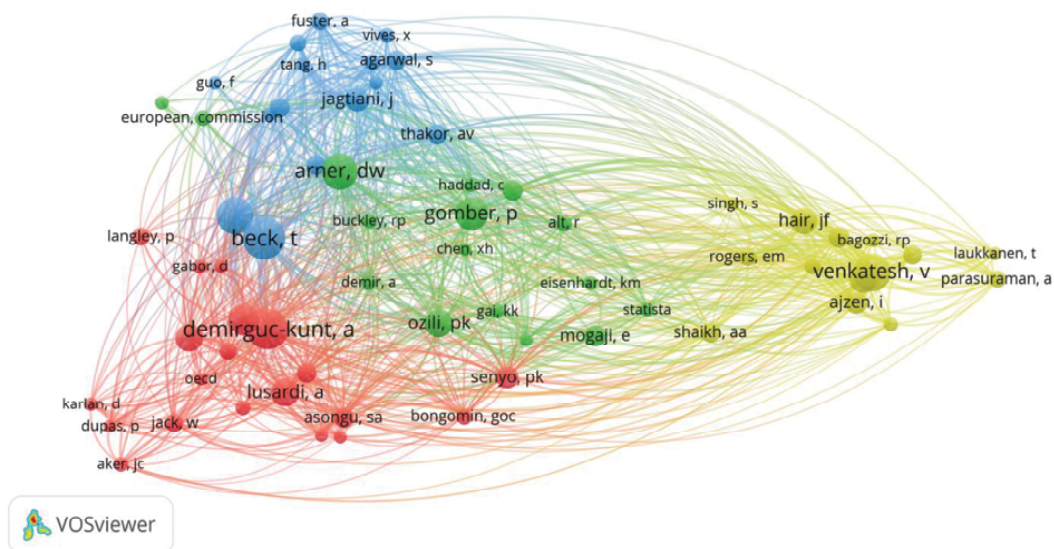
3.7. SCIENCE MAPPING

3.7.1. Co-Citation Analysis of Authors

Figure 07 shows co-citation analysis of authors, a scientific mapping technique that is employed to identify frequently cited publications that deal with closely associated and related subject matter. The study found 65 authors with at least 20 citations,

categorized into four clusters. The red cluster includes 20 authors, with Demirguc-Kun leading (85 citations, 733 link strength). The green cluster, with 16 authors, is led by Douglas W. Arner (72 citations, 585 link strength). The blue cluster, containing 15 authors, highlights Beck (89 citations, 730 link strength), while Venkatesh (75 citations, 759 link strength) dominates the yellow cluster of 14 authors.

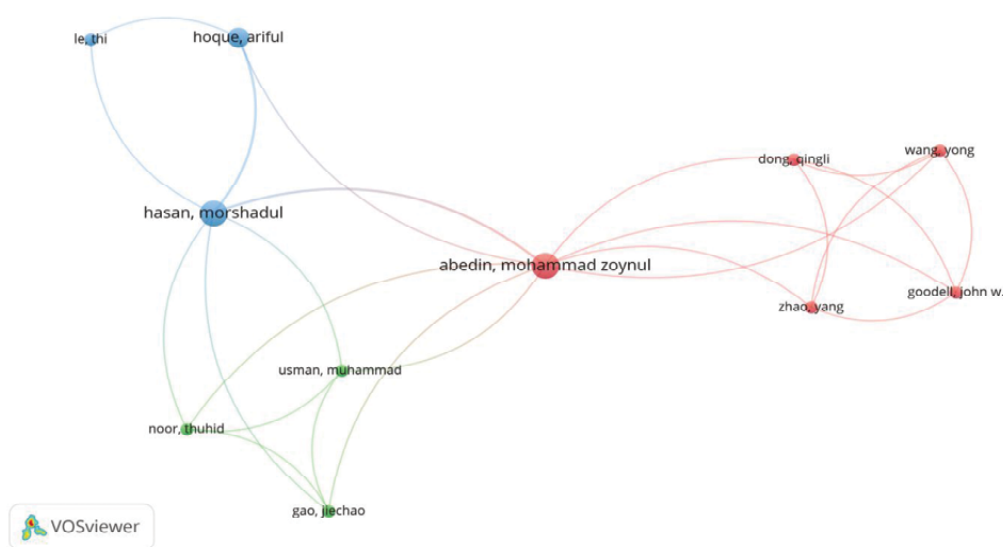
Figure : 7
Co-Citation Analysis of Authors



3.7.2. Keywords Co-Occurrence Analysis

Figure 08 presents the keyword co-occurrence analysis, which gives a thematic structure of research on digital payment systems and financial inclusion. Out of 1569 keywords, 126 met the minimum threshold of at least five occurrences. "FinTech" ranked highest with 190 instances (790 link strength), followed by "financial inclusion" with 117 occurrences (512 link strength), highlighting their prominence in the field. Other significant keywords include "innovation" (51 occurrences, 268 link strength) and "technology" (40 occurrences, 247 link strength), emphasizing the role of digital advancements in finance. Additionally, terms like "adoption," "banking," and "mobile money" illustrate evolving financial services, security concerns, and consumer behavior trends. This indicates researchers are more interested in focusing on the acceptance of digital platforms, security concerns and the shifting landscape of financial intermediation.

Figure : 9
Network Diagram of Co-Authorship among Authors.



4.DISCUSSION AND FUTURE RESEARCH

The present study offers a comprehensive overview of research trends, influential works, and thematic concentrations in the digital payment ecosystem and financial inclusion. The co-citation analysis identified four key research clusters: financial development, banking access, technology innovation, and FinTech, thereby mapping the intellectual structure of the domain. These clusters highlight the multi-disciplinary nature of the field, integrating perspectives from economics, finance, computer science, development studies, and law. Keyword co-occurrence analysis further explained the centrality of themes such as FinTech, innovation, mobile money, and financial inclusion, indicating the convergence of technological advancements and inclusive financial policies in scholarly discourse. This study confirms the pivotal role of emerging technologies in shaping financial inclusion narratives and positions digital innovation as a recurring theoretical anchor in the literature. Additionally, this research reveals evolving citation dynamics and growing academic interest post COVID-19, reflecting a shift in scholarly priorities and the increasing urgency of digital financial systems in a rapidly digitizing global economy. The study lays a foundation for future theoretical exploration in underrepresented domains by identifying influential authors and thematic concentrations, particularly in the policy technology interface.

The findings offer valuable insights for practitioners, policymakers, and financial service providers striving to expand digital financial services. Identification of influential themes and research partnerships, such as the collaboration between Abedin and Hasan, can guide collaborative efforts in academic-industry partnerships and strategic decision-making. Understanding the research emphasis on FinTech, mobile money, and technology integration helps managers and policymakers tailor services that align with user needs and global trends. This study also emphasizes the critical role of digital payment systems in advancing financial inclusion, particularly in underserved populations. It highlights the disparity in research contributions, with most studies focused on developed countries, and calls for more engagement with developing and marginalized regions. Encouraging such geographical diversity in research could lead to the formulation of more inclusive, context-sensitive policies and digital infrastructure development. Moreover, the study advocates for future research exploring cyber security, equitable access, and the integration of AI, blockchain, and data innovations. These insights are vital for building secure, efficient, and inclusive digital payment ecosystems that contribute to both economic development and social equity. Thus, the study not only maps the intellectual landscape of digital payment and financial inclusion research but also offers actionable insights that support inclusive policy development and innovative managerial practices across diverse economic contexts.

5.CONCLUSION

The analysis conducted in this study reveals that research in the field of digital payment systems and financial inclusion has experienced a significant upward trajectory, particularly in the last five years. This growth is primarily driven by technological innovations, evolving policy frameworks, and efforts to improve financial accessibility. The clustering of research themes highlights dominant areas such as FinTech innovation, digital financial services, mobile money, banking technology, and financial accessibility. However, the study also identifies certain limitations. The analysis was restricted to 340 publications indexed in the Web of Science database, excluding relevant contributions from other sources such as Scopus, Google Scholar, and regional databases. Future research can overcome this limitation by incorporating a wider range of databases for a more comprehensive understanding of global and regional trends. Moreover, there is considerable scope to explore emerging themes such as blockchain-based payment solutions, artificial intelligence in financial services, and the socio-economic impacts of digital financial tools. Expanding the scope beyond business and economics to include behavioral finance, digital literacy,

and social development perspectives would offer a more holistic view of the digital financial inclusion landscape.

Importantly, the findings from this bibliometric research can be used as a practical guidance by policymakers and practitioners. The increased emphasis on FinTech and digital access necessitates the creation of inclusive regulatory frameworks that promote innovation while protecting consumers. Policymakers should prioritize digital literacy initiatives, particularly in underprivileged and rural regions, in order to bridge the digital gap and encourage greater financial inclusion. Investments in digital infrastructure and mobile banking technologies should be expedited in order to increase accessibility and lower transaction costs. Furthermore, multidisciplinary research that connects finance, technology, and social behavior should be fostered to help shape evidence-based policy. In addition to providing a framework for future academic research, the study also offers practical insights for improving financial inclusion through technology-enabled solutions.

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HRM as a Driver of Innovation and Entrepreneurship: Insights from MSMEs Located in Jhargram

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Abstract :

Micro, Small, and Medium Enterprises (MSMEs) have a significant role in the economic growth of developing economies like India. Innovation and entrepreneurship are crucial for sustainability of MSMEs in the long run. The presence of efficient Human Resource Management (HRM) practices is being recognized as critical drivers of organizational success. This research aims to investigate the impact of HRM practices on innovation and entrepreneurship in MSMEs located in Jhargram. Jhargram is a developing district which is a traditional base of MSMEs in agro-based and handicraft sectors. However, it remains underexplored in academic research that makes it an appropriate context to study. The present study seeks to specifically identify the key HRM practices that drive these factors. A quantitative research approach was adopted in the study. Data was collected from 110 employees using a structured questionnaire. Statistical techniques in the form of correlation and regression analysis were used to assess the links between HRM practices, innovation, and entrepreneurship. The findings revealed a significant positive association between effective HRM practices with both innovation and entrepreneurship. HRM practices like training and development, performance management, and compensation were specifically found to be prominent. The study suggests that MSMEs should give priority towards implementing robust HRM practices to foster a culture of innovation and entrepreneurship. This includes focusing on innovation, employee development, and a supportive work environment.

Keywords: Manuscript Received: April 24, 2025; Revised Manuscript Received: September 15, 2025, Accepted: October 9, 2025.

Introduction

The economic development of emerging economies like India is greatly influenced by the performance of MSMEs in the country (Singh et al., 2018). MSMEs have a significant contribution to employment generation, regional development,

and industrial growth (Shelly et al., 2020). However, in order to stay relevant in the dynamic business environment, MSMEs require continuous innovation in their entrepreneurial initiatives (Singh et al., 2018). The presence of effective Human Resource Management (HRM) practices has been recognized as a key for organizational success due to the prevalence of resource constraints of MSMEs unlike large enterprises (Ogunyomi & Bruning, 2016). HRM can serve as a driver of both innovation and entrepreneurship by fostering employee engagement, enhancing skill development, and promoting a culture of adaptability (Maheshwari et al., 2020). Although the existing literature acknowledges this, however, majority of the research in this area has been carried out in western contexts.

The present study focuses on Jhargram which is one of the less-developed districts in West Bengal and has witnessed a gradual expansion of small-scale industries (Sarkar & Malik, 2019). However, there are challenges such as limited access to skilled labor, financial constraints, and infrastructural deficiencies (Sarkar & Malik, 2019). Therefore, it is imperative to explore the factors that contribute to the growth and sustainability of MSMEs in the region. Moreover, HRM practices remain an underexplored domain in this area. The present study seeks to bridge this gap by investigating the impact of HRM practices on innovation and entrepreneurship in the MSME sector of Jhargram. In specific terms, it seeks to identify key HRM practices that drive these factors through a quantitative approach. This research can provide a deeper understanding of the role of HRM in driving innovation and entrepreneurship in MSMEs. The insights derived from this study can provide valuable recommendations for business owners, policymakers, and HR practitioners to optimize HRM strategies. These can ultimately help in encouraging a culture of continuous improvement and business excellence. This could lead to sustainable growth as well as reducing regional disparities in the long run.

Literature Review

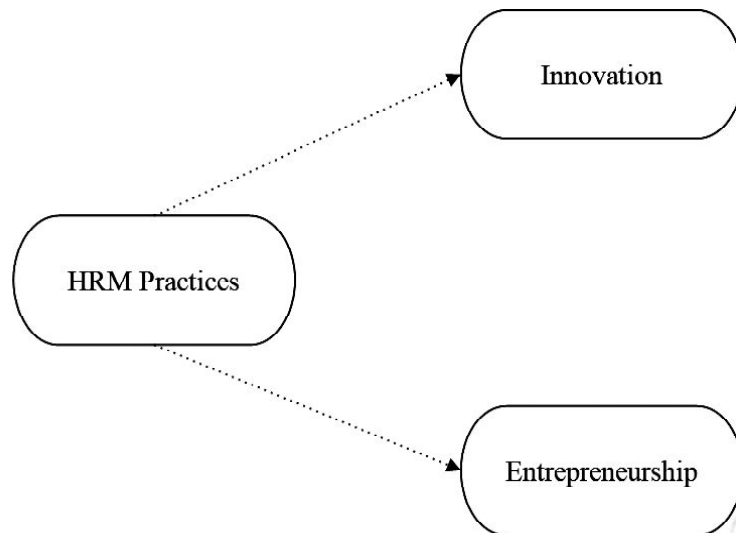
The Resource-Based View (RBV) of the firm postulates that HRM has a crucial role in promoting innovation and entrepreneurship through the development of valuable, rare, inimitable, and non-substitutable (VRIN) resources-based human capital (Barney, 1991). The VRIN resources help a firm to maintain a sustained competitive advantage in the market (Barney, 1995). Organizations with effective HRM practices can build a workforce that has the requisite skills, knowledge, and creativity for innovation (Wright et al., 2005). HRM has a decisive role in contributing to the innovation and entrepreneurship in organizations (Maheshwari et al., 2020).

Firms can create a culture that promotes creativity, risk-taking, and knowledge-sharing which are essential components of an entrepreneurial mindset through HRM practices (Boxall, 2022).

Innovation has a crucial role for organizational sustainability and competitiveness of a firm (Ça?ı?yan et al., 2022). HRM influences innovation with the help of talent management, learning and development, and an organizational culture that encourages experimentation (Shipton et al., 2005). It is to be noted that high-involvement work practices in the form of training, participation, and performance-based incentives have been linked to enhanced innovative capabilities (Vazquez-Bustelo & Avella, 2019). Moreover, transformational leadership that is facilitated by HRM strategies can drive employee motivation and creativity, further fostering innovation (Al Harbi et al., 2019). Entrepreneurship that happens in organizations known as intrapreneurship is driven by HRM practices that encourage autonomy, job enrichment, and reward mechanisms for innovative efforts (Dess et al., 1997). According to Hornsby et al. (2002), HRM policies that promote sharing of knowledge as well as cross-functional collaboration are essential for entrepreneurial success. Organizations that adopt entrepreneurial orientation through HRM also tend to be more adaptive to market changes and disruptive innovations (Rauch et al., 2009).

Several HRM practices contribute to the promotion of innovation and entrepreneurship in organizations (Hayton, 2005). Hiring employees with diverse skills and entrepreneurial potential is also found to enhance creative problem-solving (Kang et al., 2007). The presence of continuous learning opportunities in the organization also empowers employees with the skills necessary for innovation (Beugelsdijk, 2008). The presence of effective incentive systems that recognize entrepreneurial efforts can also motivate employees to pursue innovative initiatives (Gong et al., 2013). A supportive and flexible work culture in the organization drives risk-taking and experimentation (Zhou & George, 2001). Thus, from the literature review it is evident that HRM is an important driver of innovation and entrepreneurship as it fosters a culture of creativity, risk-taking, and continuous learning. In other words, HRM practices enable organizations to remain competitive through the use of human capital for innovative solutions as well as entrepreneurial growth. Figure 1 shows the proposed research framework used in the study.

Figure 1. Research Framework



Source: Author's own work

The authors have come up with the following propositions on the basis of literature review:

Proposition 1: HRM practices play a significant role in driving innovation among the employees working in the MSMEs of Jhargram.

Proposition 2: HRM practices have a crucial role in driving entrepreneurship among the employees working in the MSMEs of Jhargram.

Research Methodology

The present research study adopts an empirical approach to examine the influence of HRM practices on innovation and entrepreneurship. The respondents were drawn from diverse sectors such as manufacturing, food processing, handicrafts, retail, and services in various MSMEs located in Jhargram district, West Bengal. A purposive-cum-random sampling method was used. MSMEs were selected from the District Industries Centre (DIC) list. Employees were chosen randomly who met the inclusion criteria of being full-time with at least one year of experience. Data collection was done with the help of a structured questionnaire. We mailed a cover

letter and questionnaire which assured the confidentiality of their responses to 150 employees. The final sample consisted of 110 individuals (response rate 73.3%) with 77% male and 23% female shown in Table 1.

Table 1. Demographic Characteristics

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	85	77
	Female	25	23
Industry Sector	Manufacturing	35	31.8
	Services	25	22.7
	Retail	20	18.2
	Food Processing	18	16.4
	Handicrafts	12	10.9
	Total	110	100

In this study, HRM practices were treated as the independent variable and measured using a 10-item scale adapted from Conway (2004), with a sample item such as, "Regular performance feedback and guidance for improvement are provided." Innovation was considered the first dependent variable and was assessed through a six-item scale adapted from Bani-Melhem et al. (2018), with an example item being, "I bring innovative and creative ideas to my work." Entrepreneurship served as the second dependent variable and was measured using a five-item scale adapted from Su et al. (2023), with a representative item stating, "I am highly responsive to external market changes and practice lean manufacturing principles." In addition, gender was included as a control variable to account for potential differences in the perception of respondents. All items were rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), and gender was treated as a control variable. We have used regression analysis to test the propositions of the study. The Central Limit Theorem ensures sampling distribution in small to medium samples approaches normality which makes formal tests or box plot checks somewhat less critical (Hair et al., 2019). The sample size of 110 is adequate for regression analysis as it exceeds the recommended size of 100 observations (Harrell, 2015). Lastly, an independent t-test

was used to compare the scores for innovation and entrepreneurship between male and female participants (Field, 2018).

Results and Discussion

The descriptive statistics, inter-correlations, and reliability coefficients of the variables HRM Practices, Innovation, and Entrepreneurship used in the study are shown in Table 2. The mean values shown here indicated that participants reported relatively high levels of Entrepreneurship ($M = 5.61$, $SD = 1.17$) which is followed by Innovation ($M = 5.12$, $SD = 1.26$), and HRM Practices ($M = 4.93$, $SD = 1.22$). The inter-correlations were found to have significant positive associations among all the three variables of the study. HRM Practices showed a strong positive correlation with Innovation ($r = 0.72$, $p < 0.05$). It suggests that effective HRM practices are associated with increased innovation among the employees (Shipton et al., 2005). HRM Practices also indicated a strong correlation with Entrepreneurship ($r = 0.63$, $p < 0.05$). It denoted that effective HRM practices often translate to better entrepreneurial tendencies. This is consistent with prior studies that highlight the role of HRM in fostering entrepreneurial behavior (Rauch et al., 2009). Moreover, Innovation and Entrepreneurship are also significantly correlated ($r = 0.61$, $p < 0.05$). It implies that employees who are more innovative are also more likely to demonstrate entrepreneurial behaviors. These findings support existing literature which underscores that innovative employees are more likely to engage in entrepreneurial activities (Zhou & George, 2001). In other words, fostering an innovation-driven culture in organizations can lead to entrepreneurial initiatives.

Table 2. Descriptive statistics and inter-correlations

S. No.	Variables	Mean	SD	1	2	3
1	HRM Practices	4.93	1.22	(0.93)		
2	Innovation	5.12	1.26	0.72*	(0.89)	
3	Entrepreneurship	5.61	1.17	0.63*	0.61*	(0.91)

Notes: Cronbach's alpha values are shown in brackets. *Significant correlations at $p < 0.05$.

Source: Author's own work

The Cronbach's alpha values of HRM Practices (0.93), Innovation (0.89), and Entrepreneurship (0.91) indicated a strong internal consistency and reliability of the

measures used in the study. These results denote that HRM Practices have an important role in promoting both Innovation and Entrepreneurship. It highlights the importance of effective HRM practices in building a culture of innovation and entrepreneurial engagement in organizations. Table 3 presents the results of multiple regression analyses that examine the association between HRM practices as an independent variable and two dependent variables, that is Innovation and Entrepreneurship. The results show standardized beta coefficients, R-squared values, and F-statistics. The asterisks indicate the statistical significance at $p < 0.05$ threshold.

Table 3. Multiple Regression Analyses

	HRM Practices	R^2	F
Innovation	0.73*	0.51	114*
Entrepreneurship	0.61*	0.40	72.5*

Notes: * $p < 0.05$; and values in table are standardized β coefficients

Source: Author's own work

The standardized beta coefficient for HRM practices and Innovation was 0.73 alongside being statistically significant ($p < 0.05$). This indicates a strong positive association. It shows that higher levels of HRM practices are associated with higher levels of Innovation. The R-squared value of 0.51 indicates that 51% of the variance in innovation is explained by HRM practices. The F-statistic value of 114 was also significant ($p < 0.05$). It further supports the overall significance of the regression model. The standardized beta coefficient for HRM practices and Entrepreneurship was 0.61 alongside being statistically significant ($p < 0.05$).

This demonstrates a significant positive association between HRM practices and Entrepreneurship although it is slightly weaker than its relation with Innovation. The R-squared value of 0.40 denotes that 40% of the variance in Entrepreneurship is explained by HRM practices. The F-statistic value of 72.5 is again significant ($p < 0.05$). It confirms the significance of the overall model. In other words, Table 3 provides strong evidence that HRM practices have a prominent role in driving both innovation and fostering entrepreneurship. The findings of this study provide strong evidence that HRM practices hold a key when it comes to fostering both innovation and entrepreneurship among employees. The results also align with previous research that emphasize the importance of HRM strategies in promoting workplace creativity and

entrepreneurial behavior (Ma Prieto & Pilar Pérez-Santana, 2014). These findings suggest that HRM enhances the entrepreneurial tendencies of employees through risk-taking and recognition of opportunity (Hayton, 2005). However, in the context of MSMEs based in Jhargram, HRM practices have a slightly stronger effect on innovation. Lastly, an independent t-test was conducted to examine whether there were significant differences in Innovation and Entrepreneurship scores between male and female participants. The results indicated that the difference in Innovation and Entrepreneurship scores between genders was not statistically significant. Thus, gender does not have a substantial impact on either innovation or entrepreneurship. These findings indicate that both male and female employees have similar levels of innovative and entrepreneurial behavior in the presence of supportive HRM practices. These results are in contrast with studies suggesting gender disparities in entrepreneurial intentions (Kirkwood, 2009). However, it aligns with studies that found organizational culture and HRM strategies have a more prominent role than gender in shaping these behaviors (Brush et al., 2019).

Conclusion

This study investigated the impact of HRM practices on innovation and entrepreneurship in the MSMEs of Jhargram. The results found strong positive correlations between HRM practices, innovation, and entrepreneurship. This indicates that effective HRM strategies significantly contribute to both innovative and entrepreneurial behaviors among employees. Regression analyses also confirmed these relationships. It demonstrated that HRM practices are significant predictors of both innovation and entrepreneurship. HRM practices were found to have a slightly stronger effect on innovation compared to entrepreneurship. These results underscore the important role of HRM in building a culture of creativity and entrepreneurial engagement. It is to be noted that there are no significant gender differences in either innovation or entrepreneurship as revealed by the independent t-test. In other words, supportive HRM practices can effectively promote these behaviors regardless of gender. In this connection, MSMEs based in Jhargram should prioritize the development and implementation of robust HRM policies in the form of training, performance management, and decision-making to enhance their competitiveness. There should also be specific initiatives focusing on creative problem-solving and knowledge-sharing among the employees. Future studies must take certain contextual factors like industry type and organizational culture into consideration. This will help in a comprehensive understanding of the factors that influence innovation and entrepreneurship. This study has few

limitations due to its limited focus on MSMEs in Jhargram with a modest sample size. Moreover, it relied on cross-sectional design, and relied on self-reported data. This may restrict generalizability and causal inference. Additional control variables such as age, education, or firm size would have been desirable. Future research should consider larger and more representative samples through longitudinal or mixed-method approaches. It could incorporate multi-source data to reduce bias. Moreover, examining mediators, moderators, and firm-level performance measures would provide deeper insights.

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Linking Compensation to Employee Performance: Insights from Bangladesh's Banking Sector

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Abstract :

This study examines how compensation-related factors influence employee performance in Bangladesh's banking sector. Using a quantitative approach with a descriptive cross-sectional design, data were collected from 450 employees across various banks to examine the effects of salary and compensation, basic pay and job-related benefits, career development and recognition, and work environment and involvement. The results reveal that all four dimensions significantly predict employee performance. Competitive salaries and fair benefits are strongly linked to higher performance, while career development opportunities and supportive work environments further enhance employee motivation and productivity. These findings highlight the importance of comprehensive compensation strategies that integrate financial rewards, recognition, and conducive workplace conditions. The study offers practical insights for managers and HR practitioners, emphasizing the alignment of compensation practices with performance objectives to improve satisfaction and retention. Despite its contributions, the research is limited to one sector and relies on self-reported data. Future studies should extend the scope to other industries and regions, employ longitudinal designs, and incorporate objective performance metrics to validate and enrich these findings. Overall, this study underscores how strategic compensation practices can serve as a powerful lever for organizational effectiveness and employee growth.

Keywords: Compensation, Employee Performance, Reward Systems, Career Development, Working Environment.

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1.0 I. Introduction:

In the rapidly evolving business landscape, employee performance has emerged as a key determinant of organizational success. With increasing competition and the constant drive for efficiency, organizations are continuously seeking effective strategies to enhance their workforce's productivity (Shahid & Azhar, 2013). One of the most critical strategies highlighted in recent research is the design and

implementation of robust compensation systems (Omuya, 2018; Jalaman& Encarnacion, 2024).

Compensation, broadly defined as the total package of financial and non-financial rewards provided to employees, plays a vital role in attracting, retaining, and motivating employees, thereby directly influencing their overall performance (Dessler, 2011). In competitive industries such as banking, where efficiency, skill, and motivation are crucial, understanding the dynamics between compensation and employee performance has become increasingly significant (Dajani, 2015; Kurdi & Alshurideh, 2020; Cooke et al., 2019; Roy & Aimi, 2024).

A well-structured compensation package typically includes elements such as base salary, bonuses, incentives, and non-monetary benefits. Each component contributes uniquely to an employee's motivation and productivity. Armstrong and Taylor (2023) emphasize that a thoughtfully designed compensation structure not only fulfills employees' financial needs but also enhances recognition and a sense of valuekey drivers of long-term engagement. Similarly, several studies have demonstrated that competitive compensation strategies can significantly improve employee performance, productivity, and retention (Alhmoud&Rjoub, 2019; Hassan, 2022; Kamselem et al., 2022; Sorn et al., 2023).

When employees perceive their compensation as fair and adequate, they are more likely to be motivated, committed, and willing to exert discretionary effort to achieve organizational goals. Quader (2024) further stresses the importance of aligning compensation with employee expectations and market standards to promote satisfaction and loyalty. Effective compensation policies not only attract and retain talent but also contribute to organizational stability and reduced turnover.

The banking sector, in particular, faces mounting pressure to retain high-performing professionals amidst growing competition and evolving market dynamics (Ibidunni et al., 2016; Navid, 2024). Uygur (2013) found that employees in the banking industry respond strongly to compensation-based incentives, which can significantly enhance their productivity and efficiency. Linking compensation elements such as bonuses, performance-based incentives, and career development opportunities to measurable outcomes helps foster a performance-oriented culture (Rizal et al., 2014). Conversely, disparities or inconsistencies in compensation packages may lead to dissatisfaction and reduced morale, adversely affecting performance (Muguongo et al., 2015; Salisu et al., 2015).

Despite the recognized importance of compensation strategies, the mechanisms through which compensation influences employee performance remain complex and multifaceted. Factors such as individual characteristics, job roles, organizational

culture, and economic conditions can shape this relationship (Shiah-Hou & Cheng, 2012). Although prior research has established a general link between compensation and performance, there is a lack of sector-specific evidence, particularly in emerging economies like Bangladesh (Samad, 2008).

Bangladesh's banking sector faces unique challenges, including regulatory pressures, economic instability, and intense local and international competition (Chowdhury, 2002). In such a setting, effective compensation management becomes essential to sustain employee motivation and performance. Tailoring compensation strategies to employees' specific needs can help banks attract skilled professionals and ensure long-term commitment. However, studies focusing specifically on the Bangladeshi context remain limited (Siddiqi & Tangem, 2018).

Therefore, the objective of this study is to examine the impact of compensation on employee performance in Bangladesh's banking sector, identifying key components of compensation that most significantly influence performance outcomes. By fulfilling this objective, the study aims to bridge the existing research gap by offering context-specific insights into how compensation practices can be optimized to drive employee productivity and engagement. The findings are expected to contribute to both academic discourse and managerial practice by highlighting the strategic role of compensation in achieving organizational success within Bangladesh's competitive banking industry. Additionally, the study offers valuable implications for policymakers and practitioners in similar emerging economies seeking to strengthen the link between compensation and performance.

2.0 Literature Review

2.1 Concept of Compensation

Compensation includes various types of financial rewards and tangible benefits that employees receive within an employment relationship (Odunlade, 2012; Yanadori, 2014). This covers wages, salaries, incentive payments, bonuses, and commissions. As noted by Snell et al. (2010), employee compensation comprises all types of pay and rewards provided for job performance. Dessler (2011) further elaborates that compensation encompasses not only direct financial rewards, such as wages, salaries, incentives, commissions, and bonuses, but also indirect financial perks, including insurance and other monetary benefits linked to employment. Additionally, in their study, (Yousaf et al., 2014; Mahathir et al., 2020), explain that compensation can be both financial and non-financial, serving as a reward for an employee's contributions to the organization. Darma and Supriyanto (2017) notes that compensation includes everything employees receive as a reward for their work, emphasizing the

comprehensive nature of compensation systems. Similarly, Lipuku et al. (2022) describe compensation as any form of reward given to employees for their contributions to the organization. Therefore, effective compensation management is essential for ensuring employee satisfaction, maintaining productivity, and preventing turnover. Without adequate compensation, organizations may struggle with employee retention and face challenges in recruitment (Das & Baruah, 2013). The primary purpose of compensation management is to help organizations achieve strategic objectives and ensure both internal and external equity (Onuorah & Okeke, 2023). External equity ensures that positions are fairly compensated based on the labor market, while internal equity ensures that higher positions and more qualified individuals within the organization receive higher payouts. Compensation plays a pivotal role in human resource management as it directly affects employee motivation, job satisfaction, and overall performance (Jawaad et al., 2019; Idris et al., 2020). Well-designed compensation strategies align employees' efforts with organizational objectives, cultivating a workforce that is both motivated and productive (Quader, 2024; Nuraini, 2023). Recognizing the diverse components of compensation and understanding its influence on employee attitudes and behaviors are key for crafting effective compensation management practices.

2.3. Different Compensation Systems

Compensation systems are a cornerstone of human resource management, shaping how employees are rewarded, motivated, and retained. Different compensation models have emerged over time, including traditional base pay, performance-based pay, merit-based pay, outcome-based compensation, competency-based pay, and equity-based compensation (Sharma & Sharma, 2024). Each approach carries unique mechanisms, advantages, and challenges, making their selection critical to achieving organizational goals and maintaining workforce motivation. A well-designed compensation system aligns employee incentives with organizational objectives, ensuring fairness, engagement, and productivity. However, as organizations differ in strategy, structure, and culture, the effectiveness of each compensation type depends on contextual alignment with employee expectations and the broader business environment.

2.3.1. Performance-Based Compensation

Performance-based compensation ties employee rewards directly to measurable individual or team achievements. Studies by Larkin et al. (2012), Nyberg

et al. (2016), and Fulmer et al. (2023) emphasize that such systems enhance motivation and productivity by linking pay with output. Similarly, Young et al. (2012) and Gerhart (2017) found that performance-based incentives improve retention and organizational success. Holbeche (2012) and de Waal and Jansen (2013) also observed that performance-based structures attract high achievers, fostering competitive advantage. However, challenges persist in fairly evaluating performance outcomes, especially when performance metrics blend financial and non-financial indicators (Chatterji & Levine, 2006; Hornungová, 2017). Ensuring transparency and objectivity in assessment is therefore vital to the credibility and effectiveness of such systems.

2.3.2. Merit-Based Compensation

Merit-based pay systems reward employees for individual contributions and excellence in job performance. Research by Byrd and Chung (2021) and Oliveira et al. (2024) supports their motivational impact, while Heneman and Werner (2004) caution that evidence of their influence on overall organizational performance remains inconclusive. Maaniemi (2013) and Chamberlin et al. (2022) identified the need for more empirical research to evaluate merit pay's actual influence on productivity. Despite debates over its long-term effectiveness, merit-based compensation remains a popular mechanism for reinforcing performance culture, recognizing individual initiative, and differentiating high performers from average contributors.

2.3.3. Outcome-Based Compensation

Outcome-based compensation focuses on rewarding employees based on the achievement of specific results or predefined goals. It is especially common in service-driven sectors where measurable outcomes drive business success. Langenbucher and Vodopivec (2022) noted that this approach not only motivates employees but also strengthens competitiveness and satisfaction. Kang and Lee (2021) and Okeke and Onuorah (2023) further emphasized that aligning pay with outcomes enhances both employee interaction and organizational performance. This model enables firms to incentivize results rather than processes, driving efficiency and innovation. However, the emphasis on outcomes may sometimes overlook qualitative aspects of performance or teamwork if not carefully balanced.

2.3.4. Competency-Based Compensation

Competency-based compensation links rewards to demonstrated skills, knowledge, and capabilities rather than job titles or tenure (Chouhan & Srivastava,

2014; Brown & Armstrong, 2024). This approach encourages continuous learning, personal growth, and professional development, motivating employees to expand their competencies to contribute more effectively. According to Brown and Armstrong (2024), this strategy aligns employee rewards with organizational success and fosters accountability. It also complements other HR functions such as performance management, training, and recruitment (Tripathi & Agrawal, 2014; Shet et al., 2019). However, the distinction between competency-based and skill-based pay often blurs in practice, necessitating clear guidelines for fair implementation (Ledford & Heneman, 2011; Neathey & Reilly, 2003).

2.3.5. Equity-Based Compensation

Equity-based compensation offers employees ownership stakes such as shares or stock options-linking their financial rewards directly to the company's long-term success (Bebchuk & Fried, 2009). This system is particularly prevalent in startups or firms seeking to attract top talent without high initial salary costs. Frye (2004) found that the ratio of salary to equity often depends on company growth stages rather than job hierarchy. Equity-based rewards align employee interests with organizational performance, fostering commitment and innovation (Arnolds & Boshoff, 2002; Akter & Husain, 2016). However, the delayed nature of financial gains and the complexity of vesting conditions can limit short-term motivational effects.

2.3.6. Comparative Synthesis of Compensation Systems

To provide a clearer understanding of the distinctions and similarities among different compensation systems, Table 1 summarizes their key features, advantages, and potential limitations.

Table 1: Comparative summary of compensation systems and their key features

Type of Compensation System	Basis of Reward	Key Advantages	Potential Challenges	Best Fit Context
Performance-Based	Individual/team achievement against targets	Increases motivation and productivity; attracts high performers	Difficult to measure performance fairly; potential bias	Sales, finance, or project-based roles

Merit-Based	Individual contribution and job excellence	Recognizes personal effort; promotes competition	May not improve overall performance; subjectivity in evaluation	Professional or administrative roles
Outcome-Based	Achievement of specific results or deliverables	Encourages efficiency and results orientation	Overemphasis on measurable outcomes may reduce teamwork	Service and client-facing sectors
Competency-Based	Skills, knowledge, and capabilities	Promotes learning and growth; supports development culture	Blurred distinction with skill-based pay; requires clear metrics	Knowledge-intensive industries
Equity-Based	Ownership in company (shares/options)	Aligns employee and organizational goals; fosters loyalty	Delayed reward realization; complex valuation	Startups, tech firms, or high-growth industries

This comparative synthesis highlights that no single compensation system is universally superior. Instead, effectiveness depends on organizational strategy, employee characteristics, and industry context. In sectors like banking, where both performance metrics and service quality are crucial, a hybrid compensation model combining performance, competency, and outcome-based components may yield the most balanced results.

2.4. Compensation Management

Benuyenah (2024) describes compensation as the full range of financial rewards employees receive in exchange for their work. This encompasses both direct and indirect financial benefits, such as salaries, wages, bonuses, commissions, profit sharing, overtime pay, housing allowances, travel allowances, and tips. Udodiugwu et al. (2024) further clarify that employee benefits, which form part of indirect compensation, are additional rewards linked to an employee's job position. Examples include health insurance, retirement plans, paid leave, vehicle allowances, educational support, stock ownership plans, and social security. While some of these benefits are legally required, others are voluntary and provided by employers to attract and retain talented employees. This differentiation underscores the dual role of compensation management: ensuring legal compliance while also using voluntary benefits as a tool for enhancing employee satisfaction and retention. According to Daniel (2019) compensation management is an essential component of human resource management, involving the systematic planning, organization, and regulation of both direct and indirect payments in relation to employees' contributions to the organization. Yamoah(2013) emphasizes that effective compensation management

aims to maintain a productive workforce, ensure equitable compensation, and comply with regulatory requirements set by government authorities. This approach is intended to balance the needs of the organization with those of its employees, ensuring that compensation is both fair and legally compliant. In contrast, Gomez-Mejia et al. (2014) describes compensation management as the effort by an organization to establish a pay structure that enables the recognition and reward of high-performing employees. The objective of this strategy is to motivate and incentivize top performers to enhance their performance and work diligently, thereby fostering a competitive environment within the organization. By doing so, organizations seek to drive higher levels of employee engagement and productivity.

2.5. Employee Performance

Employee performance is a multifaceted construct that reflects the extent to which individuals effectively carry out their assigned responsibilities and contribute to organizational goals. It encompasses both qualitative and quantitative dimensions of work, including the quality, quantity, timeliness, and effectiveness of task completion (Akbar & Se, 2017; Darma & Supriyanto, 2017). Performance is not only an output-oriented concept but also a behavioral expression of how employees utilize their knowledge, skills, and motivation to fulfill their roles (Aliyyah et al., 2021).

Armstrong (2006) views performance as both a behavioral and social outcome that transforms potential into action, emphasizing that it is not limited to results but includes the process of achieving them. Similarly, Latham (2023) defines employee performance as the degree to which individuals deploy their competencies and attitudes to achieve defined objectives and meet expectations. This interpretation broadens the concept beyond measurable outputs to include the psychological and social aspects of work behavior.

Performance measurement serves as a key component of human resource management, often operationalized through performance reviews or evaluations. Gernal et al. (2019) highlight that effective performance measurement must consider multiple indicators such as efficiency, accuracy, attendance, timeliness, and cooperation. These metrics allow organizations to assess not only what employees accomplish but also how they achieve their goals. Wariati (2024) further emphasizes that performance evaluation should integrate both individual and collective contributions, as collaboration and teamwork increasingly influence organizational success.

Moreover, performance is shaped by internal and external factors such as motivation, work environment, leadership, and organizational culture. When

employees are motivated, recognized, and supported, their engagement and productivity tend to improve, leading to sustainable performance outcomes (Rivera et al., 2021). Parmenter (2015) categorizes performance indicators into dimensions such as the nature and quantity of work, time management, and collaboration, which together form a comprehensive framework for assessing employee effectiveness. In summary, employee performance is a dynamic and multidimensional construct that captures how individuals transform their capabilities into measurable outcomes. It integrates behavioral, cognitive, and contextual factors, making it a central determinant of organizational effectiveness and competitiveness.

2.6. Relationship between Compensation and Employee Performance

A substantial body of research underscores a strong relationship between compensation strategies and employee performance; however, this relationship is not uniformly interpreted across contexts. Tinaikar (2017) emphasizes that prior studies consistently demonstrate a significant link between compensation approaches and both performance and retention. Similarly, Duffhues and Kabir (2008) found a positive association between pay levels and employee performance, attributing this to reward systems and employee ownership initiatives. Yet, these findings tend to emphasize the instrumental value of compensation, often overlooking the psychological and contextual dimensions that influence employee responses to pay systems.

While many studies argue that competitive compensation packages and appropriate incentives improve performance and organizational growth by attracting, motivating, and retaining talent (Osibanjo et al., 2014; Thibault Landry et al., 2017; Naidu & Satyanarayana, 2018), such perspectives often assume a linear and universal relationship. Kang and Lee (2021) challenge this assumption by highlighting that in today's competitive business environment, innovative compensation strategies may not automatically yield improved performance unless they align with intrinsic motivation and organizational culture. This suggests that compensation alone may be insufficient to sustain high performance without complementary factors such as fairness perceptions, employee engagement, and growth opportunities.

Nuraini (2023) reinforces that compensation remains a critical element of employee performance enhancement, yet cautions that its influence is mediated by other motivational and contextual factors. Similarly, Sufriadi (2024) found that recognition and positive rewards increase enthusiasm, but the sustainability of such motivation depends on how rewards are perceived and delivered. In contrast, Shin-Rong and Jaw Wei (2012) identified a noticeable disconnect between compensation

and employee performance, implying that excessive reliance on monetary rewards can diminish intrinsic motivation.

Furthermore, Terera and Ngirande (2014) and Boachie-Mensah and Dogbe (2011) both assert that performance-based pay systems can be effective when properly implemented, enhancing both individual and organizational outcomes. However, Sudiardhita et al. (2018) argue that the positive effects of compensation on work motivation, job satisfaction, and performance depend heavily on the perceived fairness and transparency of the compensation system. In summary, while compensation clearly plays a pivotal role in influencing performance, the relationship is complex and contingent upon contextual, psychological, and organizational variables.

2.7. Conceptual Framework

The relationship between compensation and employee performance can be understood through a structured framework that links various elements of compensation to performance outcomes. Compensation is a multifaceted construct, encompassing salary and direct financial rewards, job-related benefits, career development opportunities, recognition, and work environment factors (Dessler, 2011; Armstrong & Taylor, 2023). Each of these components influences employee motivation, satisfaction, and engagement, which in turn affects their performance. Empirical research suggests that well-designed compensation strategies enhance both individual productivity and organizational effectiveness (Osibanjo et al., 2014; Rizal et al., 2014; Naidu & Satyanarayana, 2018). By integrating these elements into a cohesive model, organizations can identify which compensation components have the strongest impact on employee performance, enabling targeted strategies for workforce motivation and retention.

Conceptual Framework

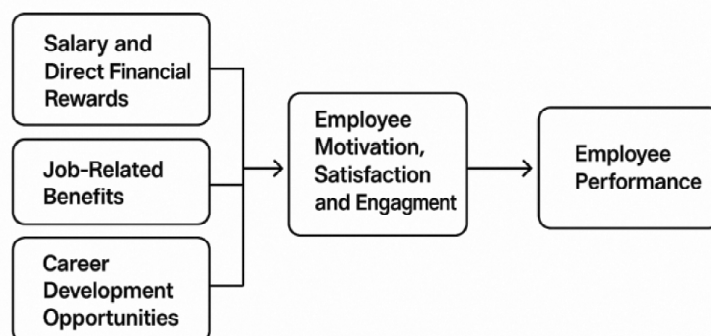


Figure-1: Conceptual Framework

2.7. Research Gap

While global studies provide a broad understanding of compensation and performance, there is a paucity of research focusing specifically on the banking sector in Bangladesh, which has unique regulatory, economic, and cultural factors. Existing studies often overlook sector-specific compensation models and fail to distinguish the impact of various compensation components, such as base salary versus performance-linked incentives, on employee performance. Additionally, there is limited exploration of how compensation affects employee motivation, retention, and job satisfaction in this context. Addressing these gaps can provide a deeper understanding of how compensation strategies can be optimized to enhance employee performance in Bangladesh's banking sector.

2.8. Objectives of the study

Based on the identified research gap, this study aims to examine the relationship between compensation practices and employee performance within the banking sector of Bangladesh. The specific objectives of the study are as follows:

1. To analyze the impact of different compensation components on employee performance in the banking sector of Bangladesh.
2. To identify which elements of compensation most strongly influence employee motivation and performance outcomes.
3. To assess how compensation strategies contribute to employee satisfaction, engagement, and overall productivity.

3.0. Methodology

The research employed a quantitative methodology, utilizing numerical data to examine the relationship between compensation and employee performance (Creswell & Creswell, 2017). This approach is particularly suitable for identifying measurable relationships, testing hypotheses, and drawing conclusions that can be generalized to a larger population. Quantitative research allows for the use of structured tools and statistical methods, providing a rigorous framework for objective analysis (Saunders, Lewis, & Thornhill, 2016). A descriptive cross-sectional research design was adopted, which involves collecting data at a single point in time to capture the existing state of relationships and perceptions among employees (Kothari, 2004). This design was chosen over a longitudinal approach due to its efficiency in capturing current employee attitudes and behaviors without requiring extended observation

periods. Given the dynamic nature of the banking sector and the study's aim to explore existing compensation practices and their immediate influence on performance, a cross-sectional design offers a practical and cost-effective means to obtain a comprehensive snapshot of the phenomenon (Sekaran & Bougie, 2016). It also allows for the analysis of associations between variables within a defined timeframe, which aligns with the research objectives.

The population for the study included all employees working in selected banks across Bangladesh, ensuring a comprehensive representation of the sector. A simple random sampling technique was used to select respondents, ensuring that each member of the population had an equal chance of inclusion (Bryman, 2012). This method minimizes selection bias and enhances the representativeness of the sample. A total of 450 employees were selected as respondents, a sample size determined using Yamane's (1967) formula based on the desired confidence level and margin of error. This sample size was considered adequate for producing statistically reliable results while maintaining efficiency in data collection and analysis (Fowler, 2013). Data were gathered using structured questionnaires, designed to explore different dimensions of compensation (e.g., salary, benefits, incentives, recognition) and employee performance (e.g., motivation, job satisfaction, productivity). The structured nature of the questionnaire ensured consistency and comparability in responses, which is essential for quantitative analysis (Hair et al., 2010). The instrument was divided into two parts: Section A contained close-ended questions on compensation and performance constructs, measured using a five-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), while Section B collected demographic data. To ensure validity and reliability, the questionnaire underwent pilot testing with a small group of 30 respondents from the banking sector. Feedback from the pilot test was used to refine ambiguous or redundant items, thereby improving content validity. Internal consistency reliability was assessed using Cronbach's alpha, where all constructs yielded values above the recommended threshold of 0.70, confirming acceptable reliability levels (Hair et al., 2010). Data analysis was conducted using Statistical Package for the Social Sciences (SPSS) version 26.0, which facilitated both descriptive and inferential statistical analyses. Descriptive statistics (mean, standard deviation, and frequency distribution) were used to summarize the data, while inferential statistics, including correlation and regression analysis, were employed to examine the relationships between compensation dimensions and employee performance (Pallant, 2020). To ensure ethical rigor, informed consent was obtained from all participants, and confidentiality of responses was strictly maintained. Participants were briefed on the study's objectives, assured of the

voluntary nature of their participation, and informed of their right to withdraw at any stage without penalty, in accordance with established ethical research standards (Israel & Hay, 2006).

4.0. Analysis and Discussion

4.1. Demographic Profiles

This section outlines the demographic characteristics of the participants involved in the study. Analyzing these demographics is essential for contextualizing the results and ensuring the sample accurately reflects the broader population being studied. The demographic variables include factors such as age, gender, educational background, years of experience, and job roles within the banking industry. These details help identify potential demographic trends or patterns that could impact the relationship between compensation and employee performance.

4.1.1. Age of the Respondents

The age distribution of the respondents provides insight into the demographic composition of the bank employees surveyed. The table below shows the frequency and percentage of respondents within various age groups, ensuring the total number of respondents is 450.

Table-2: Age of the Respondents

Age Group	Frequency	Percent (%)
20-30	207	46.0
30-40	151	33.6
40-50	69	15.3
50-60	23	5.1
Total	450	100

The largest group of respondents falls within the 20-30 age range, representing 46.0% of the total sample. This is followed by the 30-40 age group, comprising 33.6% of the respondents. Those aged 40-50 make up 15.3% of the sample, while the 50-60 age group accounts for 5.1%. The distribution indicates a predominantly young workforce within the banking sector, with nearly 80% of respondents under the age of

40. This youthful demographic suggests that the banking sector in Bangladesh is attracting a significant number of younger professionals. This could be attributed to the sector's growth, the increasing availability of entry-level positions, and the appeal of the banking profession to recent graduates. The relatively lower representation of older age groups (40-60) may also reflect the dynamics of career progression within the sector, where younger employees are more prevalent in junior to mid-level positions, while older employees might occupy senior roles but in smaller numbers. Understanding this age distribution is crucial for developing targeted employee retention and motivation strategies, as younger employees may have different career expectations and motivational drivers compared to their older counterparts.

4.1.2. Gender

Gender is another crucial factor in determining the performance of employees within an organization. The following pie chart illustrates the ratio and respective percentages of male and female employees in the organization. Several researchers have found that performance can vary significantly between genders. Some scholars reveal that performance is greatly influenced by gender, making it an essential factor to investigate when assessing employee performance.

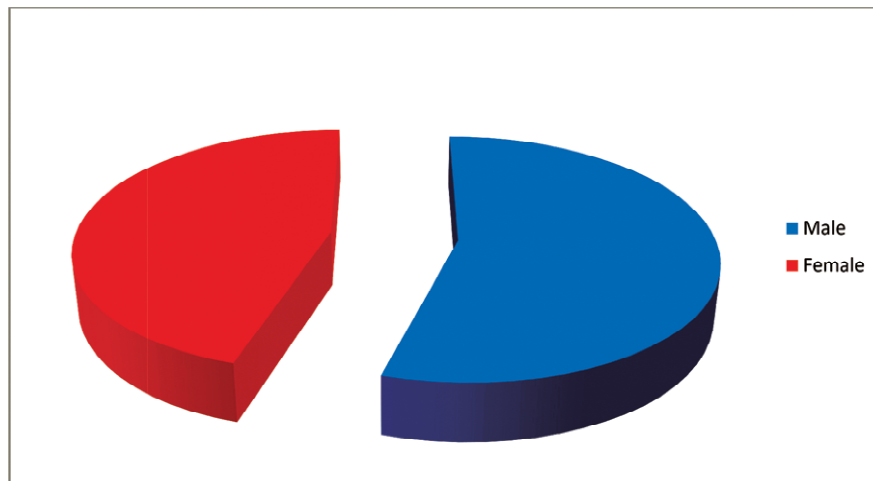


Figure-2: Gender of the Respondents

From the figure, the number of male employees is 246, representing 54.7% of the sample. Female employees' number 204, accounting for 45.3% of the sample. This data clearly shows a notable difference in the gender distribution within the organization, with male employees outnumbering female employees. The analysis

indicates a higher representation of male employees compared to female employees in the organization. Understanding this gender distribution is vital for developing equitable performance assessment and management strategies, as well as ensuring gender diversity and inclusion within the workplace. The disparity in gender representation may reflect broader industry trends or specific organizational practices that favor one gender over the other. Such insights can prompt the organization to examine its recruitment, retention, and promotion policies to identify any inherent biases or barriers that may exist. Moreover, fostering a balanced gender representation can enhance the diversity of perspectives and ideas within the organization, potentially leading to more innovative solutions and improved overall performance. Therefore, the organization should prioritize gender diversity as part of its strategic goals to create a more inclusive and dynamic work environment. Recognizing and addressing gender disparities is not only a matter of fairness but also a critical component of achieving sustained organizational success and employee satisfaction.

4.1.3. Marital Status of the Respondents

The marital status of respondents is key to understanding its impact on work life and performance. It can affect job satisfaction, stress levels, and productivity. Analyzing marital status helps reveal how personal responsibilities or support systems influence professional performance and compensation perceptions. This insight is vital for tailoring compensation strategies and support programs to meet the diverse needs of employees, thereby enhancing overall management effectiveness and employee satisfaction.

Table-3: Marital Status of the Respondents

Marital Status	Frequency	Percent (%)
Unmarried	135	30.0
Married	270	60.0
Divorced	30	6.7
Total	450	100.0

The marital status distribution of the respondents shows that 135 individuals, or 30.0% of the sample, are unmarried. The majority of respondents, 270 individuals, representing 60.0% of the sample, are married. A smaller proportion, 30 individuals or 6.7%, are divorced. The data indicates that the majority of employees are married,

which could influence various aspects of their work life, such as job stability, work-life balance, and overall job satisfaction. The significant proportion of married respondents suggests that family responsibilities and commitments might play a crucial role in shaping employees' work behavior and performance. The data indicates that the majority of employees are married, which could influence various aspects of their work life, such as job stability, work-life balance, and overall job satisfaction. The high percentage of married respondents suggests that family responsibilities and commitments might play a significant role in shaping employees' work behavior and performance.

4.1.4. Educational Qualification of the Respondents

Understanding the educational qualifications of respondents provides insight into how educational backgrounds influence job roles, performance, and compensation expectations. This information helps in assessing the alignment between educational attainment and job requirements, guiding strategies for skill development and career advancement.

Table-4: Educational Qualification of the Respondents

Educational Qualification	Frequency	Percent (%)
Post Graduate	182	40.4
Graduate	124	27.6
MPhil	85	18.9
PhD	59	13.1
Total	450	100.0

The distribution of educational qualifications among the respondents indicates a well-educated workforce. The largest group, 182 individuals or 40.4% of the sample, holds a Post Graduate degree. This is followed by 124 respondents, accounting for 27.6%, who have completed their undergraduate degrees. Eighteen percent of respondents hold an MPhil degree, which amounts to 85 individuals, while 59 respondents, or 13.1% of the sample, have achieved a PhD. This distribution suggests that a significant portion of the workforce possesses advanced educational qualifications, with nearly 70% of respondents having either Post Graduate or higher degrees. The substantial representation of highly educated employees could influence organizational performance positively, as higher educational qualifications often correlate with enhanced skills, knowledge, and analytical capabilities sector.

4.1.5. Nature of Job

Examining the nature of the respondents' jobs offers crucial insights into their roles, responsibilities, and the work environment. It helps in understanding how different job characteristics influence performance, compensation, and job satisfaction, thereby informing better organizational practices and policies.

Table-5: Nature of Job

Job Type	Frequency	Percent (%)
Temporary	50	11.1
Permanent	379	84.2
Part-Time	21	4.7
Total	450	100.0

The distribution of job types among the respondents reveals that the majority of employees are engaged in permanent positions. Specifically, 379 employees, constituting 84.2% of the sample, hold permanent jobs. This indicates a stable and secure workforce within the organization. In contrast, 50 employees, representing 11.1% of the sample, are employed in temporary roles. This suggests that a smaller portion of the workforce is in positions with a limited duration, which may be associated with specific projects or seasonal needs. The remaining 21 employees, or 4.7% of the sample, work part-time. This group constitutes the smallest portion of the workforce, reflecting a minor segment of employees with reduced working hours.

4.1.6. Job Title

Analyzing the job titles of respondents provides a clear understanding of their positions within the organization, which can influence various aspects of their work experience, including responsibilities, compensation, and career development opportunities. This information helps in assessing how different job roles impact performance and satisfaction levels.

Table 6:Job Title

Job Title	Frequency	Percent (%)
Senior Executive	302	67.6
Junior Executive	145	32.4
Total	450	100.0

The distribution of job titles among the respondents shows that a significant majority of employees, specifically 302 individuals or 67.6% of the sample, hold the position of Senior Executive. This high percentage suggests that the organization has a substantial number of employees in senior roles, which may indicate a focus on experienced professionals or leadership within the company. Conversely, 145 employees, accounting for 32.4% of the sample, are classified as Junior Executives. This group represents a smaller but still significant portion of the workforce, reflecting entry-level or less senior positions within the organization.

4.1.7. Types of Organization

Understanding the types of organizations where respondents are employed offers valuable insights into how organizational structure and industry type may influence employee experiences and performance. This information aids in contextualizing the study's findings by accounting for variations across different organizational environments and sectors.

Table 7: Types of Organization

Types of Organization	Frequency	Percent (%)
Public	291	68.4
Private	159	31.6
Total	450	100.0

The Table-7 presents the distribution of respondents based on the type of organization they work for, focusing exclusively on public and private sectors. A significant majority, 291 respondents, work in public organizations, representing 68.4% of the total sample. This indicates a strong representation of employees from government or state-run institutions in the study. In contrast, 159 respondents are employed in private organizations, making up 31.6% of the sample. This shows a substantial portion of the workforce in the study is engaged in privately owned enterprises, which may have different compensation and performance dynamics compared to public organizations.

4.1.8. Job Experiences

Examining job experiences provides a deeper understanding of employees' tenure, roles, and professional growth within their organizations. This aspect helps to contextualize how experience level may impact job performance and satisfaction,

offering a clearer picture of how compensation and other factors interact with various stages of employees' careers.

Table 8 : Job Experience

Job Experience (Years)	Frequency	Percent (%)
Below 1 year	36	8.0
1-3 years	16	3.5
3-6 years	69	15.3
6-9 years	177	39.3
9-12 years	156	34.7
12-15 years	32	7.1
Total	450	100.0

Job experience is a critical factor contributing to better performance in one's field. The distribution of respondents based on their years of job experience is as follows: 8.0% of employees have less than 1 year of experience, indicating a small group of newcomers to their respective fields. Employees with 1-3 years of experience make up 3.5% of the sample, showing a slight increase in early-career professionals. Those with 3-6 years of experience constitute 15.3% of the respondents, reflecting a significant segment of mid-level experience. A notable portion, 39.3%, of the respondents have 6-9 years of experience, representing the largest group in the sample. This suggests that a considerable number of employees are in the middle of their career trajectory, likely possessing a balanced blend of expertise and recent knowledge. Employees with 9-12 years of experience make up 34.7% of the sample, indicating a substantial group of seasoned professionals who bring extensive experience to their roles. Finally, those with 12-15 years of experience constitute 7.1% of the respondents, representing a smaller, yet significant, segment of highly experienced individuals.

4.1.9. Salary

Analyzing salary data is crucial for understanding its role as a key determinant of employee performance and satisfaction. Salary impacts employees' motivation and engagement, influencing their overall job satisfaction and productivity. This section explores how variations in salary levels align with performance metrics and employee expectations, providing insights into how competitive compensation packages can affect organizational outcomes.

Table 9 : Salary Distribution

Salary Range (BDT)	Frequency	Percent (%)
Below 30,000	24	5.3
30,000 - 40,000	50	11.1
40,000 - 50,000	164	36.4
Above 60,000	212	47.1
Total	450	100.0

Table 9 illustrates the monthly salary distribution among employees in the organization. The salary ranges are categorized into four parts, with the lowest payment scale being below 30,000 BDT and the highest above 60,000 BDT. The data reveals that 5.3% of the employees fall within the below 30,000 BDT salary range, indicating a small group earning the lowest wages. Employees earning between 30,000 and 40,000 BDT constitute 11.1% of the sample, showing a modest increase in the mid-low salary bracket. A significant portion, 36.4%, of the employees earn between 40,000 and 50,000 BDT, representing a substantial middle-income group. The largest group of employees, 47.1%, earns above 60,000 BDT, highlighting a considerable number of highly compensated individuals. The analysis indicates that the majority of employees are in the higher salary range of above 60,000 BDT, while the smallest group of employees earns below 30,000 BDT. This distribution suggests that the organization has a significant proportion of well-compensated employees, which could reflect the organization's strategy to attract and retain talent through competitive salaries.

4.2. Reliability Test

The internal consistency of the survey items was assessed using Cronbach's alpha (Nunnally, 1978). This coefficient is a widely used metric to evaluate the reliability of a scale, particularly when multiple items are designed to measure the same construct. Ensuring the reliability of data is crucial for any study, as the accuracy of the results depends heavily on trustworthy measurements. In this study, the Cronbach's alpha was calculated to be 0.823, which is well above the acceptable threshold of 0.7. This indicates that the items used in the survey have strong internal consistency, ensuring the reliability of the data for further analysis.

Table-10 Reliability Statistics

Cronbach's Alpha	Number of Items
0.823	24

The Cronbach's alpha of 0.823 for the 24 items in this study indicates strong internal consistency, confirming that the items effectively measure the intended constructs with reliability. This level of reliability ensures that the data collected is dependable and suitable for further statistical analysis, thereby supporting the robustness of the research findings.

4.3. Frequency Distribution of Responses on Compensation Impact on Employee Performance

The Table-11 below presents the responses to the questionnaire on how various aspects of compensation impact employee performance. The data was collected from 450 respondents and categorized into five levels: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA).

Table 11: Frequency Distribution of Responses on Compensation Impact on Employee

No	Particulars	SD	D	N	A	SA
1	My salary influences me to perform well	27	45	72	72	234
2	The bonus I receive motivates me to perform well.	0	27	72	243	108
3	My Basic pay is reviewed periodically which helps me to improve my performance.	0	9	117	171	153
4	An increase in my basic pay motivates me to improve performance	0	45	81	234	90
5	Flexible working hours, work from home, employee wellness healthcare, childcare helps me to improve performance	9	54	117	180	90
6	Organizational recreation facilities motivate me to perform well	0	18	180	216	36
7	Organizational benefits like medical aid, cell phone, and transport benefits are fairly given based on performance	27	27	135	171	90
8	The transport facilities provided by the organization help me to improve my performance	9	36	144	162	99
9	My organization provides the tools and technologies needed for my job which helps me to improve performance	0	63	135	162	90
10	My job offers incentives for gaining new skills or knowledge that helps me to improve performance	9	36	45	261	99
11	My benefits meet my (and my family's) needs well which helps me to improve my performance	18	9	81	225	117
12	The wellness benefits offered by my company have improved my performance	9	36	45	261	99
13	I am compensated fairly relative to my local market which helps me to improve my performance	27	9	90	225	99

14	I have sufficient opportunities for personal and professional growth which helps me to improve performance	9	54	117	153	117
15	My organization offers adequate opportunities for promotions and career development which helps me to improve performance	36	90	117	144	63
16	I feel recognized for my hard work and successes at work which helps me to improve my performance	27	45	72	72	234
17	I can solve problems independently and have the freedom to plan which helps me to improve my performance	0	27	72	108	243
18	I feel completely involved in my work which helps me to improve my performance	0	9	117	171	153
19	Compensation policies and practices affect my performance	0	45	81	90	234
20	The monetary pay and remuneration structure of the organization impacts my job performance	9	54	117	180	90
21	Rewards are handled the same way for all employees in our organization which helps me to improve performance	0	18	90	126	216
22	The retirement accounts offered by this organization match employee performance	27	27	67.5	171	157.5
23	Organizational concerns for health and wellness help me to perform well	9	36	99	162	144
24	I am entitled to a reward if the whole organization achieves its set target which helps me to improve performance	0	63	90	207	90

The data indicates that a significant majority of employees believe that their compensation, including salary and bonuses, influences their performance. For example, 68% of respondents agree or strongly agree that their salary influences them to perform well, while 78% feel similarly about bonuses. Regular reviews of basic pay and periodic increases are seen as motivators by 72% and 80% of respondents, respectively. Flexible working arrangements and organizational benefits also play a critical role in enhancing employee performance, with 60% and 58% agreeing or strongly agreeing that these factors contribute positively. Moreover, 70% of employees feel that having the necessary tools and technologies provided by the organization improves their performance. The data highlights the importance of fair and competitive compensation structures, with 72% of respondents feeling fairly compensated relative to the local market and 82% believing that compensation policies and practices directly impact their performance. Additionally, a significant portion of respondents (81%) value the opportunity for personal and professional growth as a factor in their performance. The responses suggest that effective compensation strategies, including salary, bonuses, benefits, and opportunities for growth, are crucial for motivating employees and enhancing their performance within the organization.

4.4. Descriptive Analysis of Compensation Impact on Employee Performance

The Table-12 below presents a descriptive analysis of how various aspects of compensation impact employee performance. The data, collected from 450 respondents, include minimum and maximum scores, mean values, and standard deviations for each questionnaire item.

Table 12 : Descriptive Analysis of Compensation Impact on Employee

Dependent Variable	Questions	Minimum	Maximum	Mean	Std. Deviation
Salary and Compensation	Q1: My salary influences me to perform well.	1.0000	5.00	3.4000	0.98467
	Q2: The bonus I receive motivates me to perform well.	1.0000	5.00	3.6800	0.92691
	Q4: An increase in my basic pay motivates me to improve performance.	1.0000	5.00	3.6000	0.98150
	Q7: Organizational benefits like medical aid, cell phone, and transport benefits are fairly given based on performance.	1.0000	5.00	3.4400	0.98467
	Q13: I am compensated fairly relative to my local market which helps me to improve my performance.	1.0000	5.00	3.7200	0.93808
	Q19: Compensation policies and practices affect my performance.	1.0000	5.00	3.6800	0.92691
	Q20: The monetary pay and remuneration structure of the organization impacts my job performance.	1.0000	5.00	3.6800	0.92691
Basic Pay and Job-Related Benefits	Q3: My basic pay is reviewed periodically which helps me to improve my performance.	1.0000	5.00	3.5600	1.03425
	Q5: Flexible working hours, work from home, employee wellness healthcare, childcare helps me to improve my performance.	1.0000	5.00	3.6400	1.03425
	Q8: The transport facilities provided by the organization help me to improve my performance.	1.0000	5.00	3.6800	0.88192
	Q9: My organization provides the tools and technologies needed for my job which helps me to improve performance.	1.0000	5.00	3.6800	0.92691

	Q11: My benefits meet my (and my family's) needs well which helps me to improve my performance.	1.0000	5.00	3.6000	0.97327
	Q12: The wellness benefits offered by my company have improved my performance.	1.0000	5.00	3.6000	0.97327
	Q22: The retirement accounts offered by this organization match employee performance.	1.0000	5.00	3.6800	0.92691
Career Development and Recognition	Q14: I have sufficient opportunities for personal and professional growth which helps me to improve performance.	1.0000	5.00	3.7600	0.92457
	Q15: My organization offers adequate opportunities for promotions and career development which helps me to improve performance.	1.0000	5.00	3.7600	0.92457
	Q16: I feel recognized for my hard work and successes at work which helps me to improve my performance.	1.0000	5.00	3.7200	0.93808
Work Environment and Involvement	Q6: Organizational recreation facilities motivate me to perform well.	1.0000	5.00	3.3600	0.92691
	Q10: My job offers incentives for gaining new skills or knowledge that helps me to improve performance.	1.0000	5.00	3.7200	0.93808
	Q17: I can solve problems independently and have the freedom to plan which helps me to improve my performance.	1.0000	5.00	3.8000	0.90659
	Q18: I feel completely involved in my work which helps me to improve my performance.	1.0000	5.00	3.8000	0.90659
	Q23: Organizational concerns for health and wellness help me to perform well.	1.0000	5.00	3.8000	0.90659
	Q24: I am entitled to a reward if the whole organization achieves its set target which helps me to improve my performance.	1.0000	5.00	3.6800	0.92691

The Table 12 provides a comprehensive overview of employee responses to various aspects of compensation, benefits, and work environment factors that impact performance, organized into four key dependent variable groups. The responses to the questionnaire on compensation impact on employee performance reveal significant insights across several key areas. In terms of salary and compensation, employees show moderate to high levels of agreement regarding its influence on performance, with mean scores ranging from 3.4000 to 3.7200 and standard deviations between 0.92691 and 0.98467. This indicates that employees perceive their salary, bonuses, and compensation policies as significantly affecting their performance. Particularly, the high mean scores for fair compensation and the impact of monetary pay reflect strong positive sentiments toward how these factors contribute to their performance. For basic pay and job-related benefits, responses show favorable perceptions, with mean scores from 3.5600 to 3.6800 and standard deviations between 0.88192 and 1.03425. Employees view periodic reviews of basic pay, flexible working hours, transport facilities, and wellness benefits as beneficial to their performance. The consistency in these responses underscores the effectiveness of these factors in enhancing job performance. Regarding career development and recognition, employees report high value, with mean scores between 3.7200 and 3.7600 and standard deviations from 0.92457 to 0.93808. The data indicates that opportunities for personal and professional growth, as well as recognition for hard work, are crucial for performance, reflecting employees' belief in their significant impact. Lastly, the work environment and involvement category shows positive views, with mean scores from 3.3600 to 3.8000 and standard deviations between 0.90659 and 0.92691. Employees appreciate organizational recreation facilities, incentives for skill development, and the freedom to plan their work, with high mean scores indicating a strong belief in the importance of a supportive work environment and high involvement in improving performance.

4.5. Correlation Analysis

Correlation analysis is a statistical method used to evaluate the strength and direction of relationships between two or more variables. When applied to employee performance, it helps to understand how factors like salary, incentives, and workplace environment correlate with performance outcomes. By computing correlation coefficients, this technique identifies the extent to which variations in one variable are linked to changes in another. Understanding these relationships is crucial for organizations seeking to optimize performance and implement strategies that enhance employee satisfaction and productivity.

Table-13: Correlation Analysis

Dependent Variable	Minimum	Maximum	Mean	Std. Deviation	Correlation with Performance
Salary and Compensation					
My salary influences me to perform well	1.0000	5.0000	3.4000	0.98467	0.78
The bonus I receive motivates me to perform well	1.0000	5.0000	3.6800	0.92691	0.80
An increase in my basic pay motivates me to improve performance	1.0000	5.0000	3.6000	0.98150	0.80
Basic Pay and Job-Related Benefits					
My Basic pay is reviewed periodically	1.0000	5.0000	3.5600	1.03425	0.80
Flexible working hours, work from home, etc.	1.0000	5.0000	3.6400	1.03425	0.65
Organizational benefits (medical aid, cell phone, transport)	1.0000	5.0000	3.4400	0.98467	0.73
The transport facilities provided by the organization	1.0000	5.0000	3.6800	0.88192	0.65
My organization provides tools and technologies for my job	1.0000	5.0000	3.6800	0.92691	0.77
Career Development and Recognition					
My job offers incentives for gaining new skills or knowledge	1.0000	5.0000	3.7200	0.93808	0.73
My benefits meet my (and my family's) needs well	1.0000	5.0000	3.6000	0.97327	0.77
I am compensated fairly relative to my local market	1.0000	5.0000	3.7200	0.93808	0.77
I have sufficient opportunities for personal and professional growth	1.0000	5.0000	3.7600	0.92457	0.76
My organization offers adequate opportunities for promotions	1.0000	5.0000	3.7600	0.92457	0.76
I feel recognized for my hard work and successes at work	1.0000	5.0000	3.7200	0.93808	0.73
Work Environment and Involvement					
I can solve problems independently and have the freedom to plan	1.0000	5.0000	3.8000	0.90659	0.77
I feel completely involved in my work	1.0000	5.0000	3.8000	0.90659	0.76
Organizational recreation facilities	1.0000	5.0000	3.3600	0.92691	0.65
Overall Performance	1.0000	5.0000	3.7600	0.92457	1.00

The Table-13 provides a comprehensive view of how various factors correlate with employee performance. Notably, the correlation values illustrate significant insights into the relationship between performance and other variables. For instance, salary and basic pay exhibit strong correlations with performance, with coefficients of 0.78 and 0.80, respectively. This indicates a robust association between higher salary and improved performance, suggesting that employees who receive higher compensation tend to perform better. Similarly, the bonus structure also shows a strong correlation (0.80) with performance, underscoring the importance of monetary rewards in driving employee performance. Among the variables, basic pay and bonuses stand out with the highest correlations, reflecting their crucial role in enhancing performance. This suggests that financial incentives are pivotal in motivating employees and improving their output. On the other hand, variables such as flexible working hours and organizational recreation facilities, while still positively correlated with performance, show moderate correlations ranging from 0.65 to 0.73. This indicates that these factors contribute to performance improvement, but not as strongly as salary and bonuses. The moderate correlation suggests that while these elements are beneficial, their impact on performance is less pronounced compared to direct financial compensation. Additionally, the overall performance variable itself has a perfect correlation of 1.00 with itself, which is expected and reinforces the accuracy of the data in reflecting performance. This perfect correlation ensures that the performance measure is consistently aligned with its own metric. Overall, these findings highlight that while financial compensation significantly influences performance, other factors like flexible working arrangements and organizational benefits also play a supportive role, albeit to a lesser extent. This nuanced understanding can guide organizations in designing effective strategies to enhance employee performance by balancing financial incentives with supportive work conditions.

4.6. Regression Analysis

To analyze the relationship between performance (dependent variable) and the independent variables a multiple linear regression analysis has been employed.

Table-14: Model Summary Table

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.865	0.749	0.745	0.563

The regression analysis reveals a robust correlation between the predictors and employee performance, with an R value of 0.865. This strong correlation indicates that the independent variables Salary and Compensation, Basic Pay and Job-Related Benefits, Career Development and Recognition, and Work Environment and Involvement are significantly related to employee performance, explaining a substantial portion of its variability. The R^2 value of 0.749 confirms that approximately 74.9% of the variability in performance is accounted for by the model, demonstrating the effectiveness of these predictors in capturing performance variations. The adjusted R^2 of 0.745, which slightly adjusts for the number of predictors, reinforces the model's validity by ensuring that the explanatory power is not overstated due to the inclusion of multiple predictors. Lastly, the standard error of the estimate, at 0.563, reflects the average deviation between observed and predicted performance values. This relatively low standard error suggests that the model's predictions are fairly precise and close to the actual performance outcomes, underscoring the model's practical relevance and accuracy in explaining employee performance.

4.7. ANOVA

The ANOVA table provides a comprehensive overview of the variance in employee performance explained by the regression model and the variance attributable to other factors.

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	689.134	4	172.283	65.417	0.000
Residual	234.569	445	0.527		
Total	923.703	449			

The Table-15 presents the Sum of Squares for the regression as 689.134 with 4 degrees of freedom (df), which represents the total variance in employee performance explained by the predictors: Salary and Compensation, Basic Pay and Job-Related Benefits, Career Development and Recognition, and Work Environment and Involvement. This is compared with the residual sum of squares of 234.569, which indicates the variance in performance that the model does not explain. The residual degrees of freedom are 445, corresponding to the number of observations minus the predictors and one. The Mean Square for the regression is calculated by dividing the Sum of Squares for the regression (689.134) by its degrees of freedom (4), while the Mean Square for the residuals is calculated by dividing the Residual Sum of Squares (234.569) by the residual degrees of freedom (445). The F-value of

65.417 is obtained by dividing the Mean Square for the regression by the Mean Square for the residuals, which indicates that the model significantly enhances the prediction of performance over a model without predictors. The Significance value (Sig.) of 0.000 shows that the regression model is statistically significant, with less than a 0.001 probability that the observed relationship is a result of chance.

4.8. Coefficients Analysis

Coefficients analysis in regression modeling reveals the relationships between the dependent variable and each independent variable. This study uses coefficients analysis to evaluate the impact of salary, basic pay and job-related benefits, career development and recognition, and work environment and involvement on employee performance in Bangladesh's banking sector. By quantifying the influence of each predictor, this analysis highlights which factors most significantly enhance employee performance, providing insights for effective management practices and policy development.

Table-16: Coefficients Analysis

Variable	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
Constant	1.234		2.458	0.015
Salary and Compensation	0.320	0.275	5.618	0.000
Basic Pay and Job-Related Benefits	0.267	0.240	4.782	0.000
Career Development and Recognition	0.212	0.192	4.165	0.000
Work Environment and Involvement	0.181	0.165	3.847	0.000

The regression coefficients provide valuable insights into the relationship between employee performance and the various predictors included in the model. The constant (1.234) represents the intercept of the regression line, indicating the expected performance score when all predictors are set to zero. This baseline value is crucial for understanding the starting point of performance levels in the absence of any influence from the predictors. The coefficient for Salary and Compensation is 0.320, which signifies a positive relationship between salary levels and employee performance. This implies that as salary and compensation increase, employee performance tends to improve. This coefficient underscores the significant impact that financial rewards and compensation packages have on motivating employees to perform better. The Basic Pay and Job-Related Benefits coefficient is 0.267. This positive value suggests that enhancements in basic pay and job-related benefits are

also positively associated with improved performance. Employees who receive better pay and more comprehensive job-related benefits are likely to experience increased motivation and performance. Career Development and Recognition has a coefficient of 0.212. This indicates that opportunities for career advancement and recognition play a meaningful role in boosting employee performance. When employees perceive that their career growth is supported and their achievements are recognized, their performance levels are positively affected. Lastly, the coefficient for Work Environment and Involvement is 0.181. This value shows that improvements in the work environment and greater involvement in work-related activities contribute positively to employee performance. A supportive and engaging work environment enhances employees' overall performance by fostering a more conducive and participative atmosphere.

5.0. Conclusion

This study provides an in-depth analysis of how various aspects of compensation influence employee performance within the context of Bangladesh's banking industry. By employing a quantitative approach with a descriptive cross-sectional research design, the study utilized a sample of 450 employees to explore the relationships between several compensation-related factors and employee performance. The research aimed to identify the key predictors of performance and to provide actionable insights for organizational leaders seeking to enhance performance through compensation strategies. The analysis revealed that four major factors Salary and Compensation, Basic Pay and Job-Related Benefits, Career Development and Recognition, and Work Environment and Involvement are significant predictors of employee performance. The study demonstrated a strong positive correlation between these factors and employee performance. Specifically, Salary and Compensation and Basic Pay and Job-Related Benefits showed the highest correlations, indicating that higher salaries and improved basic pay are closely associated with better performance outcomes. The positive impact of these compensation elements highlights their critical role in motivating employees and enhancing their productivity. Furthermore, Career Development and Recognition and Work Environment and Involvement were also identified as important predictors of performance. These findings underscore the importance of investing in career development programs, such as training, promotions, and formal recognition, to boost employee performance. Similarly, creating a supportive work environment and involving employees in decision-making processes contribute significantly to performance improvements. The results suggest that a holistic approach to compensation, which includes both financial rewards and non-financial benefits, is essential for maximizing employee performance.

5.1. Theoretical and Managerial Implications

The results of this research offer significant theoretical insights into compensation and performance management. Firstly, the observed strong relationships between different compensation elements and employee performance confirm the importance of compensation in shaping employee motivation and productivity. This finding aligns with established theories like Equity Theory and Expectancy Theory, which suggest that employees are driven by the fairness of compensation and anticipate rewards that reflect their contributions. Secondly, the study enhances understanding of how various compensation factors, such as salary, base pay, career development opportunities, and work environment, interact to affect performance. The differentiated influence of these factors challenges the conventional notion that compensation universally impacts performance across contexts. Instead, it underscores the complexity of compensation's role in driving performance. Finally, the study validates the need for a comprehensive compensation framework by providing evidence that integrating various compensation components is more effective than focusing on a single element. This supports theoretical models that promote a holistic approach to compensation management.

The study's findings provide several actionable insights for managers and organizational leaders aiming to enhance employee performance through effective compensation strategies. Firstly, it is crucial for managers to develop and implement strategic compensation plans that align with the study's results. By improving salary and compensation packages, organizations can attract and retain talented employees more effectively. Regular reviews and adjustments to compensation are essential to remain competitive and responsive to market changes. In addition, introducing or refining performance-based incentives and bonuses can significantly motivate employees, linking their performance directly to rewards. This alignment encourages employees to focus their efforts on organizational goals, thereby enhancing overall productivity. Managers should also ensure that basic pay is supported by comprehensive job-related benefits, including health care, transport allowances, and other essential supports. A well-rounded benefits package can lead to increased employee satisfaction and improved performance. Investing in career development and recognition programs is another key strategy. Providing employees with opportunities for skill development, promotions, and formal recognition of their achievements fosters motivation and can lead to higher performance and job satisfaction. Moreover, creating a positive work environment and enhancing employee involvement in decision-making are important for improving performance. Managers should aim to build a supportive and inclusive culture that values and empowers

employees. Finally, ongoing assessment of compensation strategies is vital. Managers should regularly evaluate the effectiveness of their compensation systems and seek feedback from employees to ensure the strategies remain relevant and effective. Using performance reviews and employee input, managers can make informed adjustments to their compensation policies, thus maintaining a system that drives employee performance and contributes to organizational success.

5.2. Limitations

This study has several limitations that should be acknowledged. Although the sample of 450 employees was substantial, the research focused exclusively on the banking sector in Bangladesh, which may limit the generalizability of the findings to other industries or geographic contexts. The specific compensation structures and organizational dynamics within the banking sector may differ significantly from those in other sectors, reducing the broader applicability of the results. The use of a cross-sectional research design, which captures data at a single point in time, prevents the examination of the long-term effects of compensation on employee performance across different career stages. Future research adopting a longitudinal design could provide insights into how changes in compensation over time influence employee performance and motivation. Another limitation arises from the reliance on self-reported data, which may be affected by response biases, including social desirability bias, over- or underestimation of performance, or recall errors. Such biases could influence the accuracy of the reported compensation perceptions and performance outcomes. Future studies could mitigate this issue by integrating objective performance metrics, such as productivity data, performance appraisals, or multi-source feedback, to validate self-reported information. Finally, this study focused primarily on compensation-related factors, including salary, benefits, career development, and work environment, without accounting for other potential determinants of employee performance, such as job role complexity, organizational culture, leadership style, or external economic conditions. Including these factors in future research could offer a more holistic understanding of the drivers of employee performance and the interplay between compensation and broader organizational contexts.

5.3. Future Research Directions

Future research should seek to address several areas where this study has limitations. Broadening the scope to encompass multiple sectors beyond the banking industry could yield a more complete understanding of how compensation influences

employee performance across different fields. Additionally, conducting research across various geographic regions would help improve the generalizability of the results. Longitudinal studies are also recommended to track changes in compensation and their impact on performance over an extended period, shedding light on the long-term effects and the relationship between compensation adjustments and employee outcomes. To improve accuracy and minimize biases, future research could incorporate objective performance measures, such as performance evaluations and productivity indicators, alongside self-reported data. Expanding the range of factors considered such as job satisfaction, organizational culture, and external economic influences would provide a more comprehensive understanding of the drivers of employee performance. Moreover, integrating qualitative research methods like interviews or focus groups could deepen the insights into employees' perceptions of compensation and its influence on performance, offering a richer context to complement the quantitative findings.

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Re-visiting Development through subjects- Quest for a non-totalizing Paradigm

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Abstract :

The paper seeks to look at possibilities for articulation of a development paradigm with universal claims, that is non-totalizing. It looks at the different development paradigms over the years from the vantage point of the Subjects. In the process it analyses the elements or universal claims and totalizing effects in the prevalent development paradigms and seeks to project a development Paradigm which is non-totalizing. It also seeks to understand, if for defining such a paradigm, there is a requirement of an alternative representation of the economy.

Keywords : Non-totalizing, development, subjects, decentred-disaggregated, universal.

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I. Introduction:

My point of analysis in this essay has been to articulate a development paradigm with universal claims that is non-totalizing. Before I begin the (desired) articulation process, I seek to draw some attention to the theoretical categories of universal and totalizing. While strolling in the sloppy terrains of these terms, I thought of taking the initial hide to the Dictionary. Universal as a word according to the Oxford Dictionary is something which is "applicable to all cases", whereas the meaning of totalizing derived from the same source states, "to make or combine into a total".

While analysing these meanings in the context of the desired analysis, the first point that strikes the mind is that can something which is 'universal' be non-totalizing? - the advent of the question is evident, since universality normally echoes totality, in turn making the contradictory existence of both an oxymoron. However, I seek to bring forth a difference between the two terms in a politico-philosophical level. Universal can be placed in the domains of a natural act talking of general applicability, but totalizing falls somewhat into a political domain which involves a relation of power. The way I see it, power relation in a totalization process involves projection of a grand narrative by foreclosing all other differences that are in opposition to the concerned narrative. In the domains of social sciences, such totalizing actions

have often been noticed, where the key beliefs of the power elites have been imposed by foreclosing all differences, thus presenting it as a "Regime of truth". Although universal in that sense, appears a relatively innocent, depoliticized term, the term universal claim is not. It again involves an active agency or a subject which is making the claim. However, for the purpose of analytical convenience in this paper, we do not initially attach the act of erasure of differences to universal claims. Hence, the basic difference that I pose is that a universal claim is a claim of something which is applicable for all. But when the process of that claiming involves foreclosure of all other differences opposed to the claim, it becomes a totalizing act. This difference should have been foregrounded well before proceeding forward.

Having made that difference clear, I proceed with the process of theorizing the category of "Development". In that course, I seek to trace the presence of universal claims and totalizations in the pre-existing development paradigms and look for some articulation of the required non-totalizing paradigm with universal claims. Theorizing any category begins with two basic nodes- the epistemology one undertakes and one's entry point. Here, while I seek to address the category of "Development" as a whole, I try to dig into the parts which constitute, as well as are constituted by the whole. That in a way, summarizes my epistemological position, which I derive from Resnick & Wolff's (1987) exposition of overdetermination . This epistemological position helps us to incorporate the dynamicity of the world beyond the narrow logics of causality. Under this epistemology, every entity is a process and is said to be constituted by all other processes existing in the society, which again follow the same logic of constitution of the former. Overdetermination has been used as an epistemological position by Resnick and Wolff in their version of Class focused Marxian Theory, from which I borrow for carrying on this analysis. In their words- To say that theory is an overdetermined process in a society is to say that its existence, including all its properties or qualities, is determined by each and every other process constituting that society. Theory is the complex effect produced by the interaction of all those other processes. As such an effect, the process of theory embodies the different influences of many of its determinants.

Resnick and Wolff (1987)

Taking an overdeterministic epistemological position prevents the essay from falling into the traps of essentialism, which remains laden with reducing the attempted theorization to one or a few essence(es).

Having clarified the epistemological position, comes the entry point. While addressing the development paradigm in this paper, my entry point to the theory would be the individual(s). However, by individual, I tend to deviate from the celebrated deterministic notion of the individual in the discipline of economics guided by

instrumental rationality, working under a utility maximizing motive. Theorization of an individual of that kind reduces the individual to a mere economic objective, thus falling into the traps of reductionism or essentialism. The 'individual' I seek to pose as the 'subject' in this paper, is itself a process, which in every moment is determining and being determined by all other processes (economic, cultural, political, physical, natural, etc.) working in the concerned society. In that way, this subject is an overdetermined subject, which cannot be reduced to any specific essence because of its inherent cultural, psychological, political, economic and natural heterogeneities which are dynamic in nature. There's no denial that the choice of this entry point involves abstraction; but being an overdetermined process itself, the subject abstracted is not an abstract subject in itself.

This overdetermined subject plays a crucial role in my explanation of the issue of concern in the subsequent sections, where I seek to address "Development" from the vantage point of the subject(s), which are subjected to in the process of Development. The subsequent section analyses the dominant development paradigms appearing till date from the proposed entry point, in the same time tracing the elements of universal claims and totalizations in the same. The final section hints towards the possibility of a paradigm of development, which is universal, yet non-totalizing.

II. The Subject(s) of Development

Development has emerged as a concern in the field of academia and policy making mainly from the early 1950s. There have been various theories of development over the years in the discourse, which have had their important contributions to the field. This paper desires to throw light on them, but from the stance I had described earlier. The process of Development initially began with the motive of uplifting the so called underdeveloped, and that process of development was to be carried forward by agencies which may have been from outside of or from within the concerned subjects. However, the claims of development projects over the years have not only targeted the so-called 'underdeveloped' sections of the society but have flagged universality in terms of progress in the entire society. The way I see the dominant development paradigms over much of 20th century and early 21st century, I intend to move beyond the usual nomenclature of 'mainstream' and 'alternative' development paradigms and try to categorize them into three categories from my entry point of the subject stated earlier. These three categories illuminate in front of us three ways of understanding the process of development from a politico-philosophical lens.

- a) Development for the Subject(s)
- b) Development of the Subject(s)
- c) Development within the Subject(s)

a) Development for the Subject(s).

Development since its advent, has been predominantly described as a progressive process (or project) of improving the conditions of the subjects while the action or mission of the agencies (mainly the State) entrusted with the duty has primarily been - continual progress of the 'downtrodden'. This model of development is linear and well-acknowledged. There exists a benevolent State which honestly intends to work for its subjects with the universal promise of progress. Development discourse holds ample examples of such development paradigms aimed at progress or betterment. On one hand, there has been the dominant form of economic growth-driven development of the Rostow's type, where the foundation of development lies on a positive transgression in the national income/output of an economy and the logic of transition states that benefits of growth would trickle down to the downtrodden. Economic growth in this sense acts as the normative catalyst and also the justifier behind all actions of the State. But often the modest intent of this top-down progressive action for the subjects is met with dissent from the subjects themselves. The universalization of the trajectory of development manifests itself as a totalizing paradigm, where the indigenous life forms perceive the actions of the State as actions of power, oppressing their natural conditions of life and livelihood. The development experience of the Indian economy post-independence is an exemplificatory example of this development provoked dissent and problems of totalizing tendencies of the grand narrative of development for subjects. Table 1 lists some such events.

Table 1: Development provoked dissent in post-independence India - Examples

Project/Development Action	Location	Date	Nature of Dissent
Narmada Dam Project	Gujarat, Madhya Pradesh	1961–Present	Displacement of tribal communities, environmental concerns, and inadequate rehabilitation.

Chipko Movement	Uttarakhand	1973	Protest against deforestation and commercial logging, led by local villagers.
Silent Valley Hydroelectric Project	Kerala	1973–1985	Environmental concerns over biodiversity loss in the Silent Valley rainforest.
Narmada Bachao Andolan	Narmada River Basin	1985–Present	Large-scale displacement of people, environmental damage, and inadequate compensation.
Posco Steel Plant	Odisha	2005–2017	Land acquisition protests by local farmers and tribal communities.
Koodankulam Nuclear Power Plant	Tamil Nadu	1988–Present	Safety concerns, displacement, and fear of radiation among local fishing communities.
Singur Land Acquisition	West Bengal	2006–2008	Farmers protested against land acquisition for Tata Motors' Nano car factory.
Niyamgiri Mining Project	Odisha	2008–2013	Tribal opposition to bauxite mining in the Niyamgiri hills, sacred to the Dongria Kondh tribe.
Kashmir Hydroelectric Projects	Jammu & Kashmir	2010–Present	Protests over environmental concerns and displacement in the ecologically sensitive region.
Sterlite Copper Plant	Thoothukudi, Tamil Nadu	1996–2018	Environmental pollution and health hazards led to massive protests and police firing.
Aarey Forest Metro Shed	Mumbai, Maharashtra	2019	Protests against deforestation and loss of green cover for metro rail construction.
Farm Laws Protest	Nationwide (Punjab, Haryana)	2020–2021	Farmers protested against three farm laws, fearing loss of income and exploitation.
Great Nicobar Development Project	Andaman & Nicobar Islands	2021–Present	Concerns over deforestation, displacement of indigenous tribes, and ecological damage.

Source: Self-constructed from various news portals.

Later inclusions to the development theories have been various welfare activities beyond economic growth and social needs programs aimed at the subjects who according to the state, are in some compromised positions. And with a genuine intention to uplift them, the state steps in with its gift of development. With Amartya

Sen's theory of Development as "freedom" (Sen, 2000) and the emergence of corresponding Human Development theories, Development Discourse projected far more universal claims of working for the subjects. This was because of the inclusion of several other parameters than economic growth, which really encouraged the Developmentalists to universally claim for working for all its subjects. However, the manifestation of such forms of development might also have power relations operating within, which might not be visible coercive forms as displayed in the aforementioned table, but operates within the psyche of the subjects concerned, evoking subtle totalizing tendencies. To foreground this process, I have to go to my second categorization of development as development of the subject(s).

b) Development of the Subject(s)

I use this category to show how the discourse of development had inherently held power dynamics within it. The use of the word "Discourse" here is intentional, as there has been a continuous discursive process of construction of a regime of truth around the dominant tradition of 'Capitalist Development' (Chakrabarti & Dhar, 2023). The entire growth-oriented development theories of the Classical or Neo-classical theories or the countering dependency theories have been the same. Such notions of development impact a subject heavily, as the former plays an important role in moulding individuals' thought, subjecting them towards an all-pervasive concept of itself. Foucault explains this by his concept of 'Governmentality', where the "mentality" of the subject is formed by an ensemble of "institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of [government]" (Sanyal, 2007). It is moreover like government of oneself by virtue of the wills of some other agency inflicted on the subject. The agency can be the State, the capitalist, the monarch, the system or any entity at a position of superiority in the relations of power. However, in the context of development as we know it, mainly the State plays the role of the active agency in its different renditions (neo-liberal, capitalist, etc.) along with the non-state agencies like the NGOs (International and National).

The relations of power work in such a manner that Development or economic growth induced development is perceived as the only form of Development. Any other opposing possibilities are eliminated or foreclosed. That's how Neo-liberalism works today- by developing subjects which comply with the terms of the system, the logics of the system. That is how (capitalist) development has worked for years, by developing their own subjects, by generating consent either through repressive apparatus of the state (during violent encroachments of subjects from their lands in the name of development) or through the Althusserian Ideological Development

Apparatus leading to interpellation the subjects (Chakrabarti & Dhar, 2023). The resultant paradigm of development generating from such a notion appears as a national project of catching up. It is sharply focussed on growth and material change, in the expense of dissolution of individual and communal rights and loss of ecological sustainability. If the subjects are developed (or made) in such a logic, then all such adversities imposed upon them with the trope of development appears to be beneficial for them. i.e. "Development of the subjects" works through the logic of "Development for the subjects". Such a notion of development of subjects according to a specific claim has to be totalizing, as it inherently involves foreclosure of differences, as I have stated earlier. Even Amartya Sen's theory of 'Development as freedom' reduces itself to individual as the subject and object of analysis and the collective subjects such as social classes do not appear in his theory, nor does any analysis of what articulates these collective agents such as exploitation and domination. Thus, Amartya Sen's paradigm too, though proposing a relatively 'liberal' paradigm of development, does not directly address the elements of class (or caste and gender) politics and conflicts from itself (Navarro, 2000). This shows, Sen's paradigm also comprises elements of totalizations in terms of power relations excluding certain processes. The problem with both these notions, viz. 'for the subjects' and 'of the subjects' is that they theorize development from a top-down approach. Even if we do not take an ethical judgement, in most of the cases, the logical inconsistency in case of both these theories lies in the fact that, their propositions talk about the subject(s) without concrete engagement with the subjects. That logic paved way for the relatively recent approaches of bottom up development paradigms in form of localised communities on behalf of those opposing the top down approaches of development. To unpack that terrain, I seek to define the third category of my analysis.

c) Development within the Subject(s)

Recent developments in Development theories have been to dismantle the top-down approach of Development programmes, imposed upon by the agency or the authority on the subjects, owing to the presence of the elements of totalizations in it. The argument from the proponents of this section has been that a top-down approach is unable to incorporate the inherent heterogeneities within the subjects subjected to development. The resultant effect manifests itself in destroying the natural, environmental, social customs of the subjects concerned. In contrast, what these proponents propose is a "from below" approach of development by means of community development programmes, which are built within the subjects. I use the term within in the sense that the process of development proceeds from within the

subjects, where 'with' signifies the involvement of the subjects in the process of Development, and being started from below, it can relatively understand the perspectives and contextual conditions of the subjects well, thus resulting into development 'in' the subjects themselves.

It would be unfair to question the non-totalizing nature of these theories, but that is not true in entirety. There have been critiques from certain sections of academia against these theories on the ground that often these theories of development reduce themselves down to homogenization of the so-called modernization discourse in a singular category, ignoring the heterogeneities in the same. Pieterse in his paper, tries to propose a critique of these theories of development including those of the post developmentalist theories as:

Some of the weaknesses of this kind of position (anticipating the further discussion of post-development) are the following:

- > Mainstream development is simplified as a single, homogeneous thrust toward modernization and its diversity, complexity and adaptability are underestimated.
- > While the theoretical claim is for a dialectical relationship between mainstream and alternatives, the actual argument takes the form of a simple dualistic opposition and the dialectics, the ways in which main-stream and alternatives shape and influence one another, slip out of view.
- > In order to maximize the opposition between mainstream and alternative, the appeal of the mainstream to various constituencies is underestimated.

Pieterse(1998)

However, these criticisms cannot be subjected to all those theories. But at least a portion of these theories though claiming to be within subjects, considering their heterogeneities, ends up in homogenizing the subjects, claiming some kind of universality. Another critique against these paradigms has been that although they critique the metanarratives of developments, they themselves often get critiqued of falling into the metanarratives of critiques. This precisely is the standard critique against Lyotard's Post modernism. Such a tendency can be totalizing in a sense that the subjects within the development process often get guided by certain principles, refusing to see other options and turning them down in names of homogenous categories of "capitalist" or "modern". In these cases, often non-state actors play roles of developing subjects of their kind. The critique

of grand narratives leads to valorisation of alternative narratives, which in some cases are as worse as foreclosing other possibilities, thus ending up in totalization. Thus, even development process conducted from within subjects can lead to totalizing tendencies, trying to project their claim as universal.

III. Moving beyond Universal Claims- a possibility?

Given my analysis of the literature over the years, interrogating different paradigms, what appears is that, universal claims tend to be totalizing. My conjecture in this point would be claiming anything as universal raises a possibility of a responsibility of legitimizing the claim, which often leads to delegitimization of certain other claims by elements of power. Under such a scenario, it becomes a thoughtworthy question that whether we need to move beyond universal claims? In that context, I seek to draw attention to another perspective, which attempts to get rid of universal claims.

Gibson-Graham in her book *End of Capitalism (As we knew it)* (1996), presents a scenario where Capitalism is seen as a hegemonic formation, in which the capitalist class process dominates over all other processes existing in the 'economy'. She presents 'economy' as a De-centred Disaggregated space. Contesting the hegemonic of capitalism as the dominant social representation, she tries to show how the capitalist class process dominates over the other class processes by means of an iceberg representation (Figure 1). The initial terminology of the name of the book as end of a dominant structure may appear puzzling. But the (As we knew it) term describes the real project. What they aim is to dismantle capitalism as the social descriptor it is. Gibson Graham's (1996, 2006) theory projects a deconstruction of the representation of economy to a space where the non-capitalist processes prevailing can be foregrounded. They attack this capitalocentric representation of capitalism as universal, where everything is viewed and analysed through the lens of the Capital. Such a vision does not allow us to look at anything beyond capital. Such a vision, as I see it, is the most powerful totalizing machinery that works within the subjects, subjecting them to the trope of Development, foreclosing all other possibilities available to them in the process.

Figure 1: The Ice-berg view of the economy



Source: *End of Capitalism (As we knew it)* by Gibson- Graham

In contrast, Gibson-Graham proposes development of communities, which not being imaginary communities are formed on the basis of her notion of being-in-common. Being-in-common does not only imply economic community building by distribution of surplus, but also formation of ethical subjects who tend to look beyond capital and attempt to reside in common in all perspectives of life. Whether her notion of such an economy is good or bad, is beyond the purview of the paper. But they are essentially non-totalizing in the sense that what they claim as an 'economy' is not universal, in the sense of it being defined in terms of its disaggregated space itself. Or one can say, in this case the universal itself is an antithesis of itself, being decentred and disaggregated. It proposes a valorisation of communities at the level of local, but that never are disassociated with other class and non-class processes existing in the economy. Hence a development perspective of that kind from below rising from within the subjects, but not with monist universal claims can be non-totalizing and even a possibility for future. The universal here is the natural state of affairs, messy and disaggregated constituted by different processes. Only such a universal with no monist claims can be non-totalizing.

IV. Concluding with a Hope?

What I can conclude from this exercise is that, any paradigm with monist universal claims, majorly tend towards being totalizing. However, that is not a universal claim I intend to make. But I have also projected a perspective which doesn't make universal claims but is non-totalizing. I don't wish to propose an absolutist claim. But my conjecture would be a paradigm or a theory that in its core, seeks to provide space for the heterogeneities and differences without attempting to engulf them and accepts their presence in interconnectivities tends to have a universal element in it without the claiming of itself. That may not be called a paradigm, but might definitely provide a perspective, which opens up a space for possibility. For that, there should be a hope or a vision of such possibilities, as Isabelle Stengers states-

"Hope is the difference between probability and possibility"

And to have that hope, the subjects should get out of their capitalocentric vision of life. Once the subjects get out of that kind of a vision, there foregrounds a wave of possibilities, which may even turn the subjects into subjects being-in-common, and gives rise to some new development paradigm, which is universal without a claim, non-totalizing in nature.

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Notes

See Discipline and Punish by Foucault (1975)

The term "Overdetermination" was however borrowed from Freud by Althusser.

"Constitute" here has been used in the sense of 'bringing into effect'.

Here, I intend not to go deep into the prevailing literature of subjects by Althusser, Foucault, Lock, etc. and keep the meaning of "Subjects" simply as 'entities having some kind of a disposition'. However, that in no way is meant to undermine the role of interpellation of those subjects being subjected to and their mutual constitution with all other subjects. The formation of the subjects by the process of development are later described in the course of the paper.

See Arsel & Dasgupta (2015) to get a critical look on the development paradigms and the role of development studies.

It is difficult to critique Sen's frame of capabilities, given its broad scope and plural intent, which seeks to accommodate a lot. However, in terms of politics and practice, often direct addressal of issue require concern, a relative lack of which in Sen's theories in terms of class (and also caste and gender) guides my critique of totalizing tendencies in Amartya Sen.

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Goal Orientation as a Predictor of Student Happiness in Senior Secondary School Level

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Abstract :

The present study explores the relationship between goal orientation and happiness among senior secondary school students in Kamrup Metropolitan District, Assam. Grounded in the belief that happiness and goal orientation are interlinked dimensions of psychological well-being, the study aims to assess levels of happiness and goal orientation, analyse differences across gender, type of institution and stream of study and determine the predictive power of goal orientation on happiness. For the present study, descriptive and correlational research design has been used. Data was collected from 620 students of class XII standard, selected through stratified random sampling from 16 schools (9 government and 7 private) from a total population of 2,586. Two standardized tools- Happiness scale (HS-RHMJ) and Goal Orientation scale (GOS-ES) were used, both demonstrating high reliability (0.80 and 0.78 respectively). For descriptive statistics mean, standard deviation, t -value and level of significance, r value and F -value have been calculated. The findings have revealed significant correlations between student's happiness and goal orientation dimensions. The study also seeks to identify demographic variations that may affect student's happiness levels. The study found out that a maximum portion of students experience moderate levels of happiness and goal orientation. It indicates the need of strengthening goal-oriented behaviour in educational platforms. The result will contribute to understanding adolescent psychological development and provide insights for educators and policymakers to foster positive learning environments that support both academic success and emotional well-being.

Keywords: Happiness, Goal Orientation, Senior Secondary Students, Well-being

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1. Introduction:

India holds the 126th position among 143 nations, with an average life satisfaction score of 4.389 out of 10 as stated in the 2024 World Happiness Report.

This low ranking reflects challenges such as high youth unemployment, academic pressure and limited access to mental health resources. Study conducted by Sapien lab (2013) found that youth aged 18-24 in India struggle more with mental health than older adults. Mental health and happiness are deeply interconnected, as a stable and positive mental state often fosters greater emotional well-being and happiness. Happiness represents the natural condition of the human mind and has always been the ultimate pursuit of every person throughout history (Singh, 2012). While happiness may resemble pleasure, the two are distinct, happiness arises internally, whereas pleasure is derived from external experiences. Veenhoven (2009) defines happiness as the overall positive assessment of one's life, which involves both cognitive judgments and emotional experiences, as also noted by Diener (1984). Recent studies indicate that individuals with high happiness levels tend to experience not only positive emotions but also enjoy better health and stronger social connections (Diener & Scollon, 2014). According to UNESCO, happiness in schools is not merely about pleasure but involves creating supportive learning environments that promote health and well-being for individuals, families and communities.

Happiness in individuals is often closely linked to goal orientation, as having clear, purposeful goals can foster motivation, self-esteem, and a sense of fulfilment. Goals are important part for human being to remain motivated. They guide young people's cognition and affect and instigate, direct and maintain their behaviour particularly as they become involved in academic work (Elliot & McGregor 2001; Kaplan & Maehr, 2007). Clear goals provide a sense of direction, which in turn facilitates purposeful planning and progress toward achievement (Schunk, Pintrich, & Meece, 2008). Senior secondary school is an important time in a student's life when they start making big decisions about their future. They face more pressure from studies and social life, and begin to shape their personal identity. Having clear goals helps students stay focused and work toward what they want. When students are happy, they are more likely to choose their own goals without feeling forced. The experiences and choices made at this level often shape their future educational paths, career goals, and life perspectives (Hurlock, 1980 & Santrock, 2018).

Recent studies have examined the complex link between happiness and goal orientation, beginning with Krasko et al. (2019, 2021), who conceptualized both as multidimensional constructs, showing that happiness-related strivings enhance well-being while concerns reduce it. Jowkar (2021) validated this among Iranian students, finding mastery goals positively and performance-avoidance goals negatively associated with happiness, while performance-approach goals had minimal effect. Ehrlich (2021) demonstrated that refining goal-striving motives such as pleasure,

altruism, fear, and necessity can significantly improve psychological functioning. Earlier works by Ricard (2014), Celik (2018), Tan et al. (2020), and Samkan & Talebzadeh (2011) explored happiness in relation to health, motivation, and well-being. In India, Devvrt (2023) and Sonkar (2023) highlighted academic, psychological, and cultural factors, with Happiness Modules improving student outcomes. In Northeast India, Das & Basumatary (2022) and Buragohain & Hazarika (2015) linked happiness to school type and teacher job satisfaction. Impact of goal orientation on motivation, relationships, and academic achievement has been studied internationally by Roebken (2007) and Teruel (2023), and in India by Sharma (2021) and Kavitha (2022). Despite these insights, research gaps remain in cross-cultural validation of happiness frameworks, level of students, methodical approach etc. Studies have hardly been observed throwing lights on relation between goal orientation and happiness of the school going students of Assam specifically at senior secondary level.

Review of literature

Kumar and Sahoo (2024) in their study found that most senior secondary students exhibited an average level of happiness, with female students reporting higher happiness than males. Although happiness showed a positive relationship with academic achievement, this correlation was not statistically significant. Sharma (2021) found that grit, goal orientation, and orientation to happiness play an important role in shaping the well-being of senior secondary school students. Using a descriptive research design, the study added to existing literature by demonstrating that these psychological factors significantly influence students' overall well-being. Krasko and Schweitzer and Luhmann (2020) conducted a study on happiness goal orientation and their associations with wellbeing. The study stated that research on valuing and pursuing happiness has shown mixed results, but these inconsistencies can be clarified by viewing Happiness Goal Orientations (HGO) as multidimensional. The newly developed HGO Scale identifies two dimensions- Happiness-Related Strivings, which involve active pursuit of happiness and relate to higher well-being, and Happiness-Related Concerns, which involve worry about losing happiness and relate to lower well-being. These contrasting patterns show that pursuing happiness can either enhance or undermine well-being depending on the type of orientation involved. Vyas and Prajapati (2020) in their study revealed significant differences in happiness levels based on gender and education level, with boys reporting higher happiness than girls and graduation-level students showing greater happiness than post-graduation students. However, no significant interaction effect was found between gender and level of education on happiness. Nasa (2015) found that while male and female secondary school students do not differ significantly in their goal orientation, urban

students show a significantly stronger goal-oriented approach than rural students. The study also examined how goal orientation relates to academic self-efficacy, help-seeking behaviour, and achievement using descriptive methods, regression analysis, and SEM. Overall, the key result highlights the urban- rural difference in goal orientation. Hasnain, Wazid and Hasan (2014) in their study found that Optimism, Hope, and Happiness together significantly predicted Psychological Well-Being among young adult Assamese males and females, with Hope contributing most for males and Happiness contributing most for females. It also revealed that females scored higher in overall well-being while males scored higher in happiness, with no significant gender differences in Optimism and Hope.

Various studies have been found on happiness and goal orientation in international and national level, but very few studies have been found using both the variables. There are very limited studies performed on happiness at and goal orientation at regional level. Studies on happiness and goal orientation taking different demographic variables- gender, type of institution and stream of study are also limited in nature. Hence, the present study has significance.

2. Research Question

In the light of the above discussion, questions raise, (i) Is there any significant differences exist in levels of goal orientation and happiness across gender, type of institution (government vs. private) and stream of study (Arts vs. Science) of the students? (ii) Is there any relationship between happiness and goal orientation of the secondary school students? (iii) Do goal orientation of the students leads to overall happiness of the students?

Keeping in view the above context and the research question, the statement of this problem of study is stated as-

"Goal Orientation as a Predictor of Student Happiness in Senior Secondary School Level"

3. Objectives of the Study

The study aims to investigate whether levels of goal orientation and happiness of the secondary school students differ across gender, type of institution (government versus private), and stream of study (Arts versus Science). It further attempted to examine the relationship between goal orientation and happiness, and to determine whether goal orientation of the students significantly contributes to their overall happiness

4. Significance of the Study

The United Nations General Assembly recognizes happiness as a vital part of development and promotes a more inclusive and balanced model of economic progress that prioritizes the well-being of individuals. For students, happiness plays a crucial role as they navigate academic pressure, mental health challenges, cyberbullying, and socio-economic differences. It is believed that happier students are better equipped to make career decisions and solve personal problems. This study aims to assess the level of happiness among higher secondary school students and explore its connection with goal orientation. The findings are expected to help students build confidence in their abilities and support efforts to foster happiness among youth.

Goal orientation is essential for students as it provides a clear direction toward achieving their aspirations. It helps them plan their careers and work systematically toward future success. By examining differences in happiness and goal orientation across demographic and academic factors such as gender, type of school, and stream of study, the study seeks to identify groups that may require additional support. The higher secondary stage marks a critical period in a student's life, coinciding with adolescence, a time of significant cognitive, emotional, and social development. Decisions made during this phase can shape their future, making it important to understand their well-being.

Kamrup Metropolitan District, with Guwahati at its centre, offers a rich and diverse environment ideal for studying adolescent happiness. Its cultural and socio-economic variety, along with a growing youth population, makes it a valuable setting for research on student development. Insights from this region can inform policies and practices aimed at enhancing the well-being and success of higher secondary or senior secondary school students.

5. Method of the Study

This descriptive and correlational study investigates the relationship between happiness (dependent variable) and goal orientation (independent variable) among Class XII students under the Assam State School Education Board (ASSEB) in Guwahati city, Kamrup (M) district. It also explores demographic factors such as gender, type of institution, and stream of study. Using stratified random sampling, 620 students were selected from 16 schools (9 government, 7 private), following Taro Yemem's formula from total student population of 2,586. The sample includes 280 boys and 340 girls, with 392 from government and 228 from private schools,

and 475 Arts and 145 Science students. Data were collected using an Information Data Sheet, and adapted versions of the Happiness Scale (HS-RHMJ) by Rastogi & Moorjani (2017), and the Goal Orientation Scale (GOS-ES) by Sreekala E. (2013), with reliability scores of 0.80 and 0.78 respectively. The tools have been adapted as per context of the study following expert's opinion using test-retest method.

Result of the study

Happiness of Senior Secondary School Students

Happiness	Level	Range	No. of Students	Percentage
	Extremely High	298& above	11	1.77%
	High	260-297	168	27.09%
	Average	233-259	272	43.87%
	Low	193-232	148	23.87%
	Extremely Low	162-192	21	3.38%
Total			620	100%

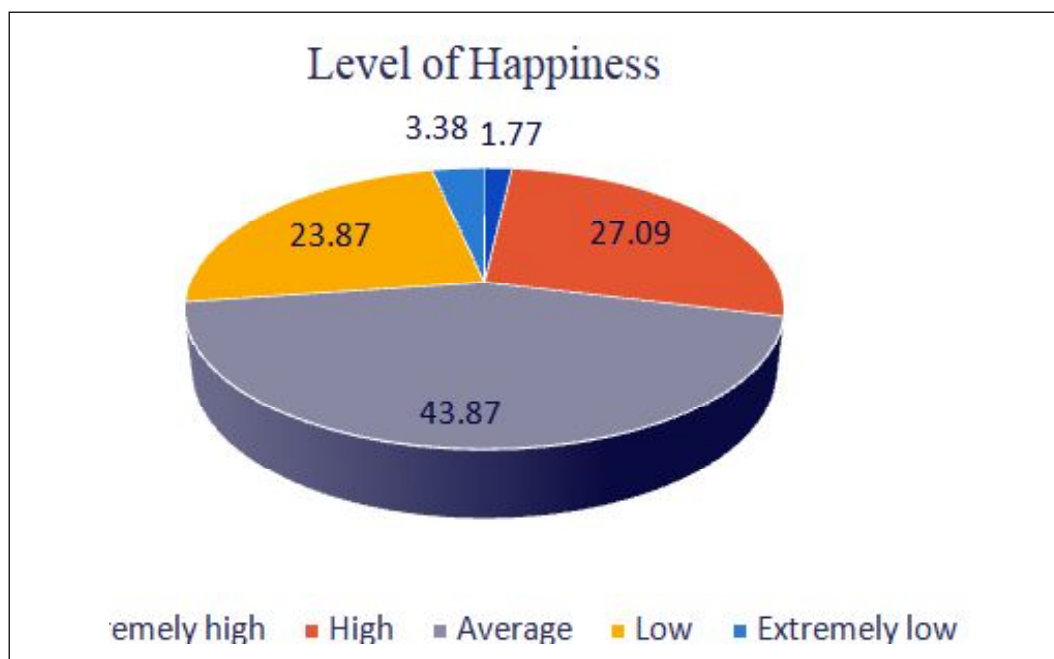


Fig 1: Pie diagram showing happiness level of senior secondary school students

Table 2: Mean, Median, Standard Deviation, Skewness and Kurtosis on the Happiness of the Senior Secondary School Students (N=620)

Variable	Mean	Median	SD	Skewness	Kurtosis
Happiness	245.84	247.00	26.37	-.385	.388

Table 3: N, Means, SDs and 't' Values of Boys and Girls Senior Secondary School Students on Happiness(N=620)

Variable		N	M	SD	df	t	Level of Significance
Gender	Boys	280	243.10	28.35	618	2.357	0.05
	Girls	340	248.09	24.44			

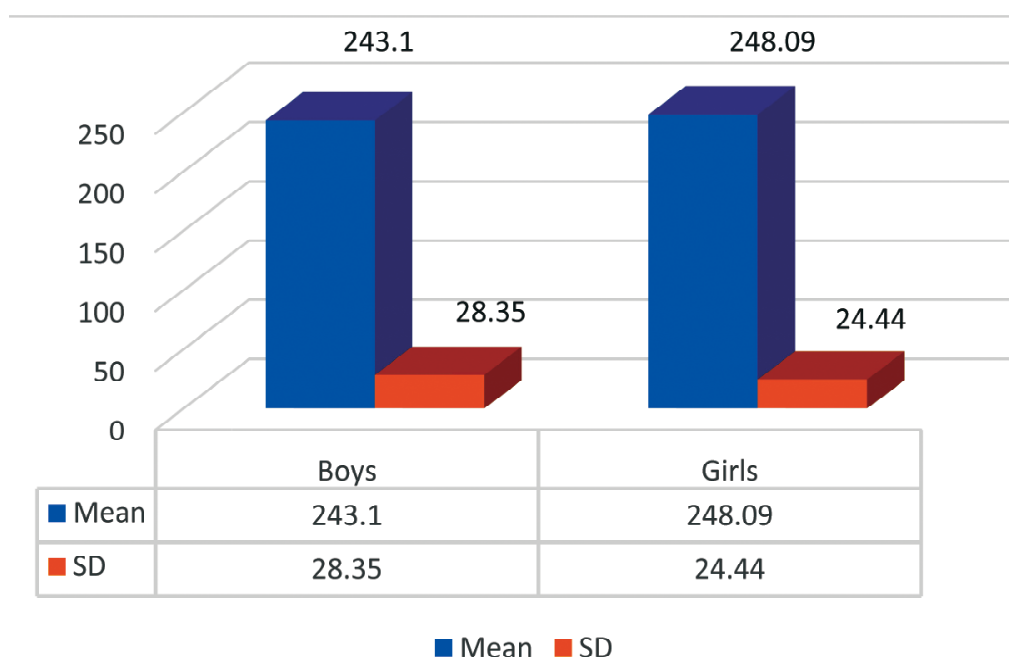


Fig 2: Graphical presentation of Mean score of Boys and Girl students on Happiness

Table 4: Means, SDs and 't' values of boy and girl senior secondary school students on each dimension of happiness
N=620

Sl. No.	Dimensions	Gender	N	Mean	SD	t-value	Level of Significance
1	Career Well-being	Boy	280	57.13	6.29	.324	NS
		Girl	340	57.28	5.79		
2	Subjective Well-being	Boy	280	54.59	8.69	1.77	NS
		Girl	340	55.73	7.22		
3	Social Well-being	Boy	280	42.35	6.95	5.47	0.01
		Girl	340	44.98	4.99		
4	Spiritual Well-being	Boy	280	42.04	6.34	1.41	NS
		Girl	340	42.69	5.29		
5	Emotional Well-being	Boy	280	47.00	6.43	.828	NS
		Girl	340	47.42	6.09		

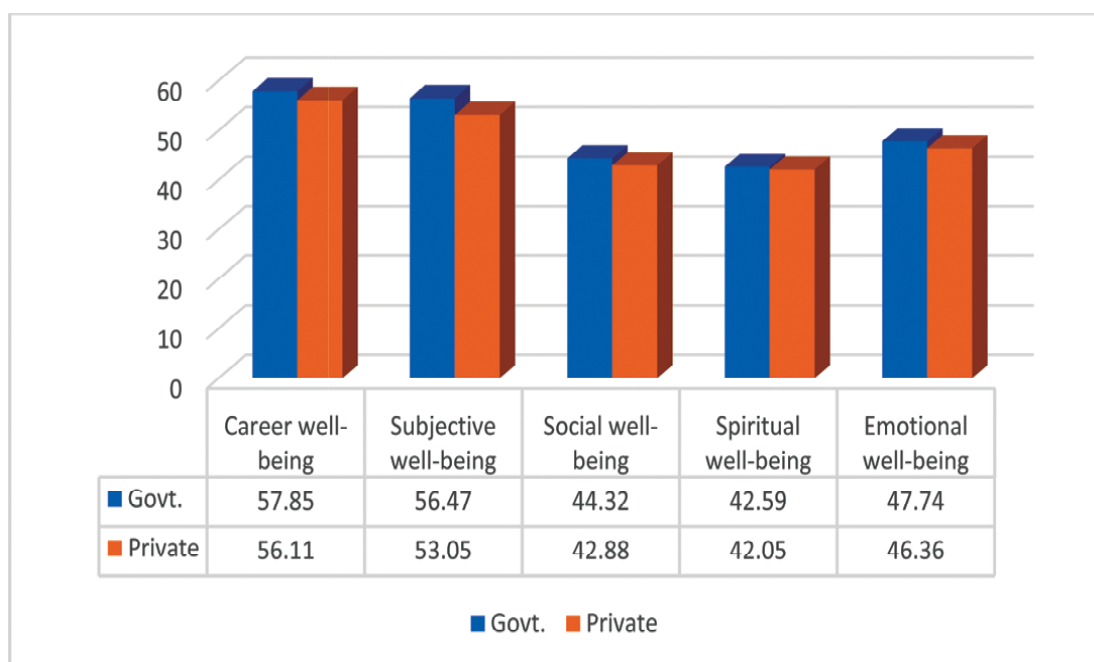


Fig 3: Graphical representation of mean score of boy and girl senior secondary school students in five dimensions of happiness

Table 5: N, Means, SDs and 't' Value of Govt. and Private Senior Secondary School Students on Happiness (N=620)

Variable		N	M	SD	df	t	Level of Significance
Stream	Arts	475	246.24	26.99	618	.690	NS
	Science	145	244.52	24.23			

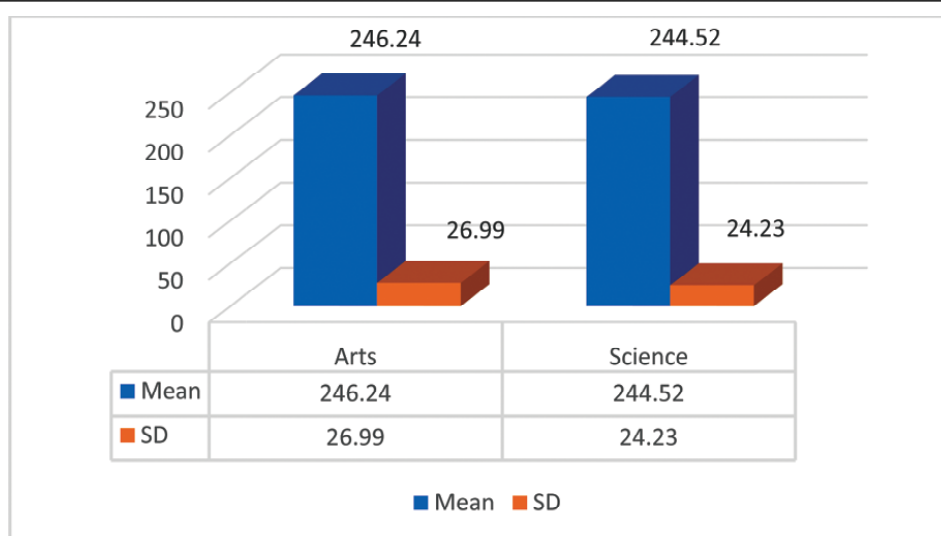


Fig 4: Graphical presentation of Mean score of Govt. and Private students on Happiness

Table Means, and ‘t’ of govt. private	Sl. No.	Dimensions	Type of Institution	N	Mean	SD	t-value	Level of Significance	6: SDs values and senior
	1	Career Well-being	Govt.	392	57.85	5.79	3.51	0.01	
			Private	228	56.11	6.25			
	2	Subjective Well-being	Govt.	392	56.47	7.02	5.28	0.01	
			Private	228	53.05	8.89			
	3	Social Well-being	Govt.	392	44.32	5.51	2.86	0.01	
			Private	228	42.88	6.90			
	4	Spiritual Well-being	Govt.	392	42.59	5.64	1.14	NS	
			Private	228	42.05	6.03			
	5	Emotional Well-being	Govt.	392	47.74	6.20	2.67	0.01	
			Private	228	46.36	6.23			

Table 6: Means, SDs and 't' values of govt. and private senior secondary school students on each dimension of happiness

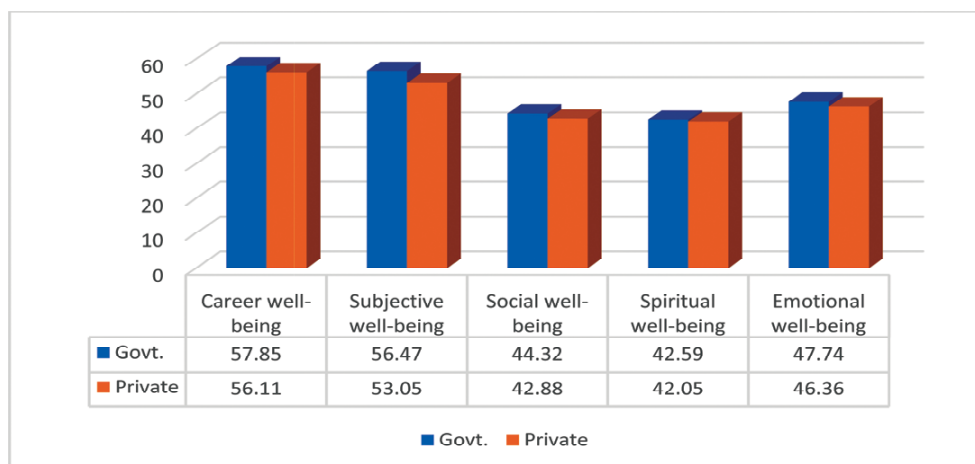


Fig 5: Graphical representation of mean score of govt. and private senior secondary school students in five dimensions of happiness

Table 7: N, Means, SDs and 't' Value of Arts and Science Stream Senior Secondary School Students on

Happiness (N=620)

Variable		N	M	SD	df	t	Level of Significance
Stream	Arts	475	246.24	26.99	618	.690	NS
	Science	145	244.52	24.23			

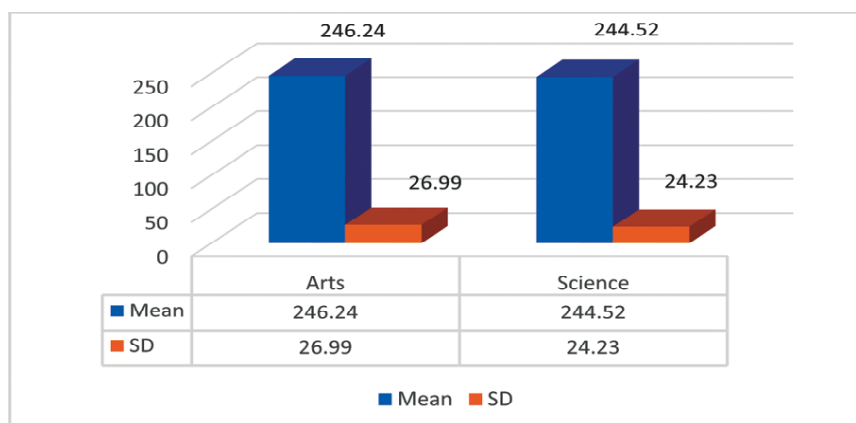


Fig 6: Graphical presentation of Mean score of Arts and Science stream students on Happiness

Table 8: Means, SDs and 't' values of arts and sciencesenior secondary schoolstudents on each dimension of happiness N=620

Sl. No.	Dimensions	Stream	N	Mean	SD	t-value	Level of Significance
1	Career Well-being	Arts	475	57.41	5.88	1.493	NS
		Science	145	56.56	6.43		
2	Subjective Well-being	Arts	475	55.38	8.09	.934	NS
		Science	145	54.68	7.36		
3	Social Well-being	Arts	475	43.81	6.18	.130	NS
		Science	145	43.73	5.83		
4	Spiritual Well-being	Arts	475	42.42	5.85	.172	NS
		Science	145	42.32	5.60		
5	Emotional Well-being	Arts	475	47.23	6.28	.003	NS
		Science	145	47.23	6.16		

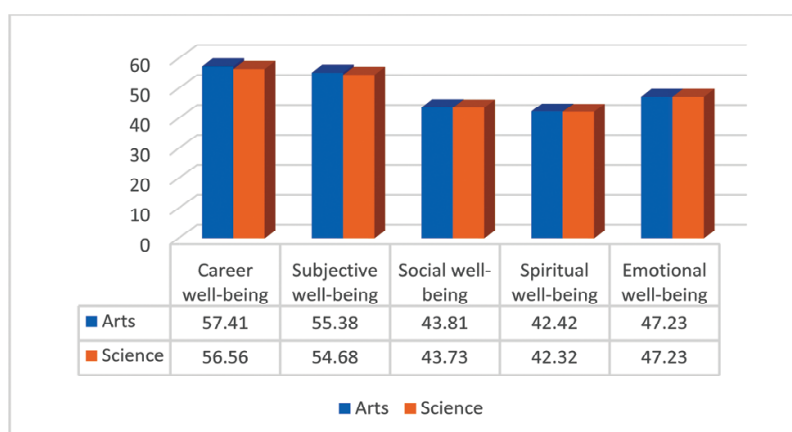


Fig 7: Graphical representation of mean score of arts and science senior secondary school students in five dimensions of happiness

Goal Orientation of Senior Secondary School Students

Table 9: Level of Goal Orientation of Senior Secondary School Students

Goal Orientation	Level	Range	No. of Students	Percentage
	Extremely High	207& above	11	2.1%
	High	179-206	170	27.4%
	Average	160-178	271	42.1%
	Low	130-159	147	25.1%
	Extremely Low	86-129	21	3.1%
Total			620	100%

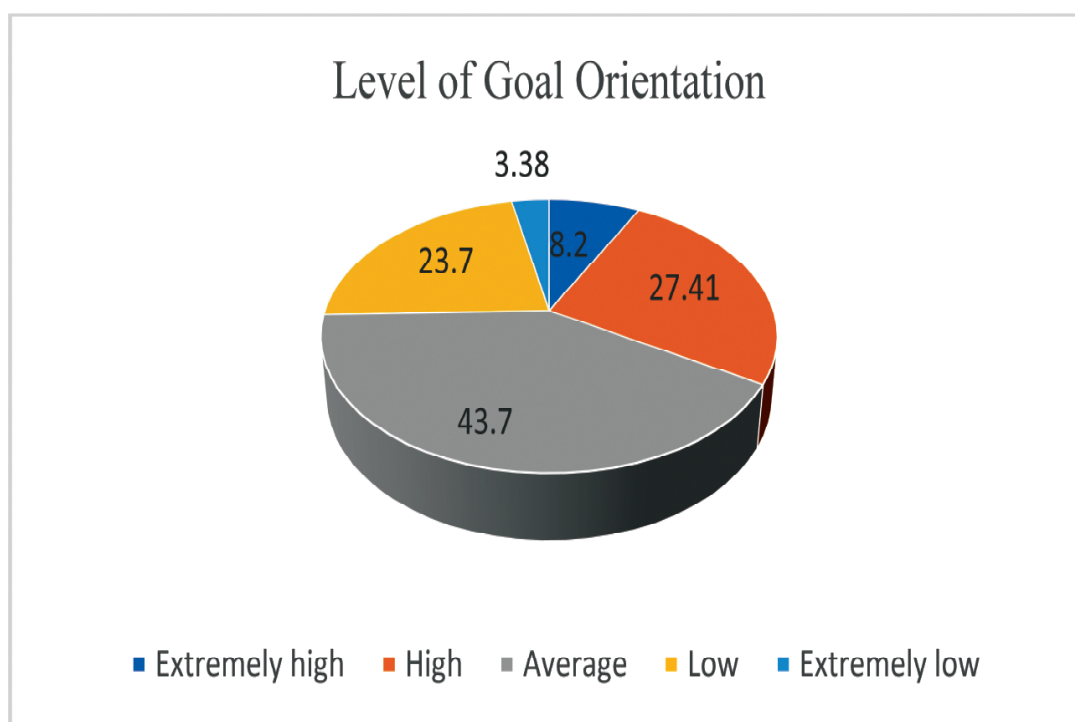


Fig 8: Pie diagram showing the percentage of respondents falling under each level of Goal Orientation

Table 10: Mean, Median, Standard Deviation, Skewness and Kurtosis for the Goal Orientation of the Senior Secondary School Students (N=620)

Variable	Mean	Median	SD	Skewness	Kurtosis
Goal Orientation	168.967	169.000	18.916	-.478	1.100

Table 11: N, Means, SDs and 't' Values of Boys and Girls Senior Secondary School Students on Goal Orientation

Variable		N	M	SD	df	t	Level of Significance
Gender	Boys	280	166.49	20.39	618	2.98	0.01
	Girls	340	171.01	17.37			

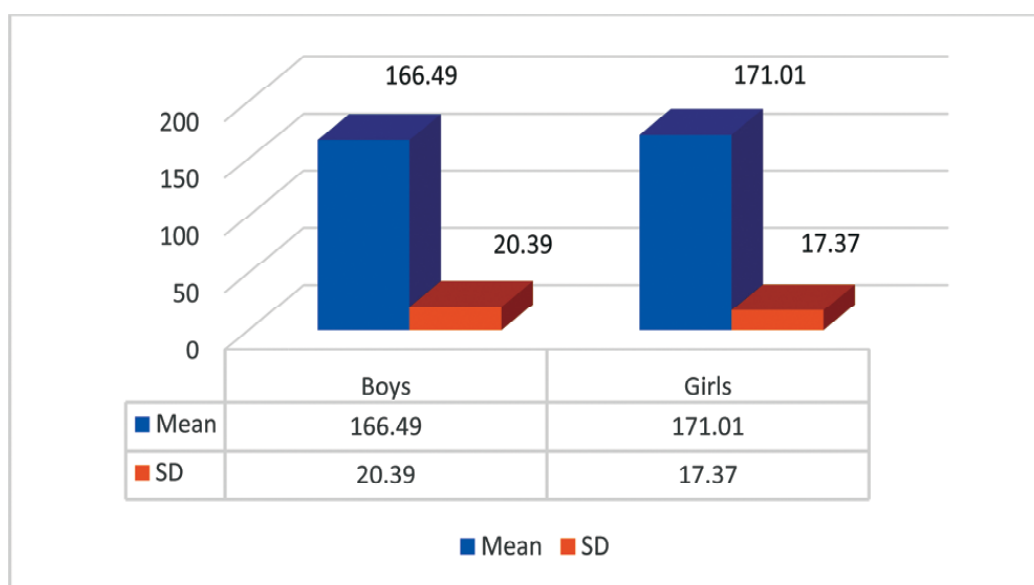


Fig 9: Graphical presentation of Mean score of Boys and Girl students on Goal Orientation

Table 12: Means, SDs and 't' values of boy and girls senior secondary school students on each dimension of goal orientation

Sl. No.	Dimensions	Gender	N	Mean	SD	t-value	Level of Significance
1	Focus on Learning	Boy	280	19.72	3.52	3.26	0.01
		Girl	340	20.53	2.67		
2	Mastery of Task	Boy	280	19.84	3.38	2.77	0.01
		Girl	340	20.50	2.56		
3	Developing Skill	Boy	280	16.01	2.54	2.93	0.01
		Girl	340	16.56	2.09		
4	Improving Competency	Boy	280	16.29	2.21	1.85	NS
		Girl	340	16.61	2.14		
5	Task Accomplishment	Boy	280	21.36	2.59	.283	NS
		Girl	340	21.30	2.47		
6	Gaining Insight	Boy	280	20.39	2.89	2.59	0.01
		Girl	340	20.96	2.57		
7	Relative Ability	Boy	280	15.21	2.93	4.57	0.01
		Girl	340	16.25	2.70		
8	Extrinsic Goal Orientation	Boy	280	21.18	4.42	2.33	0.05
		Girl	340	21.98	4.06		
9	Work Avoidance	Boy	280	16.49	3.62	.539	NS
		Girl	340	16.33	3.69		

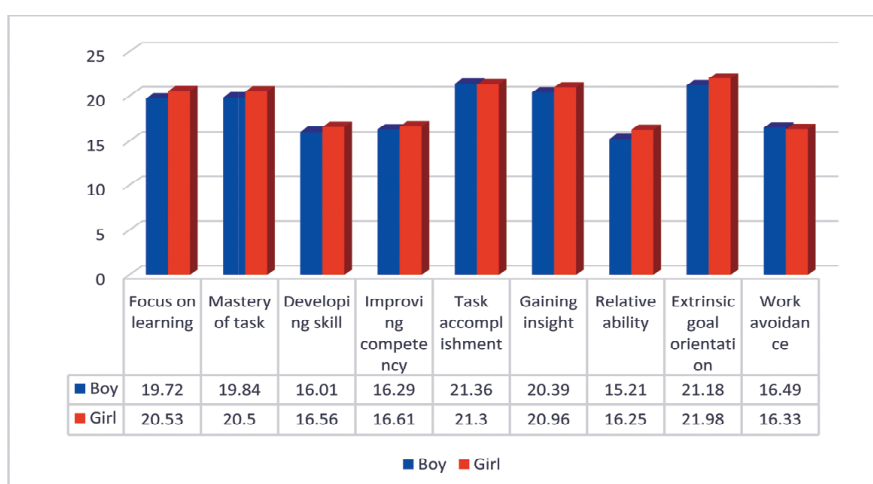


Fig 10: Graphical representation of mean score of boy and girls senior secondary school students in five dimensions of goal orientation

Table 13: N, Means, SDs and 't' Values of Govt. and Private Senior Secondary School Students on Goal Orientation

Variable		N	M	SD	df	t	Level of Significance
Institute	Govt.	392	172.74	17.74	618	6.75	0.01
	Private	228	162.48	19.15			

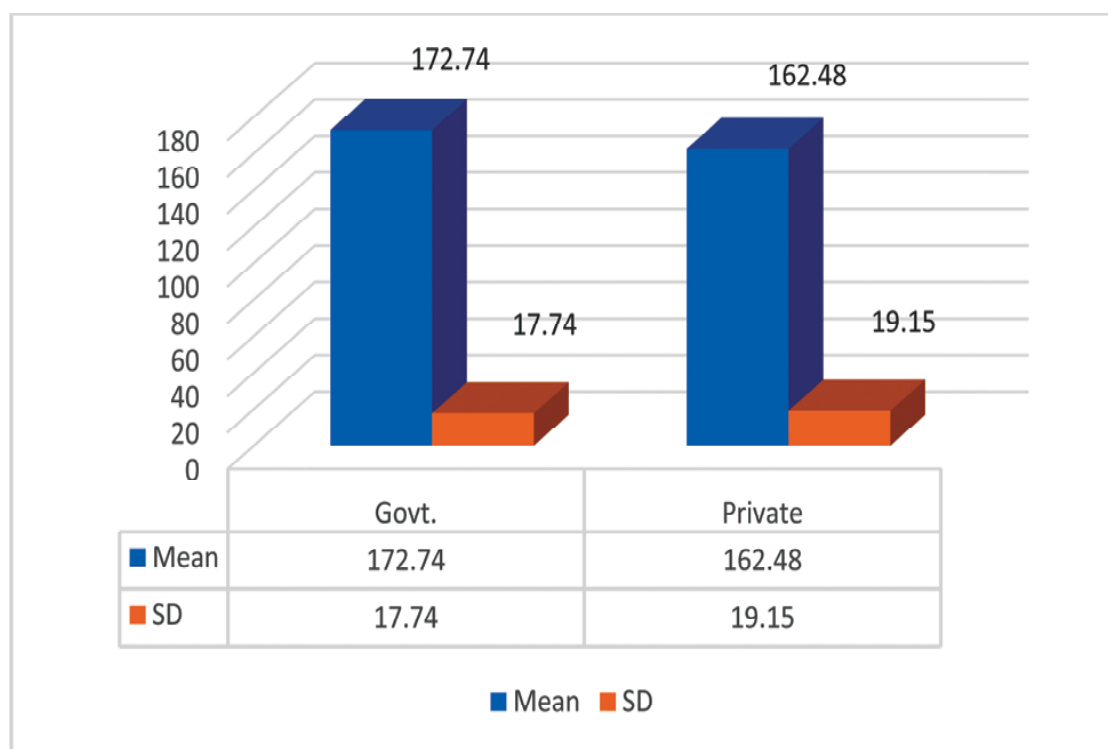


Fig 11: Graphical presentation of Mean score of Govt. and Private students on Goal Orientation

Table 14 : Means, SDs and 't' values of govt. and private senior secondary school students on each dimension of goal orientation

Sl. No.	Dimensions	Type of Institution	N	Mean	SD	t-value	Level of Significance
1	Focus on Learning	Govt.	392	20.63	2.70	4.99	0.01
		Private	228	19.36	3.58		
2	Mastery of Task	Govt.	392	20.77	2.56	6.36	0.01
		Private	228	19.24	3.35		
3	Developing Skill	Govt.	392	16.53	2.17	3.17	0.01
		Private	228	15.93	2.51		
4	Improving Competency	Govt.	392	16.63	2.12	2.48	0.05
		Private	228	16.18	2.26		
5	Task Accomplishment	Govt.	392	21.36	2.45	.363	NS
		Private	228	21.28	2.66		
6	Gaining Insight	Govt.	392	20.96	2.64	3.17	0.01
		Private	228	20.25	2.84		
7	Relative Ability	Govt.	392	16.29	2.41	6.01	0.01
		Private	228	14.89	3.32		
8	Extrinsic Goal Orientation	Govt.	392	22.46	4.08	6.68	0.01
		Private	228	20.18	4.13		
9	Work Avoidance	Govt.	392	17.11	3.64	6.61	0.01
		Private	228	15.17	3.36		

Table 15: N, Means, SDs and 't' Values of Arts and Science Stream Senior Secondary School Students on Goal Orientation

Variable		N	M	SD	df	t	Level of Significance
Stream	Arts	475	170.24	19.09	618	3.041	0.01
	Science	145	164.81	17.76			

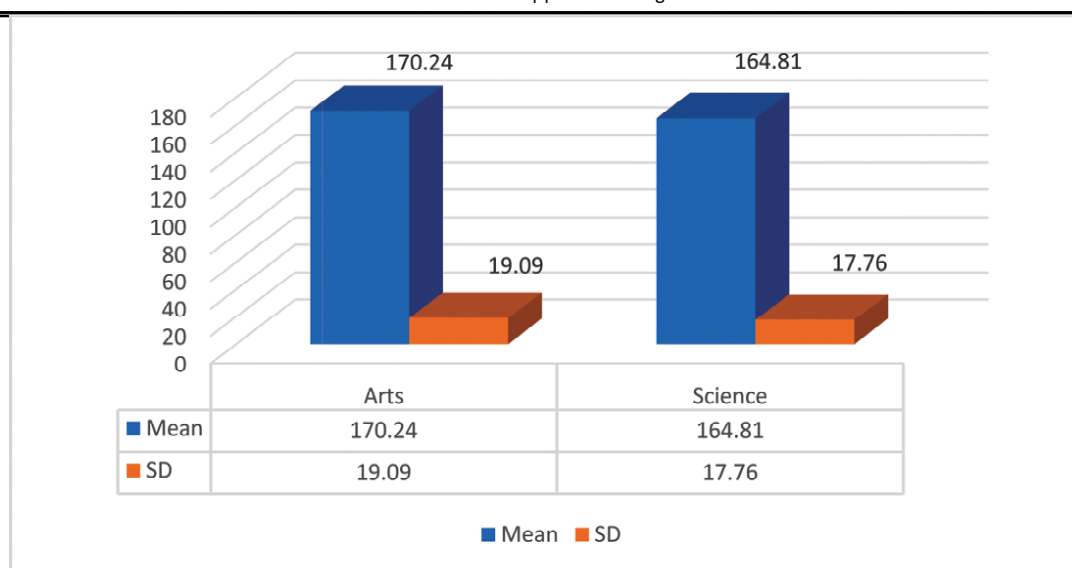


Fig 13: Graphical presentation of Mean score of Arts and Science students on Goal Orientation

Table 16: Means, SDs and 't' values of arts and sciencesenior secondary school students on each dimension of goal orientation

Sl. No.	Dimensions	Stream	N	Mean	SD	t-value	Level of Significance
1	Focus on Learning	Arts	475	20.37	3.12	2.97	0.01
		Science	145	19.49	3.01		
2	Mastery of Task	Arts	475	20.44	2.90	3.64	0.01
		Science	145	19.42	3.05		
3	Developing Skill	Arts	475	16.40	2.28	1.88	NS
		Science	145	15.99	2.43		
4	Improving Competency	Arts	475	16.54	2.16	1.47	NS
		Science	145	16.23	2.22		
5	Task Accomplishment	Arts	475	21.29	2.56	.724	NS
		Science	145	21.47	2.43		
6	Gaining Insight	Arts	475	20.78	2.78	1.22	NS
		Science	145	20.46	2.60		
7	Relative ability	Arts	475	15.87	2.89	1.36	NS
		Science	145	15.49	2.74		
8	Extrinsic Goal Orientation	Arts	475	21.80	4.29	1.94	NS
		Science	145	21.02	4.05		

9	Work Avoidance	Arts	475	16.76	3.60	4.47	0.01
		Science	145	15.23	3.59		

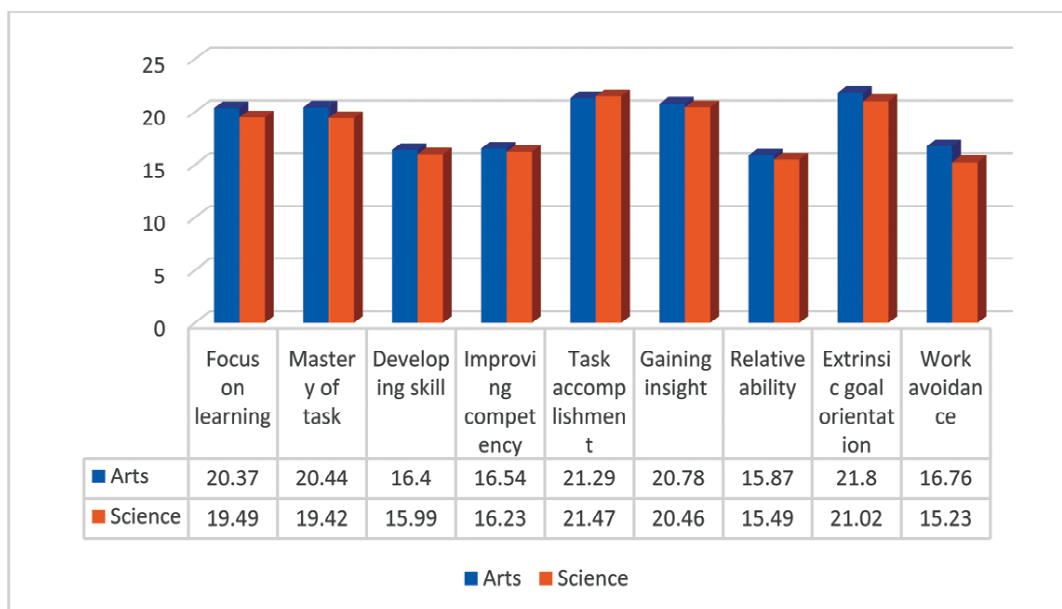


Fig 14: Graphical representation of mean score of arts and sciencesenior secondary school students in five dimensions of goal orientation

Relationship between Happiness and Goal orientation

Table 17: Coefficient of Correlation Between Happiness and Goal Orientation

Variable	N	df	Pearson 'r' value	Sign	Level of significance
Happiness	620	618	.699	‘+’	0.01
Goal Orientation	620				

Goal Orientation as Predictors of Overall Happiness

Table 18: Linear Regression Summary: Goal Orientation Predicting Happiness

Variables	R Value	R ² Value	Adjusted R ²	Standard Error	F-Statistic	Significance (p-value)
Independent Goal Orientation	0.702	0.492	0.491	18.82	299.085	0.000 (Highly significant)
Dependent Happiness						

Coefficients: Impact of Goal Orientation

Variable	Unstandardized Coefficient (B)	Standardized Beta	t-value	p-value	VIF	Tolerance
Goal Orientation	1.028	0.737	21.802	0.000	1.389	0.720

Discussion

Table no.1 and figure no.1 shows among 620 higher secondary school students, the majority (43.87%) exhibit an average level of happiness, followed by 27.09% with high happiness, 23.87% with low happiness, 3.38% with extremely low happiness, and only 1.77% with extremely high happiness. This result contradicts with Kumar and Sahoo (2014), as in their study majority of the students fall under greater level of happiness which is more than average level of happiness.

Table 2 represent the mean, median and standard deviation for Happiness of senior secondary school students were found to be 245.84, 247.00 and 26.37 respectively. Also, skewness and kurtosis are found to be -.385 and .388 respectively. A perusal of the table indicates that the distribution of the Happiness score is slightly negatively skewed, which may be negligible and that could have occurred due to sampling fluctuation or chance factor.

Table 3 and figure 2 shows a significant difference in happiness between boys (M = 243.1, SD = 28.35) and girls (M = 248.09, SD = 24.44), with a t-value of 2.357 (df = 618, p < .05). The result is in agreement with Kumar and Sahoo (2024) in

their study also it was found that there is significant difference at 0.01 level in the means of male and female senior secondary school students on their happiness. The result of present study is in agreement with the study of Hasnain, Wazid and Hasan (2014) which revealed that females scored higher in overall well-being while males scored higher in happiness. The result of the study done by Vyas and Prajapati (2020) revealed significant differences in happiness levels based on gender which agree the result of the present study. The study done by Vyas and Prajapati found boys reporting higher happiness than girls and it contradicts with the result of the present study.

Table 4 and figure 3, revealed that there were no significant gender differences in Career, Subjective, Spiritual, and Emotional Well-being among higher secondary school students, as boys and girls scored similarly across these dimensions. However, a notable exception was found in Social Well-being, where girls scored significantly higher than boys, indicating stronger social connections or support systems. This suggests that while overall happiness levels are comparable between genders in most areas, girls may experience greater social integration and interpersonal satisfaction, possibly due to cultural, developmental, or communicative factors that enhance their social experiences during adolescence.

Table 5 and figure 4 reveals that government school students ($M = 248.98$, $SD = 25.26$) reported significantly higher happiness than private school students ($M = 240.45$, $SD = 27.40$), with a t -value of 3.93 ($df = 618$, $p < .01$). The result of the study contradicts with the result of the study of Kumar and Sahoo (2024), which shows no difference in the happiness between government and private senior secondary school students.

Table 6 and figure 5 show that the study comparing happiness dimensions between government and private senior secondary school students found significant differences in Career, Subjective, Social, and Emotional Well-being, with government students consistently scoring higher. However, no significant difference was observed in Spiritual Well-being, indicating the acceptance of the null hypothesis for that dimension. Overall, the findings suggest that government school students experience greater well-being across most domains compared to their private school counterparts.

Table 7 and figure 6 shows that arts stream students ($M = 246.24$, $SD = 26.99$) and Science stream students ($M = 244.52$, $SD = 24.23$) showed no significant difference in happiness ($t = 0.690$, $df = 618$, $p > .05$), leading to acceptance of the null hypothesis.

Table 8 and figure 7 depict that the study comparing happiness across arts and science senior secondary school students found no significant differences in any of the five dimensions- Career, Subjective, Social, Spiritual, and Emotional Well-being. The mean scores were closely aligned, with Career Well-being at 57.41 for arts and 56.56 for science students, Subjective Well-being at 55.38 and 54.68 respectively, and identical scores of 47.23 in Emotional Well-being. These results suggest that stream of study does not influence the happiness level of the students, indicating that both arts and science students experience similar emotional, social, and psychological well-being during this critical phase of adolescence. This insight can help educators and policymakers focus on universal strategies to support student happiness, regardless of academic stream.

Table 9 and figure 8 shows the level of goal orientation among higher secondary school students. Among 620 higher secondary students, the majority (43.70%) exhibit an average level of goal orientation, followed by 27.41% with high, 23.70% with low, 3.38% with extremely low, and 1.77% with extremely high goal orientation. This result is in agreement with the results of Dixit (2012); Sophia and Sreelatha (2014) and Sreekala (2019), which indicated that majority of high.

Table 10 reveals the level of goal orientation computed with Mean, Median and SD. Among 620 higher secondary students, the majority (43.70%) exhibit an average level of goal orientation, followed by 27.41% with high, 23.70% with low, 3.38% with extremely low, and 1.77% with extremely high goal orientation.

From table 11 and figure 9 it has been found that the mean and standard deviation of boy students are 166.49 and 20.39 respectively and the mean and standard deviation of girl students are 171.01 and 17.37 respectively. The t-value with df 618 is found to be 2.98 which is greater than critical value at 0.01 level. It shows that there is significant difference between boys and girl students in terms of goal orientation.

Table 12 and figure 10 depict that goal orientation among boy and girl senior secondary school students across nine dimensions. It found significant differences in six areas such as, girls scored higher than boys in Focus on Learning (20.53 vs. 19.72), Mastery of Task (20.50 vs. 19.84), Developing Skill (16.56 vs. 16.01), Gaining Insight (20.96 vs. 20.39), Relative Ability (16.25 vs. 15.21), and Extrinsic Goal Orientation (21.98 vs. 21.18). These differences were statistically significant, meaning girls showed stronger goal-oriented behaviours in these areas. However, in Improving Competency (16.61 vs. 16.29), Task Accomplishment (21.30 vs. 21.36), and Work Avoidance (16.33 vs. 16.49), the differences were not significant, suggesting boys and girls performed similarly in these dimensions. Overall, the results show that girls

tend to be more focused and motivated in several aspects of goal orientation, while both genders are equally competent in completing tasks and avoiding work. This insight can help teachers and counsellors tailor support strategies to encourage balanced goal-setting habits among all students.

The table 13 and figure 11 it has been found that the mean and standard deviation of goal orientation of govt. senior secondary school students are 172.74 and 17.74 respectively and the mean and standard deviation of private students are 162.48 and 19.15 respectively. The t-value is found to be 6.75 with df 618, which is greater than critical value at 0.01 level. It shows that there is significant difference between govt. and private students in terms of goal orientation.

The above table 14 and figure 12 reveal goal orientation between government and private senior secondary school students found significant differences in eight out of nine dimensions, with government students consistently scoring higher. These included areas such as Focus on Learning, Mastery of Task, Developing Skill, and Extrinsic Goal Orientation, indicating stronger motivation, academic engagement, and confidence among government school students. Only Task Accomplishment showed no significant difference, leading to the rejection of the null hypothesis for the eight dimensions and acceptance for one. The results suggest that government school environments may better foster goal-directed behaviours, and highlight the need for targeted strategies in private schools to enhance the academic motivation and performance of the students.

From the above table 15 and figure 13 it has been found that the mean and standard deviation of arts stream senior secondary school students are 170.24 and 19.09 respectively and the mean and standard deviation of science stream students are 164.81 and 17.76 respectively. The t-value is found to be 3.041 with df 618, which is significant at 0.01 level. It shows that there is significant difference between arts and science stream students in terms of goal orientation. Hence, null hypothesis has been rejected.

Table 16 and figure 14 show goal orientation across 9 dimensions between arts and science senior secondary students, revealing significant differences in 3 areas: arts students scored higher in Focus on Learning ($M = 20.37$, $SD = 3.12$) than science students ($M = 19.49$, $SD = 3.01$), $t = 2.97$; in Mastery of Task ($M = 20.44$, $SD = 2.90$ vs. $M = 19.42$, $SD = 3.05$), $t = 3.64$; and in Work Avoidance ($M = 16.76$, $SD = 3.60$ vs. $M = 15.23$, $SD = 3.59$), $t = 4.47$ - all statistically significant at the 0.01 level. These findings suggest arts students are more mastery-driven and focused but also more prone to avoiding effortful tasks. No significant differences were found in the remaining 6 dimensions-Developing Skill, Improving Competency, Task

Accomplishment, Gaining Insight, Relative Ability, and Extrinsic Goal Orientation- with t-values ranging from 0.724 to 1.94, indicating similar motivational traits.

The table 17 found a computed correlation coefficient of 0.699 between happiness and goal orientation among senior secondary school students, which is significantly higher than the table value of 0.098 at the 0.01 level with 618 degrees of freedom. This indicates a significant positive relationship, meaning that as students goal orientation increases, their happiness tends to increase as well.

From the table 18, it is observed that Goal orientation significantly predicts happiness, with each unit increase in goal orientation leading to a 1.028 unit rise in happiness. Its high standardized beta value (0.737) highlights its dominant influence on student happiness, and the absence of multicollinearity ($VIF < 2$) confirms its reliable contribution to the regression model.

The study is in agreement with the study of Kumar and Sahoo (2024) that majority of the students observe average level of happiness.

Implications, Suggestions and Conclusion

The study highlights that a large proportion of senior secondary students experience only moderate levels of happiness (43.87%) and goal orientation (42.1%), suggesting a critical need to strengthen goal-directed behavior in educational settings. Notably, students with higher goal orientation-those who set clear academic targets, persist through challenges, and strive for mastery-tend to report greater happiness. This connection underscores that goal orientation is not just about academic success, it is a key driver of emotional well-being. When students feel purposeful and capable of achieving their goals, they experience a sense of fulfillment, confidence, and resilience, all of which contribute to overall happiness.

Moreover, the study found that girls, government school students, and arts stream students generally scored higher in both happiness and goal orientation, indicating that supportive environments and self-driven learning may play a role. Since goal orientation emerged as a strong and reliable predictor of happiness, schools should actively cultivate it through personalized learning plans, mentorship, and activities that encourage self-reflection and perseverance. By helping students develop a clear sense of direction and intrinsic motivation, educators can foster not only academic achievement but also emotional stability and life satisfaction. In short, nurturing goal orientation is a powerful lever for enhancing student happiness and shaping well-rounded, resilient individuals.

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Sustainability Challenges and Opportunities in Tripura's Handloom and Handicraft Industry: A Review

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Abstract

The handloom and handicraft sector in Tripura, a northeastern state of India, is integral to the region's cultural identity and rural economy. This review-based study examines the sustainability challenges and opportunities within this traditional industry. Drawing on literature, government reports, and empirical insights, the study identifies critical obstacles such as limited market access, inadequate infrastructure, raw material scarcity, declining interest among younger generations, socio-economic constraints, and minimal policy and technological support. These challenges have constrained the sector's growth and resilience amid globalizations. Despite these limitations, the industry offers significant potential for sustainable development. Increasing demand for eco-friendly and ethically produced goods, alongside digital platforms, presents avenues for market expansion and greater visibility. Strategies such as skill development, design innovation, sustainable sourcing of raw materials, cluster-based development, and public-private partnerships are highlighted as essential for revitalization. The study advocates a holistic approach integrating environmental, economic, and social dimensions of sustainability. Policy recommendations focus on improving infrastructure, enhancing artisans' access to credit and training, and promoting Tripura's crafts nationally and internationally. By addressing these aspects, the study provides a foundation for future research and policy formulation aimed at preserving Tripura's rich artisanal heritage while fostering socio-economic development among its artisan communities.

Keywords: Sustainability, Handloom and Handicraft, Tripura, Rural Economy, Artisan Development.

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1. Introduction:

Tripura, a small yet culturally vibrant state in Northeast India, is renowned for its rich heritage in handloom and handicraft traditions. The state's indigenous communities have preserved a diverse array of artistic expressions, with weaving, bamboo and cane crafts, and wood carving forming the backbone of its artisanal economy. Particularly, Tripura's handloom sector is known for its intricate tribal motifs

and unique weaving techniques practiced predominantly by women from tribal groups like the Tripuri, Reang, Jamatia, Chakma, Halam, Mog, Kuki, Lushai, Uchoi, Garo, Koloi, Chaimar, Murasing, Ranglong, Kaipeng, Thangchang, Malsom, Bhutia, and Noatia tribes. Similarly, bamboo and cane products from furniture to decorative items have long reflected the symbiosis between traditional knowledge and sustainable natural resource use (Das & Debbarma, 2020). These crafts are not only expressions of identity and culture but also provide critical livelihood support to thousands of rural households.

In recent years, however, the sustainability of Tripura's handloom and handicraft sector has come under increasing strain. Sustainability in this context refers to the ability of the industry to maintain economic viability, ecological balance, and socio-cultural relevance over the long term. While the sector has immense potential, it faces significant challenges including the depletion of natural resources, limited access to modern markets, inadequate infrastructure, and diminishing interest among the younger population. Moreover, the lack of formal training, design innovation, and policy implementation hinders the growth and adaptation of the sector in a competitive market environment. Environmental sustainability is also a concern, with overdependence on forest-based raw materials without adequate reforestation or conservation efforts (Sharma, 2021).

Given the state's developmental priorities and the growing global demand for handmade, eco-friendly, and ethical products, there is a pressing need to re-evaluate the sustainability landscape of Tripura's traditional industries. The rising interest in sustainable and inclusive development models positions the handloom and handicraft sector as a potential driver for rural development, women's empowerment, and cultural preservation. However, to realize this potential, a comprehensive understanding of the challenges and opportunities is crucial.

The rationale for this study lies in the need to bridge the gap between traditional artisan practices and modern sustainable development goals. By undertaking a critical review of existing literature, government reports, and empirical findings, this study aims to provide insights that can inform future policies, promote innovation, and support the resilience of artisan communities. The scope of the study includes an in-depth examination of the economic, social, and environmental factors influencing the sustainability of the industry, as well as an exploration of interventions both existing and proposed that can enable sustainable transformation.

This review-based research thus serves a dual purpose: to highlight the critical issues undermining the sustainability of Tripura's handloom and handicraft industry and to identify strategic opportunities for strengthening it. By doing so, it hopes to contribute

meaningfully to academic discourse, policy formulation, and grassroots-level action for the preservation and promotion of Tripura's artisanal legacy in a sustainable manner.

1.1. Objectives of the Study

1. To analyse the key sustainability challenges impacting the growth and resilience of Tripura's handloom and handicraft industry, including issues related to market access, resource availability, and socio-economic constraints.
2. To explore viable opportunities and strategic interventions for promoting sustainable development in the sector, with a focus on innovation, policy support, and inclusive growth for artisan communities.

2. Literature Review

2.1. Historical and Cultural Context

Tripura's handloom and handicraft traditions are deeply rooted in its socio-cultural fabric, evolving over centuries through the artistic expressions of its indigenous communities. These traditional practices not only serve utilitarian purposes but also act as powerful mediums of cultural identity, heritage preservation, and intergenerational knowledge transfer. A considerable body of literature underscores the historical depth, tribal craftsmanship, and cultural relevance of Tripura's artisanal industries.

The evolution of handloom weaving in Tripura can be traced to the tribal communities, particularly the Tripuri, Reang, Chakma, Halam, and Lusai groups, who have historically engaged in spinning and weaving for their domestic needs and ceremonial functions (Bhattacharjee, 2018). Traditional looms, such as the loin loom and the frame loom, have been used by tribal women to create intricately designed textiles with symbolic motifs representing nature, myths, and social beliefs (Bhaumik & Bhowmik, 2017). Bamboo and cane crafts also have a long-standing history, with communities using forest resources to produce baskets, mats, furniture, and utility items that reflect both aesthetic value and environmental consciousness (Roy & Dutta, 2019).

Indigenous communities play a pivotal role in sustaining these art forms. Their crafts are not merely economic activities but expressions of identity, rituals, and social values. For instance, the rignai, a traditional woven wraparound worn by Tripuri women, signifies marital status and clan affiliation, while bamboo articles often carry ritualistic importance in tribal ceremonies (Chakraborty, 2020).

These products are often passed down through generations, preserving both technique and cultural narratives.

The diversity of Tripura's handloom and handicraft products is notable. Textiles range from brightly colored shawls and wraps to household linens, each reflecting ethnic motifs and regional styles (Sarma, 2016). Bamboo crafts include decorative items, utility goods, and furniture, with each district showcasing unique techniques and designs (Paul, 2020). Such diversity stems from the varied ethnic backgrounds of the artisan communities, their localized materials, and region-specific traditions.

Despite this cultural richness, many scholars argue that these traditional art forms face existential threats due to modernization, resource scarcity, and diminishing interest among youth (Lal & Das, 2021). The lack of documentation, commercialization pressure, and neglect by formal education systems are gradually eroding the cultural distinctiveness of the crafts (Sarkar & Mitra, 2019). Yet, there are growing calls for reviving these traditions through cultural tourism, craft exhibitions, and educational programs (Sen & Bhowmick, 2018).

The literature reveals that Tripura's handloom and handicraft traditions are not only historically significant but also rich in cultural diversity. The role of indigenous communities remains central to their evolution and sustainability. A deeper understanding of these contexts is vital for framing effective sustainability strategies that respect cultural values while ensuring economic viability.

Table 1: Focus Area and Key Contribution of Historical and Cultural Context

Sl. No.	Reference	Focus Area	Key Contribution
1	Bhattacharjee, M. (2018)	Textile traditions	Comprehensive documentation of Tripura's textile heritage, including motifs, techniques, and socio-cultural value.
2	Bhaumik, S., & Bhowmik, P. (2017)	Tribal weaving	Explores traditional tribal weaving practices and their role in community identity and economy.
3	Roy, A., & Dutta, P. (2019)	Bamboo crafts and sustainability	Highlights bamboo craft as a sustainable livelihood option with emphasis on environmental benefits.

4	Chakraborty, S. (2020)	Cultural identity through weaving	Analyzes the symbolism and cultural meaning of Rignai (traditional attire), linking it to gender and identity.
5	Sarma, R. (2016)	Ethnic textile design	Provides insights into the design language and symbolic meaning of ethnic textiles in Northeast India.
6	Paul, B. (2020)	Craft cluster development	Case study on bamboo craft clusters in Tripura, focusing on collective production, market access, and skill development.
7	Lal, N., & Das, R. (2021)	Youth and traditional crafts	Assesses challenges in youth engagement with traditional crafts and the need for modern skill-building.
8	Sarkar, T., & Mitra, S. (2019)	Knowledge preservation	Emphasizes documentation of indigenous craftsmanship and traditional know-how for cultural continuity.
9	Sen, M., & Bhowmick, A. (2018)	Cultural tourism	Discusses the integration of tribal crafts into tourism as a means of economic and cultural promotion.
10	Ministry of Textiles (2021)	National data and policy	Provides statistical data, government scheme evaluations, and sectoral analysis specific to Tripura's handloom industry.

2.2. Sustainability Challenges in Tripura's Handloom and Handicraft Industry

The sustainability of Tripura's handloom and handicraft sector faces significant challenges spanning economic, social, environmental, and institutional domains. A growing body of research highlights how these multifaceted obstacles undermine the viability and growth potential of this culturally important industry.

Economically, low-income levels among artisans remain a critical issue. Multiple studies report that the earnings from handloom and handicraft activities are often insufficient to sustain livelihoods, pushing many artisans toward seasonal migration or alternative employment (Das & Debbarma, 2020; Lal & Das, 2021). Limited access to affordable credit exacerbates this problem, as most artisans depend on informal lending with high-interest rates, impeding their ability to invest in raw materials or scale production (Choudhury, 2019). Furthermore, inadequate

infrastructure, including poor transportation, lack of storage facilities, and absence of modern production tools, limits productivity and market access (Paul, 2020). Socially, generational shifts and migration trends pose substantial risks to the continuity of traditional crafts. Younger generations show reduced interest in pursuing handloom and handicraft work due to low returns and social stigma attached to manual labor (Sarkar & Mitra, 2019). This disengagement leads to knowledge erosion and skill gaps, threatening cultural transmission. Additionally, awareness about the potential of sustainable practices and market opportunities remains limited among artisans, further restricting innovation and diversification (Lal & Das, 2021).

Environmental concerns add another layer of complexity. The scarcity of natural raw materials such as quality cotton, bamboo, and dyes is increasingly reported due to overharvesting and habitat degradation (Roy & Dutta, 2019; Sharma, 2021). Unsustainable extraction practices not only threaten biodiversity but also risk the long-term availability of essential inputs for handicrafts. Moreover, the environmental footprint of some traditional processes, including water-intensive dyeing techniques, raises questions about ecological sustainability (Bhattacharjee, 2018).

Institutional challenges also hamper the sector's sustainability. Studies point to inadequate policy support and poor implementation of government schemes designed to assist artisans (Ministry of Textiles, 2021). The unorganized nature of the industry leads to fragmented efforts, lack of collective bargaining power, and difficulty in accessing benefits such as training, subsidies, and market linkages (Choudhury, 2019). Furthermore, limited coordination between various stakeholders-government, NGOs, cooperatives, and private players-results in duplication of efforts and inefficient resource utilization (Sen & Bhowmick, 2018).

Several authors call attention to the urgent need for integrated approaches that address these overlapping challenges. Lal and Das (2021) emphasize combining skill development with financial inclusion, while Roy and Dutta (2019) advocate for sustainable raw material management practices. Sarkar and Mitra (2019) highlight the importance of documentation and awareness campaigns to preserve indigenous knowledge and motivate younger artisans.

The sustainability challenges facing Tripura's handloom and handicraft industry are deeply interconnected. Overcoming these requires multi-dimensional strategies that enhance economic viability, promote social engagement, conserve environmental resources, and strengthen institutional frameworks.

Table 2: Focus Area and Key Contribution of Sustainability Challenges in Tripura's Handloom and Handicraft Industry

Sl. No.	Reference	Focus Area	Key Contribution
1	Bhattacharjee, M. (2018)	Cultural and historical significance of textiles	Traces the evolution of Tripura's textile traditions and their cultural symbolism
2	Choudhury, P. (2019)	Financial challenges of artisans	Highlights lack of credit access, dependence on informal loans, and financial exclusion
3	Das, S., & Debbarma, R. (2020)	Sectoral sustainability issues	Analyzes economic, environmental, and social challenges in Tripura's handicraft sector
4	Lal, N., & Das, R. (2021)	Youth disengagement from traditional crafts	Discusses declining interest among youth and recommends integration of skill training
5	Ministry of Textiles (2021)	Government data on handloom sector	Provides statistical data on artisan demographics, production, and government support gaps
6	Paul, B. (2020)	Bamboo craft clusters and development	Studies cluster-based approach and its impact on rural artisan empowerment
7	Roy, A., & Dutta, P. (2019)	Sustainability of bamboo crafts	Examines natural resource management and eco-friendly production challenges
8	Sarkar, T., & Mitra, S. (2019)	Indigenous knowledge preservation	Emphasizes the need for documentation to preserve traditional skills and practices
9	Sen, M., & Bhowmick, A. (2018)	Craft tourism potential	Advocates leveraging tribal crafts for sustainable tourism and rural development
10	Sharma, A. (2021)	Environmental sustainability in crafts	Investigates ecological impact of handicraft processes and recommends green practices

2.3. Emerging Opportunities in Tripura's Handloom and Handicraft Industry

The handloom and handicraft sector in Tripura, despite facing several sustainability challenges, is witnessing emerging opportunities that can drive its revival and long-term growth. These opportunities are shaped by evolving market preferences, digital transformations, institutional support, and efforts in capacity building and cluster-based development.

In recent years, market trends have shown increasing consumer preference for eco-friendly, handmade, and culturally authentic products, particularly in urban and international markets. According to Bhattacharjee (2018), the unique motifs and organic nature of Tripura's handloom products hold significant appeal in niche markets. Sharma (2021) notes that heightened environmental awareness has led consumers to value products that are both ethically produced and sustainable. This shift presents an opportunity for artisans to reposition their crafts as green and heritage products, creating access to premium markets.

The digital revolution has further opened new avenues for artisans through e-commerce platforms, which help bypass traditional intermediaries and allow direct access to consumers. As highlighted by Sarkar and Mitra (2019), digital storytelling and visual branding through platforms like Instagram and Etsy have given tribal crafts global visibility. Sen and Bhowmick (2018) also argue that integrating crafts with online tourism and virtual exhibitions enhances cultural value and marketing potential. However, access to digital infrastructure and training remains a barrier that needs addressing.

Government schemes and NGO interventions have been instrumental in promoting artisan welfare and product promotion. The Ministry of Textiles (2021) highlights several initiatives under the National Handloom Development Programme (NHDP) and the Handicrafts Mega Cluster Mission that aim to provide financial assistance, design inputs, and raw material support. Roy and Dutta (2019) emphasize the role of NGOs in mobilizing rural artisans into self-help groups (SHGs), enabling collective bargaining and participation in national trade fairs. However, effective coordination between government bodies and grassroots organizations remains critical for ensuring impact.

Capacity building and skill development initiatives are central to revitalizing interest among younger generations. Lal and Das (2021) argue that blending traditional skills with modern design and entrepreneurship training can make crafts more viable for youth. Choudhury (2019) supports this view by showing how skill upgrading improves productivity and facilitates product diversification, especially for

export markets. Collaboration with design institutes and vocational programs can help in bridging the generational gap and modernizing the craft ecosystem. Another major opportunity lies in cluster-based development, which facilitates shared infrastructure, design resources, and access to markets. Paul (2020) notes that bamboo craft clusters in Tripura have demonstrated positive socio-economic impacts, fostering community participation and improving quality standards. Cluster models encourage economies of scale and better integration with value chains, as noted by Das and Debbarma (2020).

The convergence of market demand, digital access, institutional support, capacity development, and clustering presents a fertile ground for sustainable growth in Tripura's handloom and handicraft sector. Tapping into these opportunities requires a cohesive and multi-stakeholder approach that aligns cultural preservation with contemporary innovation.

Table 3: Focus Area and Key Contribution of Emerging Opportunities in Tripura's Handloom and Handicraft Industry

Sl. No.	Reference	Focus Area	Key Contribution
1	Bhattacharjee, M. (2018)	Cultural heritage of textiles	Documents the traditional textile practices of Tripura, emphasizing their historical and cultural significance.
2	Choudhury, P. (2019)	Economic constraints	Analyzes the financial challenges faced by artisans, including lack of credit and economic vulnerability.
3	Das, S., & Debbarma, R. (2020)	Sustainability challenges	Evaluates environmental, economic, and social issues affecting the handicraft sector in Tripura.
4	Lal, N., & Das, R. (2021)	Youth involvement	Highlights declining youth participation and the importance of skill development for sustainability.
5	Ministry of Textiles (2021)	Sectoral data and policies	Provides statistical insights and reviews the effectiveness of government schemes in the handloom sector.
6	Paul, B. (2020)	Cluster development	Studies the impact of bamboo craft clusters on community development and artisan livelihoods.
7	Roy, A., & Dutta, P. (2019)	Sustainable livelihoods	Explores bamboo craft as an eco-friendly livelihood option and assesses resource sustainability.

8	Sarkar, T., & Mitra, S. (2019)	Indigenous knowledge	Emphasizes the need for documentation and transmission of traditional skills and practices.
9	Sen, M., & Bhowmick, A. (2018)	Cultural tourism	Examines the potential of integrating tribal crafts with tourism for economic and cultural benefits.
10	Sharma, A. (2021)	Environmental sustainability	Discusses ecological concerns in craft production and advocates for environmentally responsible practices.

2.4. Best Practices in Tripura's Handloom and Handicraft Industry

The handloom and handicraft industry in Tripura, rooted deeply in tribal traditions and community identity, is undergoing a gradual transformation through the implementation of best practices aimed at enhancing sustainability. These practices are shaped by successful local initiatives, learnings from neighboring states, and the proactive role of women and self-help groups (SHGs) in revitalizing the craft economy.

One of the most notable best practices in Tripura is the formation of artisan cooperatives, which have significantly improved production efficiency, market access, and bargaining power for local artisans. According to Paul (2020), bamboo craft cooperatives in regions like Melaghar and Agartala have enabled artisans to collectively procure raw materials, standardize quality, and participate in trade fairs. These collectives also serve as hubs for skill development and design innovation. Similarly, Roy and Dutta (2019) highlight that bamboo cooperatives not only support environmental sustainability but also foster community resilience.

Women-led self-help groups have emerged as a critical force in preserving and promoting handloom and handicraft traditions. Lal and Das (2021) note that women in tribal communities, particularly among the Debbarma and Reang groups, have maintained weaving practices through SHGs supported by NGOs and government schemes. These SHGs provide access to microcredit, facilitate training, and connect artisans with national and international markets. Sharma (2021) points out that empowering women artisans leads to broader socio-economic benefits, including education and health improvements within artisan households.

In comparison with other northeastern states like Assam and Manipur, Tripura has adopted similar approaches in leveraging community-led craft clusters and SHGs, though with distinct cultural styles. Bhattacharjee (2018) explains that Tripura's Rignai

and Risa weaving is comparable in cultural depth to Assam's Mekhela Chador, though Tripura lags slightly in commercialization and institutional support. Bhaumik and Bhowmik (2017) recommend replicating Manipur's marketing infrastructure, including craft malls and design banks, to elevate Tripura's crafts to a national platform.

The integration of traditional knowledge with modern business models is another recognized best practice. Sarkar and Mitra (2019) describe how documentation and digital archiving of tribal designs have preserved endangered motifs while opening opportunities for brand development and intellectual property rights. Additionally, Sen and Bhowmick (2018) emphasize the value of integrating crafts with cultural tourism. In destinations like Khumulwng and Unakoti, local artisans have been involved in tourism-based craft experiences, thereby increasing visibility and income.

Government-led interventions under the National Handloom Development Programme (NHDP) and Cluster Development Scheme have also promoted best practices in organizing production and marketing systems. The Ministry of Textiles (2021) notes that the introduction of Common Facility Centres (CFCs) and design resource centers has enhanced both productivity and quality control.

Best practices in Tripura's handloom and handicraft industry revolve around cooperative models, women-led SHGs, knowledge preservation, and cross-state learning. Scaling these practices across districts while addressing gaps in infrastructure and policy coordination can ensure sustainable growth and heritage preservation.

Table 4: Focus Area and Key Contribution of Best Practices in Tripura's Handloom and Handicraft Industry

Sl. No.	Reference	Focus Area	Key Contribution
1	Bhattacharjee, M. (2018)	Textile Traditions	Detailed exploration of traditional textiles of Tripura, their motifs, and cultural roots.
2	Bhaumik, S., & Bhowmik, P. (2017)	Tribal Weaving	Study of indigenous weaving techniques and tribal community engagement in Tripura.
3	Roy, A., & Dutta, P. (2019)	Bamboo Craft & Livelihoods	Examines bamboo craft as an eco-friendly and economically viable livelihood strategy.

4	Paul, B. (2020)	Craft Clusters	Case study of cluster-based bamboo craft development and artisan empowerment in Tripura.
5	Lal, N., & Das, R. (2021)	Youth & Handloom	Investigates youth participation in traditional crafts and challenges in sustaining interest.
6	Sharma, A. (2021)	Environmental Sustainability	Analyzes sustainability concerns in Indian handicrafts, including resource use and climate impacts.
7	Sarkar, T., & Mitra, S. (2019)	Indigenous Knowledge	Highlights preservation of traditional craft knowledge through documentation and digitization.
8	Sen, M., & Bhowmick, A. (2018)	Cultural Tourism	Explores how crafts can support tourism and promote tribal culture as a sustainable strategy.
9	Ministry of Textiles (2021)	National Census & Policy	Provides official data on handloom in Tripura, highlighting government schemes and sector status.
10	Das, S., & Debbarma, R. (2020)	Sustainability Issues	Discusses systemic challenges like market access, raw materials, and institutional gaps in Tripura's craft sector.

3. Present scenario of Sustainability Challenges and Opportunities in Tripura's Handloom and Handicraft Industry

3.1. Sustainability Challenges

1. Financial Constraints and Lack of Credit Access: Artisan clusters often operate without formal financial linkages, limiting their ability to invest in quality materials and innovation.
2. Inadequate Infrastructure: Many clusters lack essential facilities such as Common Facility Centres (CFCs), reliable power supply, and modern equipment, hindering productivity and efficiency.
3. Limited Market Access and Branding: Despite efforts to market products beyond the state, including outlets in major cities and plans to collaborate with e-commerce platforms like Amazon, widespread recognition and demand remain limited.

4. **Youth Disengagement:** Younger generations show declining interest in traditional crafts, leading to a potential loss of indigenous knowledge and skills.
5. **Environmental Concerns:** While traditional practices are eco-friendly, challenges such as the use of chemicals in silk processing and scarcity of natural raw materials pose sustainability issues.

3.2. Emerging Opportunities

1. **Government Initiatives and Policy Support:** Programs like the Integrated Handloom Development Scheme (IHDS) and the establishment of CFCs aim to provide training, design development, and marketing assistance to artisans.
2. **E-commerce and Digital Platforms:** Plans to collaborate with online marketplaces such as Amazon are underway to expand market reach and provide artisans with broader exposure.
3. **Geographical Indication (GI) Tagging:** Efforts to obtain GI tags for traditional crafts like cane and bamboo products aim to protect and promote Tripura's unique artisanal heritage.
4. **Skill Development and Training Programs:** Initiatives to train artisans with empanelled experts are being implemented to enhance craftsmanship and introduce innovative designs.
5. **Promotion of Cultural Tourism:** Integrating handloom and handicraft products into tourism through the development of wayside amenities and exhibitions can boost local economies and preserve cultural heritage.

While Tripura's handloom and handicraft industry faces significant sustainability challenges, concerted efforts by the government and stakeholders are creating avenues for growth and revitalization. By addressing financial, infrastructural, and environmental issues, and leveraging opportunities in digital marketing, policy support, and cultural tourism, the industry can move towards a more sustainable and prosperous future.

4. Policy Gaps and Recommendations

4.1. Need for integrated development policies

Policy Gaps: Tripura's handloom and handicraft sector faces fragmented policies with multiple departments working in isolation, causing overlapping schemes and inefficient support. There is no unified state-level framework integrating economic, cultural, social, and environmental goals. Poor coordination among government agencies, cooperatives, and private players limits innovation and resource use. Weak

value chain linkages and lack of cluster-based development hinder artisans from accessing infrastructure, training, and markets. The absence of digital integration further restricts market reach. These gaps impede sustainable growth, reducing the sector's competitiveness and ability to preserve cultural heritage effectively.

Recommendations: Tripura should develop an integrated state policy for its handloom and handicraft sectors, unifying stakeholders under a clear vision of sustainability and cultural preservation. Establishing a dedicated development authority can improve coordination and policy implementation. Promoting cluster-based development with infrastructure, training, and financial support will strengthen value chains. Enhancing partnerships among government, private sector, and communities will foster innovation and inclusivity. Digital tools for monitoring and marketing should be adopted to expand market access. Aligning initiatives with sustainability goals will ensure the long-term resilience and growth of Tripura's traditional crafts industry.

4.2. Strengthening artisan access to finance, training, and raw materials

Policy Gaps: Artisans in Tripura face limited access to institutional finance due to lack of collateral, poor credit awareness, and weak banking penetration in rural areas. Existing financial schemes are often underutilized because of bureaucratic hurdles and lack of outreach. Training programs remain sporadic and are not aligned with evolving market needs, particularly in digital literacy and design innovation. Furthermore, raw material supply chains are poorly organized, leading to high costs and inconsistent quality. There is an absence of centralized procurement or cooperative systems to support bulk purchasing or fair pricing, leaving individual artisans vulnerable to exploitation and production delays.

Recommendations: To strengthen artisan support, policies must ensure easy access to collateral-free credit through simplified loan schemes and microfinance initiatives tailored for craftspeople. Financial literacy programs should be introduced at the grassroots level. Government and NGOs should organize regular, market-oriented training programs, including modern design, business skills, and e-commerce. Establishing raw material banks or cooperatives will help streamline access to affordable and quality inputs. A centralized digital platform linking artisans to finance providers, training institutions, and raw material suppliers can enhance efficiency and reduce dependency on intermediaries. These steps will empower artisans and improve the sustainability of the sector.

4.3. Marketing and branding strategies for global reach

Policy Gaps: Tripura's handloom and handicraft sector lacks a cohesive marketing and branding strategy that highlights its unique cultural identity on national and international platforms. There is minimal investment in professional branding, packaging, and storytelling, which weakens product appeal in competitive markets. Government initiatives often focus on local fairs rather than sustained global promotion. Digital marketing support and international trade facilitation are largely absent, and artisans have limited knowledge of branding, export standards, or consumer trends. These gaps hinder the sector's ability to position itself as a high-value, eco-friendly craft segment in the global marketplace.

Recommendations:

An integrated marketing strategy should be developed to promote Tripura's crafts as unique, sustainable, and culturally rich. Government support is essential for branding initiatives, including geographical indication (GI) tagging, eco-certifications, and storytelling campaigns. Investments should be made in digital marketing training, social media engagement, and multilingual e-commerce platforms to enhance global visibility. Participation in international trade fairs and collaborations with global designers and influencers can elevate product appeal. Establishing a dedicated marketing cell under a craft promotion board would ensure strategic outreach, professional packaging, and long-term brand building, helping artisans access premium markets and improve income sustainability.

4.4. Sustainable resource management and environmental practices

Policy Gaps: Tripura's handloom and handicraft sector currently lacks structured policies promoting sustainable resource use and environmentally responsible practices. There is minimal regulation or guidance on the ecological sourcing of raw materials such as bamboo, cane, dyes, and cotton. Overharvesting and unsustainable extraction often threaten biodiversity and deplete local resources. Artisans have limited awareness or access to eco-friendly alternatives or waste management techniques. Furthermore, environmental guidelines are rarely integrated into training or production processes, and there is no institutional mechanism to monitor ecological impact or encourage circular practices. This gap hampers the sector's long-term environmental and economic sustainability.

Recommendations: To ensure environmental sustainability, the government must formulate clear guidelines on eco-friendly resource use, encouraging bamboo

replantation, organic dyes, and waste reduction techniques. Introducing environmental literacy in artisan training programs can promote green production methods. Institutions should support research on sustainable alternatives and create raw material banks focused on ethical sourcing. Incentives for eco-certified products and support for lifecycle assessments will help monitor environmental impact. Partnerships with environmental NGOs and certification agencies can further embed sustainability into craft practices. These initiatives will not only preserve Tripura's ecological balance but also increase the appeal of its crafts in eco-conscious global markets.

5. Conclusion

The handloom and handicraft industry of Tripura embodies the rich cultural heritage and indigenous artistry of the state, offering significant economic and social value. However, the sector faces numerous sustainability challenges, including limited access to finance, inadequate infrastructure, generational shifts, environmental degradation, and weak policy coordination. These issues have hindered the full potential of artisans and threatened the preservation of traditional knowledge and skills. Despite these challenges, emerging opportunities such as growing global demand for eco-friendly handmade products, digital market access, government schemes, and youth participation signal a path forward.

To achieve long-term sustainability, a multi-pronged approach is essential—combining policy integration, enhanced market access, sustainable resource management, and skill development. The promotion of cluster-based development models, digital branding strategies, and eco-conscious production practices will not only uplift the artisan community economically but also safeguard the region's cultural and ecological heritage. Strengthening partnerships between the government, NGOs, private stakeholders, and artisan groups can bridge existing gaps and facilitate a resilient ecosystem for crafts in Tripura. Overall, aligning tradition with innovation and sustainability offers a viable roadmap for revitalizing the handloom and handicraft sector, ensuring it thrives in both local and global markets while maintaining its cultural authenticity.

The study upholds ethical integrity by relying solely on secondary data from credible sources, ensuring proper citation and cultural sensitivity toward Tripura's indigenous artisan communities. However, its literature-based nature limits empirical validation, as field-level perspectives and recent statistical data are not incorporated. Regional variations and economic quantification remain partially explored, restricting generalization. Future research should include primary surveys, quantitative sustainability assessments, and gender or youth-focused analyses to enrich

understanding. Exploring digital interventions, policy frameworks, and comparative studies with other northeastern states can further advance sustainable development in Tripura's handloom and handicraft sector.

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Service Quality of Hospitals : A Bibliographic Review

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Abstract

Hospital service quality has emerged as a critical area of healthcare research, driven by increasing patient expectations, policy reforms, and the need for competitive differentiation. This study analyses 768 Scopus-indexed journal articles published between 1951 and 2024, the longitudinal scope captures the evolution of key themes over seven decades of the research domain allowing a robust analysis. The data has been retrieved using a structured search strategy targeting publications with "service," "quality," and "hospital" in the title. Co-authorship, keyword co-occurrence, bibliographic coupling, and co-citation analyses have been performed to uncover collaboration patterns, thematic clusters, and influential contributions using VOSviewer (v1.6.20). Findings indicate significant growth in research output post-2000, with the U.S., India, and Iran as top contributors. Key thematic clusters reflect a mature yet evolving domain encompassing human-centric care, healthcare delivery, methodological approaches, healthcare systems, and economic considerations. The network analyses highlight influential authors and collaboration groups driving the intellectual landscape. This study provides a comprehensive map of hospital service quality research, presenting critical insights into its evolution and identifying promising avenues for future interdisciplinary exploration.

Keywords: Service Quality, Bibliometric Analysis, VOSviewer, Hospital

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Introduction:

Healthcare services play a vital role in determining a country's social welfare and economic productivity, making the sector one of the most critical priorities for both governments and citizens (Coutinho et al., 2019). Beyond its contribution to national well-being, the healthcare industry also generates substantial revenue from domestic and international sources, reinforcing its significance as a service sector. The uniqueness of healthcare lies in the severity and complexity of medical cases, where the stakes are high, and patients are often willing to invest significant financial resources in pursuit of quality treatment (Ahmed et al., 2017). In such situation, quality becomes a key differentiator and a source of competitive advantage (Yeilada & Direktör, 2010).

The concept of service quality in healthcare has evolved over decades, with contributions by scholars such as Gronroos (1984), Lehtinen & Lehtinen (1991), and Parasuraman et al. (1985, 1988) laying the groundwork for its measurement and interpretation. Later contributions, such as SERVPERF by Cronin & Taylor (1992), emphasized performance-based assessment of service quality. In the healthcare context, while several studies have assessed service quality from clinical or administrative standpoints (Asnawi et al., 2019; Almomani et al., 2020), there is growing consensus that patients' perceptions offer more reliable insights into service effectiveness (Ibrahim, 2020). While much research has investigated healthcare service quality conceptually and empirically, less attention has been paid to understanding how this field has evolved over time from a bibliometric perspective. In recent years, bibliometric analysis has emerged as a valuable tool for systematically examining research trends, productivity, and scholarly influence across disciplines. However, within the domain of service quality research, there remains an incomplete understanding of how the field has developed and evolved over time, since the inception of the concept. Although several bibliometric studies have explored aspects of service quality, most fail to provide a comprehensive mapping of its intellectual landscape-particularly regarding influential authors, key journals, major themes, collaboration strength, and thematic shifts across decades. Thus, the following research questions have been developed:

1. How has research on hospital service quality evolved over time in terms of publication trends and patterns?
2. Which research papers, authors, and journals have been most influential in shaping this field based on citation analysis?
3. What are the major co-authorship collaboration patterns among researchers working on hospital service quality?
4. What are the key thematic clusters identified through keyword co-occurrence, and how have these themes evolved over time?
5. What are the bibliographic coupling and co-citation relationships among authors and sources in hospital service quality research, and what do they reveal about the intellectual structure of this domain?

The present study employs a bibliometric tool i.e., VOSviewer to map research development in hospital service quality. The study aims to analyse the depth and breadth of existing literature, identify major contributors and research clusters, and suggest future directions for advancing this field.

Review of Literature

The concept of service quality has undergone an extensive theoretical development and subsequently has gone through several empirical testing all over the world since the past few decades. The concept of service quality has seen tremendous development in various sectors providing services like hospitality, hospital, restaurants, airlines, etc. The foundational seminal work by Grönroos (1984) established quality as a multidimensional construct comprising functional and technical aspect of service delivery. Parasuraman et al. (1985, 1988) developed the most notable work where service quality could be measured using the measurement model SERVQUAL. Since then, based on the SERVQUAL, several other models measuring the service quality in different sectors have been developed by notable scholars leading to further development of the field of service quality like EduQUAL for education sector (Mahapatra & Khan, 2007), LODSERV for lodging industry (Knutson, et al, 1990), DINESERV for restaurants (Knutson et al, 1996), HEALTHQUAL (Lee, 2017), and HOSPITALQUAL (Itumalla, 2014) for healthcare sector.

In Healthcare sector context, service quality has been examined using various instruments like HEALTHQUAL, HOSPITALQUAL, PubHosQUAL, etc. These models have been developed to assess patients' perceptions of service delivery. Empirical studies consistently confirm that service quality perceptions are a strong predictor of patient satisfaction and behavioral intentions such as hospital revisits and word-of-mouth recommendations (Almomani et al., 2020; Asnawi et al., 2019). Despite rich empirical contributions, service quality in healthcare as a body of research lacks holistic view of the global landscape. Moreover, the integration of the service quality concept in healthcare sector being at a nascent stage, very little efforts have been made to systematically map the research trends. Since then bibliometric analysis has gained traction employing bibliometric tools like VOSviewer, Biblioshiny, Bibliometrix, etc.

Recent bibliometric studies have shed valuable light on the evolving landscape of hospital service quality research. Ali et al. (2021) conducted a bibliometric study on Scopus-indexed publications from 1969 to 2019, analyzing global patterns in research on healthcare service quality using VOSviewer and Bibliometrix. The study revealed rapid growth in service quality publications post-2000, emphasizing the prominence of SERVQUAL-based studies, operational performance, and technology interventions. Valencia-Arias et al. (2018) observe a similar pattern, noting widespread reliance on the SERVQUAL framework yet signaling the need for novel approaches beyond traditional models. This aligns with Fadhal and Dioso's (2025) focus on nursing

service quality, patient safety, and professional development, underscoring diverse but interconnected research domains. However, Yas et al. (2020) performed a bibliometric review of 2,782 Scopus indexed publications from 2009 to 2019 focusing on service quality, customer satisfaction, and loyalty. The study remind us that while theoretical connections between service quality, satisfaction, and loyalty are well established, important nuances in empirical validation remain.

Meanwhile, Afriyanti et al. (2024) zoomed in on patient-centric factors such as satisfaction and inpatient room standards, showing that these practical aspects dominate much of the current discourse. Marlina et al. (2024) addressed this by linking service quality to physician performance determinants such as competence, communication, and staffing, highlighting contexts like India and Indonesia as research hotspots. This prompts us to consider geographic disparities in research productivity and thematic focus. Among such patient centric studies, Wilanda et al. (2024) focused more closely on hospital performance management, using co-authorship analysis to identify influential research groups working on technology integration and quality management. This suggests that collaboration patterns may significantly impact how innovations diffuse across the healthcare sector. Yarmak and Rolnik-Sadowska (2022) analyzed a massive dataset of over 25,000 Scopus-indexed publications (2012-2022) to explore research themes on public service quality and healthcare service using VOSviewer. The study revealed thematic clusters that directly connect to hospital service quality, and pointed out interesting underexplored areas like digital innovation and citizen engagement.

Previous bibliometric analyses highlighted the evolution of concept service quality of hospital and have illuminated important thematic patterns, influential authors, and collaboration networks but are yet to fully integrate these insights into a comprehensive, long-term mapping of hospital service quality research. This fragmentation calls for the need of holistic bibliometric explorations that highlight systematic and longitudinal examination of the field. To overcome existing gaps, this study utilizes the bibliometric software VOSviewer to systematically analyze the intellectual structure, collaboration networks, and thematic evolution of hospital service quality research from its inception in 1951 through 2024 by systematically identifying dominant research clusters, emerging topics, and influential authors and documents, and provide a quantitative and visual understanding of the field's development.

Objectives of the Study

1. To study the trend and pattern of publications of research work on service quality of hospitals over the years.

2. To identify the influential research papers in this study area on the basis of citation.
3. To study the co-authorship collaborations, co-occurrence patterns of keywords, bibliographic coupling and co-citation relationships among authors.

Research Methodology

In this study, literature on service quality in hospital settings has been collected from the Scopus Core Collection database maintained by Elsevier. Scopus has been selected for its comprehensive indexing of peer-reviewed journals across disciplines, particularly in healthcare and social sciences. A structured search has been conducted using the keywords "service" and "quality" in conjunction with "hospital" within the title field. This initial search has yielded 912 records spanning from 1951 to 2024. The results reveal that documents of 1951 has been the earliest available indexed record which can aptly portray the evolution of the hospital service quality concept. After applying a series of refinement criteria-including limiting the publication stage to final publications, restricting the source type to journals, and selecting only English-language documents, the dataset has been narrowed to 774 records. This refinement has been done to ensure quality, reliability and standardisation or accessibility of the documents within our database. Further filtering for document type has resulted in 768 journal articles excluding conference proceedings. These 768 articles have formed the basis for subsequent bibliometric analysis. The selection has focused on ensuring high-quality, peer-reviewed research, excluding conference proceedings and non-English texts to maintain consistency. The filtered dataset has been analyzed for publication trends, key journals, leading authors, and leading country. The data tables have been developed using Microsoft Excel, and visual bibliometric maps have been generated using VOSviewer (version 1.6.20) to examine the Co-Authorship, Co-Occurrence, BibliographicCoupling andCitation Analysis. The four bibliometric analysis has been specifically selected because they collectively cover the most critical dimensions of understanding the research field comprehensively. Co-authorship analyze social collaboration, keyword co-occurrence covers thematic structure, bibliographic coupling covers current research alignment and co-citation provides foundations for theoretical and empirical studies.

Table1 : Selection Criteria for Article Selection

Refining Criteria	Refinement	Justification	Final Results
Terms searched in Title	TITLE(service AND quality) AND TITLE(hospital)	Targets the study on Service Quality of Hospitals	912
Year	1951-2024	Timeframe captures the full evolution of the research domain allowing robust analysis	912
Publication stage	Final	Including only final-stage publications ensures high reliability and academic rigor	910
Source type	Journal	Inclusion contributes to the reliability and credibility of the findings	836
Language	English	Standardize the dataset and facilitates accessibility and global comparability	774
Document type	Article	Limiting to articles for maintaining consistency and a high level of scientific quality	768

Scope of the Study

1. The study uses Scopus database as the source of data retrieval.
2. The study covers research work published from 1951 to 2024.
3. The study analyses only Articles published in journals of English Language.

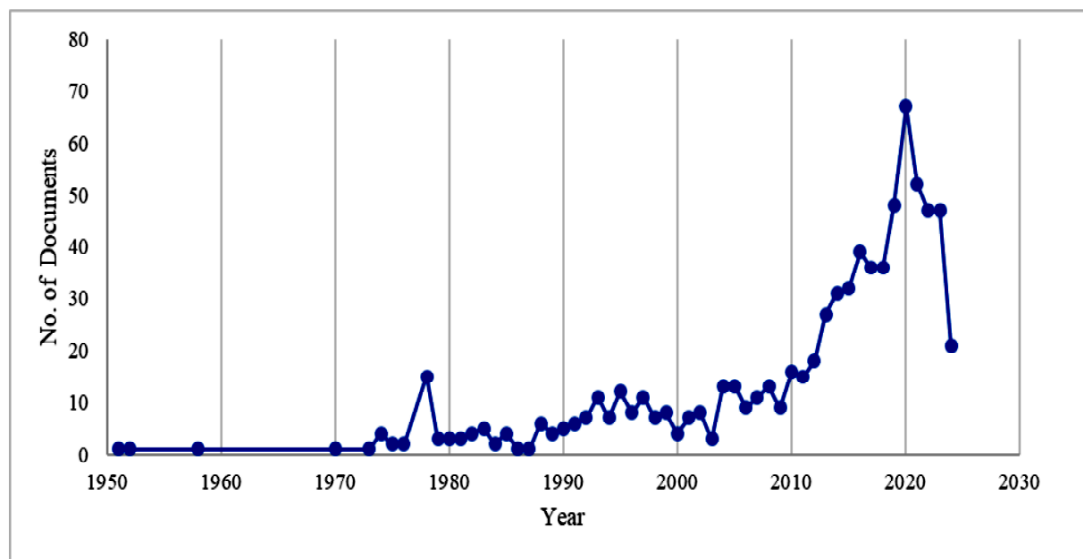
Results and Discussion

Trend and Pattern of Publications of Research Work

The publication trend of research on service quality in hospitals has been illustrated in Figure 1. In the initial years (1951-1977), the output was minimal, typically ranging between 1 to 4 documents annually, with the exception of 1978, which saw a notable rise to 15 publications. A gradual increase is evident from the 1990s, with years like 1995 (12 documents) and 1997 (11 documents) reflecting early signs of growth. Research activity accelerated significantly from the 2000s onward, culminating in a peak of 67 documents in 2020. Notably, the period from 2014 to

2021 consistently recorded over 30 documents each year. The years 2019 to 2024 maintained a high output (ranging from 48 to 67 documents), indicating sustained and active interest in this field in recent times.

Figure 1: Total Publications from 1951-2024 in the area of Service Quality of Hospitals



Source: Generated from Scopus Database

Table 2 highlights the top ten journals publishing research on service quality in hospitals over the years from 1951-2024. Leading the list is the International Journal of Health Care Quality Assurance, with 21 documents, underscoring its strong emphasis on healthcare quality research. It is followed by World Hospitals (14 documents) and BMC Health Services Research (12 documents), indicating their significant contributions to hospital and health service literature. Journals such as Total Quality Management and Business Excellence (11) and Journal of Health Management (10) reflect an intersection of quality management and healthcare administration. Indian Journal of Public Health Research and Development (9) and International Journal for Quality in Health Care (8) further demonstrate the diverse platforms supporting health-related research.

Beyond the top ten, 17 journals have published between 5 and 7 documents each, indicating moderate yet consistent engagement. Additionally, 61 journals contributed 2 to 4 documents, reflecting a broad dissemination across various

domains. Notably, 106 journals published only a single document, suggesting a wide but fragmented distribution across niche or less frequent publication venues. Overall, the data points to a concentrated interest in healthcare quality and service research, supported by a long tail of specialized and interdisciplinary journals.

Table 2: Top Ten Journals in the area of Service Quality of Hospitals from 1951-2024

Name of the Journal	No. of Documents Published
International Journal of Health Care Quality Assurance	21
World Hospitals	14
BMC Health Services Research	12
Total Quality Management and Business Excellence	11
Journal of Health Management	10
Indian Journal of Public Health Research and Development	9
International Journal for Quality in Health Care	8
International Journal of Healthcare Management	8
Federal Register	7
Hospital Topics	7

Source: Compiled by authors from Scopus Database

The analysis of author productivity in table 3 reveals a diverse landscape of contributions to research on hospital service quality over the years from 1951-2024. Zarei, E. leads with the highest number of documents (7), reflecting substantial research activity in the field followed by Arab, M. with 5 documents, and both Amiresmaili, M. and Andaleeb, S.S. with 4 documents each, marking them as key contributors. A group of authors including Rivai, F., Choi, M., Daneshkohan, A., among others, have published 3 documents each, indicating moderate but consistent involvement. Apart from those mentioned in the table, 71 authors have contributed 2 documents, suggesting a broad base of moderately active researchers. This distribution highlights a core group of prolific researchers (with 4-7 documents) surrounded by a long tail of less frequent contributors (with 1-2 documents), representing a mix of sustained and occasional engagement.

Table 3: Top Ten Authors in the area of Service Quality of Hospitals from 1951-2024

Name of the Author	No. of Documents Published
Zarei, E.	7
Arab, M.	5
Amiresmaili, M.	4
Andaleeb, S.S.	4
Rivai, F.	4
Choi, M.	3
Daneshkohan, A.	3
Darmawansyah	3
Hashjin, A.A.	3
Hegji, C.E.	3

Source: Compiled by authors from Scopus Database

The geographical distribution of research on hospital service quality reveals a strong concentration in a few leading countries as depicted in Table 4. The United States of America tops the list with 103 contributions, proving its dominant presence in the field. India (72), Iran (62), and Indonesia (56) also emerge as major contributors, reflecting robust regional research engagement in Asia. The United Kingdom (48), Australia (28), and China (27) demonstrate substantial outputs, aligning with their roles as established research hubs. Countries such as Turkey (25), Spain (24) and France (19) indicate consistent but moderate levels of contribution. Overall, the data reflects a strong concentration of research activity in North America, Asia, and parts of Europe, alongside emerging participation from regions in Africa and the Middle East.

Table 4: Top Ten Productive Countries in the area of Service Quality of Hospitals from 1951-2024

Country	No. of Documents Published
United States of America	103

India	72
Iran	62
Indonesia	56
United Kingdom	48
Australia	28
China	27
Turkey	25
Spain	24
France	19

Source: Compiled by authors from Scopus Database

Influential Research Papers

Table 5 depicts the top 10 most cited studies on hospital service quality. The most cited paper (523 citations) by Shieh et al. (2010) used a DEMATEL method to find key success factors in hospital service quality. Other highly cited works examined patient satisfaction, service quality in public vs private hospitals, patient loyalty, nursing services, and specialist palliative care. These studies were published in respected journals like BMJ, Social Science and Medicine, and Journal of Retailing and Consumer Services, and reflect global interest, including data from developing countries, Cyprus, India, and Hong Kong.

Table 5: Top Ten Influential Research Papers in terms of Citations

Authors	Year	Title	Journal	Citations
Shieh J.-I.; Wu H.-H.; Huang K.-K.	2010	A DEMATEL method in identifying key success factors of hospital service quality	Knowledge-Based Systems	523
Andaleeb S.S.	2001	Service quality perceptions and patient satisfaction: A study of hospitals in a developing country	Social Science and Medicine	426
Meesala A.; Paul J.	2018	Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future	Journal of Retailing and Consumer Services	338

Gaertner J.; Siemens W.; Meerpohl J.J.; Antes G.; Meffert C.; Xander C.; Stock S.; Mueller D.; Schwarzer G.; Becker G.	2017	Effect of specialist palliative care services on quality of life in adults with advanced incurable illness in hospital, hospice, or community settings: Systematic review and meta-analysis	BMJ (Online)	257
Lam S.S.K.	1997	SERVQUAL: A tool for measuring patients' opinions of hospital service quality in Hong Kong	Total Quality Management	223
Fatima T.; Malik S.A.; Shabbir A.	2018	Hospital healthcare service quality, patient satisfaction and loyalty: An investigation in context of private healthcare systems	International Journal of Quality and Reliability Management	185
Arasli H.; Haktan Ekiz E.; Turan Katircioglu S.	2008	Gearing service quality into public and private hospitals in small islands: Empirical evidence from Cyprus	International Journal of Health Care Quality Assurance	144
Amin M.; Nasharuddin S.Z.	2013	Hospital service quality and its effects on patient satisfaction and behavioural intention	Clinical Governance	140
Lee M.A.; Yom Y.-H.	2007	A comparative study of patients' and nurses' perceptions of the quality of nursing services, satisfaction and	International Journal of Nursing Studies	136
		intent to revisit the hospital: A questionnaire survey		
Padma P.; Rajendran C.; Lokachari P.S.	2010	Service quality and its impact on customer satisfaction in Indian hospitals: Perspectives of patients and their attendants	Benchmarking	135

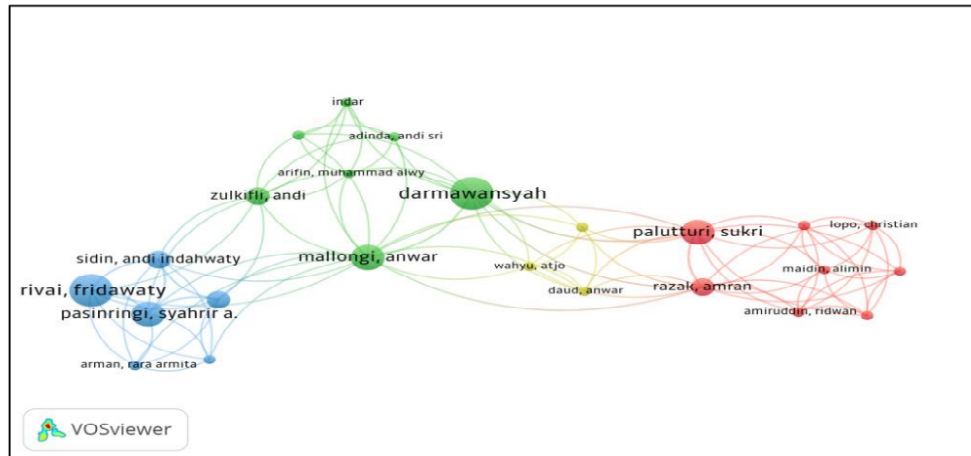
Source: Compiled by authors from Scopus Database

Co-authorship Analysis

To understand collaborative patterns among individual researchers, a co-authorship network was developed using VOSviewer (Figure 2). The analysis included 24 authors who met the minimum threshold of at least one co-authored publication. In the network visualization, nodes represent individual authors, and the links between them indicate co-authorship relationships. The connecting lines, or edges, represent co-authorship links, and their thickness and density illustrate the strength and frequency of collaboration among authors. Cluster analysis revealed four distinct collaborative groups, shedding light on the field's research communities.

The analysis reveals four prominent clusters. The Darmawansyah-Mallongi Cluster emerges as the largest and most centrally positioned, with Darmawansyah acting as a key node. This suggests a highly collaborative and possibly well-established research group. This cluster's density suggests well-established partnerships likely driving high-impact publications and shaping research agendas in the field. Palutturi Sukri stands out as a key influencer, with Razak Amran and Maidin Alimin as major collaborators. This cluster also exhibits moderate connectivity with the Darmawansyah group, suggesting overlapping research interests and some degree of cross-group collaboration. The Rivai-Fridawaty Cluster is the smallest and most isolated of the four, centered around Rivai, Fridawaty and Pasirringi, Syahira A. The limited external links suggest that this group may be engaged in niche or emerging research topics with minimal collaboration outside their immediate team. A small cluster of Wahyu Atjo and Daud Anwar, acts as an intermediary, forging occasional links between the larger Darmawansyah-Mallongi cluster and Palutturi Sukri cluster, potentially facilitating information flow and interdisciplinary collaboration. Overall, the author-level co-authorship network reveals a mix of large, central research groups and smaller, more specialized teams. Key authors anchor their respective clusters, supporting both intensive in-group collaboration and, to a lesser extent, cross-group knowledge exchanges.

It highlights the collaborative dynamics within the field and points to key researchers who may serve as influential nodes in the development of hospital service quality literature. However, there is still scope for collaborative work among the groups, include newer researchers, and encourage a wider variety of ideas and methods for future studies in this field.

Figure 2: Co-Authorship Analysis among Authors

Source: Generated using VOSviewer

Co-Occurrence Analysis

A keyword co-occurrence map was generated using VOSviewer to explore thematic groupings within healthcare-related literature (Figure 3). A total of 95 keywords met the minimum occurrence threshold of 20. In VOSviewer, clusters are formed by grouping keywords based on their co-occurrence patterns, where the proximity of nodes reflects the frequency with which those terms appear together. These clusters help reveal relationships among different research themes. Further interpretation is supported by examining overlaps and interconnections between clusters.

The keyword analysis revealed five distinct clusters. These thematic evolution of hospital service quality research represent different evolutionary phases of research focus from 1951 to 2024.

Cluster 1 (Human-Centric Cluster): It includes keywords such as humans, adult, female, middle aged, adolescent, aged, nurse, patient, empathy, and manager. This cluster emphasizes the human element of healthcare, encompassing both patients and providers across various age groups and demographic factors.

Cluster 2 (Healthcare Delivery Cluster): It features terms like patient satisfaction, perception, expectation, service quality, satisfaction, and hospital service, highlighting studies focused on how healthcare services are delivered and perceived by patients.

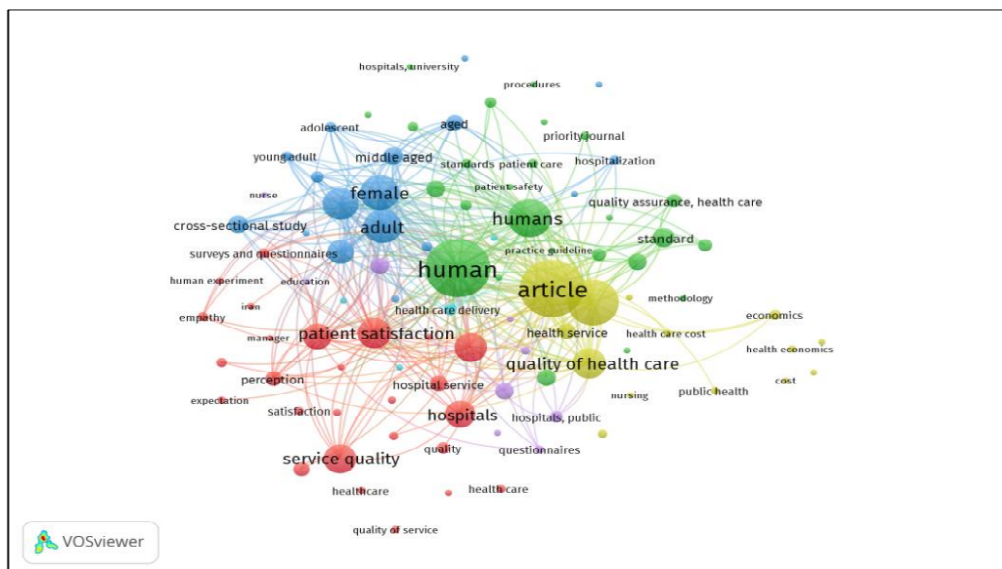
Cluster 3 (Research Methodology Cluster): It contains keywords such as cross-sectional study, surveys and questionnaires, human experiment, education, and methodology, pointing to the use of empirical methods in healthcare research.

Cluster 4 (Healthcare Systems Cluster): It includes health care, health service, nursing, public health, university, and procedures, reflecting structural and systemic aspects of healthcare provision.

Cluster 5 (Economic and Quality Assurance Cluster): It brings together terms like quality assurance, health care cost, standard, practice guideline, and economics, focusing on cost-effectiveness, standardization, and quality control in healthcare practices.

The frequent appearance of keywords such as humans, health care, and article indicates their centrality in the literature, while the density of connections among terms reflects strong thematic interrelations. These clusters show hospital service quality research is multi-dimensional, integrating human factors, patient experience, research methods, system structures, and economic themes. Overall, the presence of 95 high-frequency keywords highlights a well-developed body of research, with each cluster representing a key area of focus within the healthcare domain. Strong connections between the clusters indicate that these areas are tightly interwoven in the literature and central to healthcare research.

Figure 3: Co-Occurrence Analysis of Keywords



Source: Generated using VOSviewer

Bibliographic Coupling

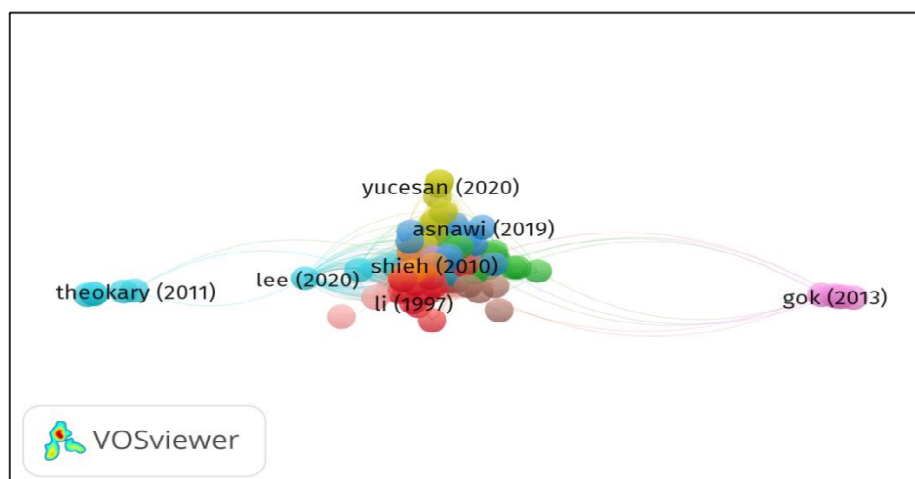
A bibliographic coupling analysis was conducted to examine thematic similarities among highly cited documents in the field of hospital service quality (Figure 4). The analysis includes 99 documents that meet the threshold of having received at least 20 citations. Bibliographic coupling occurs when two documents cite the same third source, indicating a potential alignment in research themes or theoretical foundations. In the resulting network, each node represents a document, typically identified by its author and year of publication, while the edges illustrate the strength of coupling based on shared references.

At the center of the network lies a prominent cluster anchored by Shieh (2010). Closely associated with it are documents such as Asnawi (2019), Lee (2020), and Li (1997). This grouping forms a dense core, suggesting a well-defined research thread that spans across time, with Li (1997) possibly serving as a foundational work for the more recent studies. Their close proximity suggests that they share similar topics or have collectively shaped the direction of hospital service quality studies.

In contrast, Yucesan (2020) appears as a distinct node positioned away from the central cluster. Its weaker coupling with the rest of the network suggests that it represents a relatively independent research trajectory or a newer contribution that does not yet share many references with the dominant group.

Similarly, Gok (2013) is located at the periphery of the network, connected by a single weak tie to the central cluster. Its relative isolation may reflect a unique perspective or methodology that distinguishes it from more closely coupled works. Theokary (2011) also occupies a peripheral position, indicating a distinct citation pattern, potentially rooted in an alternative theoretical framework or domain focus. The network, therefore, reveals a core set of foundational studies that heavily influence ongoing work, surrounded by a few peripheral but notable publications that contribute distinct perspectives or innovations. The bibliometric relationships reveal that the domain is mature, collaborative, and methodologically sophisticated, enriched by foundational theories and continuously evolving through applied, technology-driven, and cross-national lenses. The inclusion of 99 documents with substantial citation counts highlights the significance of these works within the broader literature, while the network structure itself offers insights into the intellectual coherence and diversity within the field.

Figure 4: Bibliographic Coupling among the Journals



Source: Generated using VOSviewer

Co-Citation Analysis:

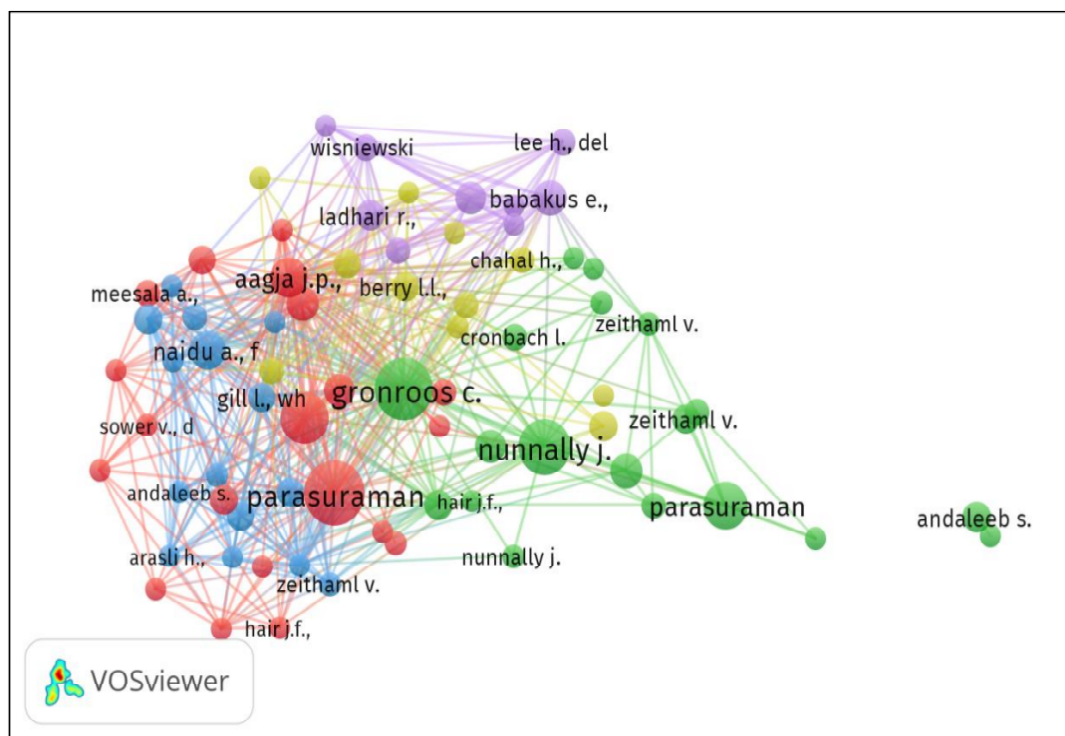
A co-citation analysis was conducted on hospital service quality research (Figure 5). The analysis includes 74 cited references, each cited at least five times within the dataset.

The central and most prominent grouping in the network is the Gronroos Cluster, anchored by the seminal works of Gronroos C., Parasuraman, Nunnally J., and Zeithaml V. This cluster, located at the core of the diagram, is characterized by dense co-citation patterns, especially within service quality and customer satisfaction literature. The frequency with which these authors are cited together indicates their foundational role in shaping theoretical and empirical approaches in the domain. Another substantial grouping is the Andaleeb Cluster, which features a wide array of authors such as Andaleeb S., Meesala A., Naidu A., Gill L., etc. This cluster is marked by strong connections and widespread co-citation, suggesting a broad and multifaceted influence. The central position of Andaleeb highlights the significance of this author's work in integrating service quality frameworks with healthcare delivery research.

A more distinct grouping is the Cronbach Cluster, centered on Cronbach L., and including authors such as Zeithaml V., Hair J.F., Arasli H., Sower V., and Parasuraman. This cluster appears to align more closely with methodological contributions, particularly those related to scale development and reliability analysis. Overall, the co-citation network reveals a concentration of influential references that collectively form the conceptual and methodological backbone of hospital service

quality research by a select group of influential scholars, around whom various research communities and citation practices are organized.

Figure 5: Co-Citation Analysis of Cited References



Source:Generated using VOSviewer

Conclusion

The present bibliometric study provides a comprehensive overview of the research landscape on hospital service quality, revealing key patterns, contributors, and thematic developments. The analysis of publication trends shows a steady growth in research interest since 1990s, with a significant surge in output from 2014 onward, indicating sustained academic engagement in this domain. Journals like the International Journal of Health Care Quality Assurance and BMC Health Services Research have emerged as leading platforms for disseminating related studies. At the author level, researchers such as Zarei, E. and Andaleeb, S.S. have made substantial contributions, while the United States, India, and Iran dominate in terms of national research productivity. Influential studies particularly those using established

models like SERVQUAL or advanced methods like DEMATEL (Decision-Making Trial and Evaluation Laboratory) have significantly shaped the knowledge base in the field of service quality of hospital.

Network analyses further enrich the understanding of this domain. Co-authorship mapping revealed four key collaborative clusters, suggesting a mix of well-established research groups. Keyword co-occurrence analysis highlighted five dominant thematic clusters, spanning human-centered care, healthcare delivery, research methodologies, healthcare systems, and economic aspects. Bibliographic coupling illuminated strong intellectual alignment among certain documents with core clusters anchored by foundational works. The co-citation network highlights a strong conceptual foundation in hospital service quality research, anchored by seminal service quality theories and supported by influential empirical and methodological works.

Future exploration in hospital service quality research should focus on interdisciplinary approach integrating digital health technologies, behavioral sciences, health economics, workforce education and mixed-method approaches to holistically improve patient care and operational efficiency. The present study points to integration of Digital Health and Artificial Intelligence, Patient Experience and Behavioral Sciences, Health Economics and Policy Research, Healthcare Workforce Education and Training, Systems Engineering and Quality Improvement, etc.

Overall, the findings point to a mature yet evolving field, characterized by diverse themes, international participation, and interconnected scholarly contributions. This study not only maps the current state of research on hospital service quality but also identifies key factors, trends, and areas for future exploration.

Limitations of the Study

1. The research is based exclusively on Scopus-indexed journal articles, excluding works from other databases, which could limit the global representation and diversity.
2. The structured keyword approach might exclude many relevant documents or interdisciplinary works.
3. Inclusion of some more bibliometric methods may enhance the qualitative dimensions of research.
4. The study focuses up to publications from 2024 and may not fully reflect the very latest advances.

Scope for Future Research

1. Future studies may focus on interdisciplinary approach integrating digital health technologies, behavioral sciences, health economics, etc.
2. Studies relating to model development and validation may be conducted to reflect evolving hospital service quality constructs.
3. Conducting studies specific to certain regions to understand disparities and suggest quality improvements.

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The Department aspires to be an eminent Institution in the field of Education and research, and to engage in building and promoting contemporary Management knowledge, developing Management skills and inculcating professional attitude and motivating individuals of North-East in particular and of other parts of the country in general. The department strives for preparing the students to assume positions of responsibility and leadership in all walks of mercantile endeavors. This spirit is very much enshrined in its beautifully crafted mission. The Department is established with an objective to provide the students with an appropriate combination of conceptual framework and practical insights into managerial challenges and business opportunities for grooming Managers of the 21st Century. The competency and dedication of the teachers, the constant upgradation of the syllabus, the level and quality of inputs, performance levels are some of the basic determinants putting litmus to our performance. The Department offers two MBA courses, a Certificate Program in Entrepreneurship & Startups, and Ph.D. The Department strives towards integrating continuously the industry, academics and professionals towards updating students with the contemporary challenges with a holistic perspective. In its continuous effort to enrich the management discipline, the department has introduced IJAMR with the following objectives:

Objectives of IJAMR

- To promote empirical research in various functional areas of management.
- To provide a platform to researchers/practitioners of management and its allied areas to disseminate new management models and theories.
- To develop and reorient management thought process from inter and trans-disciplinary perspective.
- To encourage research towards developing culture and nation specific management interventions.

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