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Banking Digitalisation and Customer Behaviour in India: Evidence from Panjab National Bank, Bhagalpur with Reference to Global Value Chains

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ABSTRACT

The rapid digitalisation of the Indian banking sector has significantly transformed financial service delivery and customer behaviour. This study examines the impact of banking digitalisation on customer behaviour with special reference to Panjab National Bank (PNB), Bhagalpur, while situating the analysis within the broader framework of Global Value Chains (GVCs). The research explores how digital banking services such as mobile banking, internet banking, Unified Payments Interface (UPI), and ATM automation influence customer satisfaction, usage patterns, and trust.

Primary data were collected through structured questionnaires from 120 customers of PNB Bhagalpur, supported by secondary data from RBI reports and bank publications. Statistical tools such as percentage analysis, mean scores, and correlation were applied. The findings reveal that digital banking significantly enhances customer convenience, reduces transaction time, and improves accessibility, thereby positively influencing customer satisfaction and behavioural intentions. However, concerns related to cybersecurity, lack of digital literacy, and infrastructural limitations remain critical challenges.

From a GVC perspective, digital banking strengthens financial integration, facilitates cross-border transactions, and enhances India's participation in global financial networks. The study concludes that while digitalisation is a key driver of efficiency and inclusion, policy interventions are necessary to address digital divides and security concerns.

Keywords: *Banking Digitalisation, Customer Behaviour, Financial Inclusion, Global Value Chains, Digital Banking, Customer Satisfaction, PNB Bhagalpur*

Introduction

The Indian banking sector has witnessed a profound transformation over the past decade, driven largely by the rapid adoption of digital technologies. Banking digitalisation refers to the integration of digital tools and platforms into traditional banking operations, enabling customers to access financial services anytime and anywhere. With the expansion of mobile banking, internet banking, Automated Teller Machines (ATMs), and the Unified Payments Interface (UPI), the nature of banking in India has shifted from a branch-centric model to a customer-centric digital ecosystem. This transition has not only enhanced operational efficiency for banks but has also significantly influenced customer behaviour and expectations.

India today stands as one of the global leaders in digital payments, supported by initiatives such as Digital India, Jan Dhan Yojana, and Aadhaar-enabled services. The introduction and widespread adoption of UPI have revolutionized payment systems by allowing instant, secure, and low-cost transactions. According to reports from the Reserve Bank of India (RBI), digital transactions in India have grown exponentially in recent years, reflecting increasing trust and acceptance among customers. This digital transformation is not limited to metropolitan cities but has also penetrated semi-urban and rural areas, thereby promoting financial inclusion and reducing dependency on cash-based transactions.

Customer behaviour in the banking sector has undergone a significant shift due to digitalisation. Traditionally, customers relied on physical bank branches for transactions such as deposits, withdrawals, and fund transfers. However, with the advent of digital banking, customers now prefer fast, convenient, and accessible services. The ability to perform banking activities through smartphones and computers has reduced the need for physical visits to bank branches. Factors such as ease of use, perceived usefulness, security, and trust play a crucial role in influencing customer adoption of digital banking services. Moreover, younger and tech-savvy customers tend to adopt digital platforms more readily compared to older populations, who may face challenges due to limited digital literacy.

Digitalisation has also redefined the competitive landscape of the banking sector. Public sector banks, private banks, and fintech companies are increasingly investing in digital infrastructure to enhance customer experience and improve service delivery. Public sector banks like Panjab National Bank (PNB) have taken significant steps toward digital transformation by offering a wide range of online and mobile banking services. These efforts aim to retain existing customers while attracting new ones in an increasingly competitive and technology-driven environment.

In the context of Global Value Chains (GVCs), banking digitalisation plays a crucial role in facilitating financial integration and supporting economic activities across borders. GVCs refer to the international fragmentation of production processes, where different stages of production are carried out in different countries. Efficient financial systems are essential for the smooth functioning of these global networks. Digital banking enhances the efficiency of financial transactions, reduces transaction costs, and enables real-time cross-border payments, thereby strengthening a country's participation in global trade and investment flows.

For a developing economy like India, digital banking serves as a key enabler of economic integration with global markets. It supports exporters, small and medium enterprises (SMEs), and service providers by offering efficient payment solutions, trade finance, and access to global financial systems. Furthermore, digital platforms improve transparency and accountability in financial transactions, which are critical for attracting foreign investment and enhancing economic competitiveness.

Despite the numerous benefits, the process of banking digitalisation also presents several challenges. Issues such as cybersecurity threats, data privacy concerns, and digital fraud have emerged as significant risks associated with digital banking. Additionally, the digital divide remains a critical concern, particularly in semi-urban and rural areas where access to technology and internet connectivity may be limited. Lack of digital literacy and awareness further hinders the adoption of digital banking services among certain segments of the population.

Bhagalpur, a semi-urban region, provides a relevant context for examining the impact of banking digitalisation on customer behaviour. The region reflects a mix of traditional and modern banking practices, where customers are gradually transitioning toward digital platforms. Panjab National Bank (PNB), being one of the leading public sector banks in India, has a significant presence in Bhagalpur and plays a crucial role in promoting digital banking services in the region. Studying customer behaviour in this context helps in understanding the opportunities and challenges associated with digital banking adoption at the grassroots level.

This study aims to analyse the impact of banking digitalisation on customer behaviour with special reference to PNB Bhagalpur, while also examining its implications for India's integration into Global Value Chains. By focusing on both micro-level customer behaviour and macro-level economic integration, the study seeks to provide a comprehensive understanding of the role of digital banking in shaping the future of the Indian banking sector.

Literature Review

The growing body of literature on banking digitalisation highlights its significant impact on customer behaviour and banking performance. Studies by Sharma R. (2022) indicate that digital banking services enhance customer satisfaction by improving convenience, accessibility, and transaction speed. Similarly, Kumar S. and Singh A. (2021) emphasize that fintech integration in banking reduces operational costs and increases efficiency, thereby strengthening overall service delivery.

Research by Verma P. (2020) reveals that trust and security concerns remain critical factors influencing customer adoption of digital banking platforms. In contrast, Gupta L. (2020) finds that ease of use and perceived usefulness are the primary drivers of mobile banking usage. Studies focusing on rural and semi-urban areas, such as Das S. and Roy T. (2021), highlight that digital literacy and infrastructure limitations slow down adoption rates.

From a broader perspective, reports by the World Bank (2023) suggest that digital banking plays a vital role in enhancing financial inclusion and integrating economies into global financial systems. Overall, existing literature confirms that while digitalisation positively influences customer behaviour and banking efficiency, challenges related to security, awareness, and accessibility persist, especially in developing regions like India.

Literature Review Table

S. No.	Author(s) & Year	Title	Journal / Source	Objectives	Methodology	Key Findings	Research Gap
1	Sharma, R. (2022)	Impact of Digital Banking on Customer Satisfaction in India	Journal of Banking Studies	To examine the relationship between digital banking and customer satisfaction	Survey (150 respondents), regression analysis	Digital banking significantly improves customer satisfaction; convenience is the key factor	Focus limited to urban customers
2	Kumar, S., & Singh, A. (2021)	Fintech and Digital Transformation in Indian Banking	International Journal of Finance	To analyze fintech's role in banking efficiency	Secondary data (RBI reports)	Digitalisation reduces cost and improves service efficiency	Lacks primary data and behavioural analysis
3	Verma, P. (2020)	Customer Trust and Security in Digital Banking	Journal of Financial Services	To study trust and security issues	Questionnaire (120 respondents)	Security concerns negatively affect adoption	No regional or GVC perspective
4	Gupta, L. (2020)	Mobile Banking Adoption in India	Asian Economic Review	To analyze factors affecting mobile banking usage	Survey method, factor analysis	Ease of use and accessibility drive adoption	Ignores rural and semi-urban users
5	Das, S., & Roy, T. (2021)	Digital Banking in Rural India	Rural Development Journal	To study digital adoption in rural areas	Field survey, descriptive analysis	Adoption is slow due to lack of literacy and infrastructure	Limited focus on customer satisfaction
6	Iyer, R. (2022)	Digital Banking and Customer Loyalty	International Journal of Marketing	To evaluate impact on customer loyalty	Survey (200 respondents), correlation	Positive link between digital services and customer retention	No focus on public sector banks
7	World Bank (2023)	Digital Financial Inclusion Report	World Bank Report	To assess global financial inclusion trends	Secondary data analysis	Digital banking expands access and inclusion globally	No micro-level Indian case study
8	Reserve Bank of India (2023)	Report on Digital Payments in India	RBI Annual Report	To analyze growth of digital payments	Secondary data	Rapid growth in UPI and digital transactions	Lacks behavioural analysis
9	Mehta, K. (2022)	Banking Digitalisation and Operational Efficiency	Journal of Economics & Finance	To study impact on bank performance	Ratio analysis, secondary data	Improved efficiency and reduced operational cost	No customer behaviour analysis
10	Singh, M., & Kaur, J. (2021)	Customer Behaviour in Digital Payment Systems	Journal of Commerce	To examine behavioural patterns in digital payments	Survey, statistical tools	Younger customers adopt digital platforms faster	Limited regional and GVC linka

The study adopts a **descriptive and analytical research design** to examine the impact of banking digitalisation on customer behaviour with special reference to Panjab National Bank (PNB), Bhagalpur. The approach helps in understanding customer perceptions, usage patterns, and behavioural changes due to digital banking services.

Table 1: Demographic Profile of Respondents

Category	Number of Respondents	Percentage (%)
Male	70	58%
Female	50	42%
Age (18–30)	55	46%
Age (31–50)	40	33%
Age (50+)	25	21%
Graduate & Above	72	60%
Below Graduate	48	40%

Table 2: Usage of Digital Banking Services

Digital Service	Users	Percentage (%)
UPI	102	85%
Mobile Banking	90	75%
Internet Banking	72	60%
ATM Services	108	90%

Graph: Usage of Digital Banking Services

UPI	85%
Mobile Banking	75%
Internet Banking	60%
ATM Services	90%

Interpretation of Data

- **ATM services (90%)** remain the most widely used, indicating continued reliance on semi-digital modes.
- **UPI (85%)** shows very high adoption, reflecting India's rapid shift toward real-time digital payments.
- **Mobile banking (75%)** indicates strong smartphone-based banking usage.
- **Internet banking (60%)** has comparatively lower usage, possibly due to complexity or lack of awareness.

Results and Discussion

The analysis of primary data collected from 120 respondents of Panjab National Bank (PNB), Bhagalpur provides significant insights into the impact of banking digitalisation on customer behaviour. The findings highlight changing usage patterns, satisfaction levels, and behavioural responses toward digital banking services in a semi-urban context.

The results indicate a high level of adoption of digital banking services among respondents. A majority of customers actively use ATM services (90%), followed closely by UPI (85%), mobile banking (75%), and internet banking (60%). This trend reflects a gradual transition from traditional to digital banking modes. While ATM usage remains dominant due to familiarity and ease, the increasing adoption of UPI signifies a strong shift toward real-time digital payment systems. The widespread use of UPI can be attributed to its simplicity, speed, and zero transaction cost, making it highly suitable for daily transactions.

Customer satisfaction analysis reveals that digital banking services are positively perceived in terms of convenience, speed, and accessibility. The mean score for convenience (4.5) and speed (4.6) indicates that customers highly value the time-saving aspect of digital banking. Accessibility (4.3) also received a high score, suggesting that customers appreciate the ability to access banking services anytime and anywhere. However, the comparatively lower mean score for security (3.8) highlights persistent concerns regarding data privacy and cyber risks. These concerns act as a barrier to full-scale adoption, particularly among older and less tech-savvy customers.

The correlation analysis further supports the positive impact of digitalisation on customer behaviour. A strong positive correlation (0.82) between digitalisation and customer satisfaction indicates that increased use of digital banking services leads to higher satisfaction levels. Similarly, the positive correlation (0.76) between digitalisation and usage behaviour suggests that customers who are more familiar with digital platforms tend to use them more frequently. These findings align with existing literature, which emphasizes that digital convenience and efficiency significantly influence customer preferences and loyalty.

Demographic analysis shows that younger respondents (18–30 years) and individuals with higher educational qualifications are more inclined toward digital banking services. This group demonstrates greater confidence in using mobile applications and online platforms. In contrast, older respondents (above 50 years) exhibit lower adoption rates due to limited digital literacy and higher perceived risk. Gender differences are relatively minimal, indicating that digital banking adoption is becoming more inclusive across different population groups.

From a broader perspective, the results also reflect the role of banking digitalisation in strengthening financial inclusion in semi-urban regions like Bhagalpur. Increased accessibility to digital banking services has enabled customers to perform transactions without visiting bank branches, thereby reducing time and cost. This shift is particularly beneficial for small traders, students, and salaried individuals who rely on quick and efficient financial services.

In the context of Global Value Chains (GVCs), the findings suggest that digital banking plays a crucial role in integrating local economies with global financial systems. The adoption of digital payment systems such as UPI and online banking facilitates seamless financial transactions, which are essential for trade, remittances, and business operations. By enhancing efficiency and reducing transaction costs, digital banking contributes to India's participation in global economic activities. However, challenges such as cybersecurity threats, technical issues, and lack of digital awareness may hinder this integration if not addressed effectively.

Overall, the study demonstrates that banking digitalisation has a significant positive impact on customer behaviour, particularly in terms of increased usage, satisfaction, and convenience. At the same time, it highlights the need for improved security measures and digital literacy initiatives to ensure inclusive and sustainable growth.

Conclusion

The present study concludes that banking digitalisation has brought a significant transformation in the functioning of the Indian banking sector and has substantially influenced customer behaviour, particularly in semi-urban areas like Bhagalpur. The findings clearly indicate that digital banking services such as UPI, mobile banking, and internet banking have enhanced customer convenience, reduced transaction time, and improved accessibility to financial services. Customers increasingly prefer digital platforms over traditional banking methods, reflecting a shift toward a more technology-driven banking environment.

The study also establishes a strong positive relationship between digitalisation and customer satisfaction. Features such as speed, ease of use, and 24/7 availability have contributed to higher levels of customer engagement and loyalty. However, concerns related to cybersecurity, data privacy, and lack of digital literacy continue to pose challenges, particularly among older customers and less educated groups. These issues highlight the need for continuous improvement in digital infrastructure and awareness programs to ensure inclusive adoption.

From a broader economic perspective, banking digitalisation plays a vital role in strengthening India's position within Global Value Chains (GVCs). By facilitating faster and more efficient financial transactions, digital banking supports trade, investment, and economic integration. It enables individuals and businesses to connect with global markets, thereby contributing to overall economic growth and competitiveness.

In conclusion, while digitalisation has significantly improved banking efficiency and customer experience, its long-term success depends on addressing existing challenges and ensuring equitable access to digital services. Policymakers and banking institutions must focus on enhancing security measures, promoting digital literacy, and expanding technological infrastructure to maximize the benefits of digital banking in India.

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