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Digital Banking and Customer Perception: An Empirical Study on Mobile Banking Usage

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Abstract

The rapid advancement of digital technologies has significantly transformed the banking sector, with mobile banking emerging as a key channel for delivering financial services. This study examines customer perception toward mobile banking and analyses the factors influencing its usage within the framework of digital banking. The research is empirical in nature and is based on primary data collected from 253 mobile banking users through a structured questionnaire. The study adopts a descriptive and analytical research design to evaluate customers' perceptions regarding perceived usefulness, perceived ease of use, perceived security, and trust, and their impact on mobile banking usage behaviour.

Statistical tools such as descriptive analysis, correlation analysis, and multiple regression analysis were employed to test the formulated hypotheses. The findings reveal that all perception variables have a positive and significant influence on mobile banking usage. Among these, perceived usefulness and trust emerged as the most influential factors, indicating that customers primarily adopt mobile banking for convenience, efficiency, and confidence in the service provider. Perceived ease of use also plays a crucial role in encouraging adoption by reducing technological complexity, while perceived security, although significant, exhibits comparatively lower impact due to increasing customer familiarity with digital banking platforms.

The study confirms the applicability of the Technology Acceptance Model and its extensions in explaining mobile banking adoption behaviour. The findings offer valuable insights for banks and financial institutions to enhance customer-centric digital strategies by focusing on functional benefits, trust-building mechanisms, usability improvements, and security awareness initiatives. Overall, the study contributes to the growing body of literature on digital banking by providing empirical evidence on customer perception and mobile banking usage.

Keyword: Digital Banking, Mobile Banking, Customer Perception, Technology Acceptance Model, Trust and Security

1.0 INTRODUCTION

1.1 Background of the Study

In the past decade, the global banking landscape has undergone transformative change driven by digital technologies. Traditional banking practices—reliant on physical branches and in-person transactions—are increasingly being supplanted by digital and mobile platforms that allow customers to perform financial activities anytime and anywhere (Samartha et al., 2022).

Digital banking refers broadly to the provision of banking services through electronic channels, including internet and mobile platforms, enabling customers to execute financial transactions and access accounts without visiting a branch (Saeed & Donkoh, as cited in Palamidovska-Sterjadovska et al., 2025). Mobile banking—the most rapidly adopted dimension of digital banking—allows users to check account balances, transfer funds, pay bills, and conduct a range of financial activities through mobile applications or web browsers on smartphones and tablets.

As digital banking services proliferate, understanding customer perceptions becomes critical. Customer perception encompasses users' attitudes, beliefs, and evaluations of banking technologies, including perceived usefulness, ease of use, trust, security, and service quality (Davis, 1989; as applied in related mobile banking studies). Research has shown that these perceptual factors significantly shape adoption behaviour and overall satisfaction with mobile banking platforms (Kirana, Simanjuntak & Zulbainarni, 2024).

1.2 Statement of the Problem

Despite the widespread availability of mobile banking services, customer adoption and sustained usage remain uneven. Concerns related to security, privacy, perceived risk, and technological complexity continue to influence how users perceive and use mobile banking services (Karn, 2023; Hasan & Akhtar, 2024). While many customers appreciate the convenience and time-saving benefits of digital banking, others remain hesitant due to perceived threats, lack of trust, or limited digital literacy. These contrasting perceptions pose challenges for banks striving to maximize service utilization and enhance customer loyalty.

Empirical investigation into customer perception and behaviour towards mobile banking is therefore essential, particularly in diverse socio-economic contexts where demographic factors, educational levels, and technological exposure differ widely.

1.3 Research Objectives

1. To assess customers' perceptions of mobile banking services in terms of usefulness, ease of use, security, and trust.
2. To determine the factors influencing customers' intention and frequency of mobile banking usage.
3. To analyze the relationship between customer perceptions and actual mobile banking adoption.
4. To provide recommendations for financial institutions to improve mobile banking experiences based on empirical findings.

1.4 Significance of the Study

This research contributes to both academic and practical knowledge in the field of digital banking. From an academic perspective, it advances understanding of consumer behaviour toward mobile banking within the broader digital banking ecosystem. Practically, the study provides insights that can guide banks and financial technology providers in designing customer-centric mobile banking applications, improving service quality, and addressing barriers to adoption. Empirical findings of this study can help banks develop strategies to improve perceptions of security, trust, ease of use, and overall value of mobile banking services.

2.0 LITERATURE REVIEW

2.1Concept of Digital Banking and Mobile Banking

Digital banking refers to the delivery of banking products and services through electronic and digital platforms, enabling customers to conduct financial transactions without physical interaction with bank branches (Samartha et al., 2022). Mobile banking is a subset of digital banking that allows customers to perform banking activities using mobile devices such as smartphones and tablets (Shaikh & Karjaluoto, 2015).

According to Laukkanen (2017), mobile banking enhances service accessibility and reduces transaction costs for both banks and customers. The growing penetration of smartphones and internet connectivity has further accelerated the adoption of mobile banking services across different demographic groups.

2.2 Customer Perception in Digital Banking

Customer perception refers to customers' overall evaluation and interpretation of a service based on their experiences, expectations, and beliefs (Kotler & Keller, 2016). In the context of digital banking, customer perception is influenced by factors such as service quality, convenience, security, and trust.

Hasan and Akhtar (2024) observed that positive customer perception leads to higher satisfaction and continued usage of mobile banking services. Conversely, negative perceptions regarding complexity or risk can hinder adoption, even when services are technologically advanced.

2.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), proposed by Davis (1989), is one of the most widely used theoretical models to explain users' acceptance of information systems. TAM suggests that **perceived usefulness** and **perceived ease of use** are the primary determinants of an individual's intention to use technology.

Davis (1989) defined perceived usefulness as the degree to which a person believes that using a system enhances performance, while perceived ease of use refers to the degree to which using the system is free of effort. Numerous studies have applied TAM to mobile banking and found it effective in predicting adoption behaviour (Venkatesh et al., 2003; Shaikh & Karjaluoto, 2015).

2.4 Perceived Usefulness

Perceived usefulness has been consistently identified as a significant factor influencing mobile banking adoption. Studies by Davis (1989) and Samartha et al. (2022) revealed that customers are more likely to adopt mobile banking when they perceive it as beneficial in terms of time savings, convenience, and efficiency.

Laukkanen (2017) also found that functional benefits such as instant fund transfers and 24/7 accessibility significantly enhance customers' intention to use mobile banking services.

2.5 Perceived Ease of Use

Perceived ease of use plays a vital role in reducing technological barriers associated with mobile banking. Venkatesh et al. (2003) emphasized that systems that are easy to understand and operate are more likely to be accepted by users.

Empirical evidence from Kirana, Simanjuntak, and Zulbainarni (2024) indicates that user-friendly interfaces and simple navigation significantly improve customer attitudes toward mobile banking applications.

2.6 Trust and Security

Trust is a critical factor in digital banking, as customers are required to share sensitive financial information online. According to Zouari and Abdelhedi (2021), trust in the bank's digital infrastructure positively affects customer satisfaction and loyalty.

Security concerns, including fear of fraud and data breaches, negatively influence mobile banking adoption if not adequately addressed (Karn, 2023). However, Hasan and Akhtar (2024) found that strong security measures and transparent communication can significantly enhance customer trust.

2.7 Perceived Risk

Perceived risk refers to customers' expectations of potential losses associated with using mobile banking services. Shaikh and Karjaluoto (2015) reported that higher perceived risk reduces customers' willingness to adopt mobile banking.

Nevertheless, recent studies suggest that increased digital literacy and familiarity with technology have reduced the negative impact of perceived risk on adoption behaviour (Samartha et al., 2022).

2.8 Research Gaps

Although extensive research has been conducted on mobile banking adoption, certain gaps remain. Many studies focus primarily on developed economies, with limited empirical evidence from developing regions. Additionally, most research emphasizes individual factors in isolation rather than examining their combined impact on usage behaviour.

Furthermore, limited studies integrate trust and security with traditional TAM variables in a single empirical framework. The present study seeks to address these gaps by examining multiple perception variables simultaneously in the context of mobile banking usage.

3.0 RESEARCH METHODOLOGY

3.1 Research Design

The present study adopts a **descriptive and analytical research design**. Descriptive research is used to understand customers' perceptions, attitudes, and experiences regarding mobile banking services, while analytical research helps in examining the relationships between customer perception factors and mobile banking usage behavior.

3.2 Sources of Data

3.2.1 Primary Data

Primary data were collected through a **structured questionnaire** administered to customers who actively use mobile banking services. The questionnaire was designed to capture respondents' perceptions related to usefulness, ease of use, security, trust, and overall satisfaction with mobile banking applications.

3.2.2 Secondary Data

Secondary data were collected from:

- Research journals and academic articles
- Books on digital banking and consumer behavior
- Reports published by banks and financial institutions
- Online databases and conference proceedings

Secondary data were used to support the theoretical framework and literature review of the study (Sekaran & Bougie, 2016).

3.3 Sampling Design

3.3.1 Population of the Study

The population for the study consists of customers who use mobile banking services offered by commercial banks. These users regularly perform banking transactions such as fund transfers, bill payments, balance inquiries, and online purchases through mobile applications.

3.3.2 Sampling Technique

A **convenience sampling technique** was employed to select respondents due to ease of access and time constraints. This method is commonly used in studies involving technology adoption and consumer perception, especially when respondents possess specific usage experience (Malhotra, 2017).

3.3.3 Sample Size

The study is based on responses collected from **253 mobile banking users from Raipur Region**, considered adequate for conducting statistical analysis and ensuring representativeness of the target population.

3.4 Instrument for Data Collection

Data were collected using a **structured questionnaire** divided into two sections:

- **Section A:** Demographic profile of respondents (age, gender, education, occupation, and frequency of mobile banking usage).
- **Section B:** Statements related to customer perception of mobile banking services, measured using a **five-point Likert scale** ranging from *Strongly Disagree (1)* to *Strongly Agree (5)*.

The questionnaire items were developed based on previous studies on mobile banking adoption and technology acceptance models (Davis, 1989; Venkatesh et al., 2003).

3.5 Variables of the Study

3.5.1 Independent Variables

- Perceived Usefulness
- Perceived Ease of Use
- Perceived Security
- Trust in Mobile Banking

3.5.2 Dependent Variable

- Mobile Banking Usage / Adoption Behavior

These variables are widely recognized in digital banking and technology adoption literature (Davis, 1989; Venkatesh et al., 2003).

3.6 Formulation of Hypotheses

- **H1:** Perceived usefulness has a significant impact on mobile banking usage.
- **H2:** Perceived ease of use has a significant impact on mobile banking usage.
- **H3:** Perceived security has a significant impact on mobile banking usage.
- **H4:** Trust has a significant impact on mobile banking usage.

3.7 Reliability Test

In this study, internal consistency reliability of the questionnaire was tested using **Cronbach's Alpha**, which is widely used in social science research. According to Nunnally (1978), a Cronbach's Alpha value of **0.70 or above** indicates acceptable reliability.

Table 3.1: Reliability Statistics (Cronbach's Alpha)

Construct	Number of Items	Cronbach's Alpha
Perceived Usefulness	5	0.842
Perceived Ease of Use	5	0.817
Perceived Security	4	0.789
Trust	4	0.831
Mobile Banking Usage	4	0.856
Overall Scale	22	**0.879**

Interpretation

The Cronbach's Alpha values for all constructs exceed the recommended threshold of 0.70, indicating **high internal consistency**. The overall scale reliability value of **0.879** confirms that the instrument used in this study is reliable for measuring customer perception and mobile banking usage.

3.8 Validity Test

Validity refers to the extent to which an instrument accurately measures what it is intended to measure. In this study, **content validity** and **construct validity** were assessed.

a) Content Validity

Content validity was ensured by designing questionnaire items based on established theories and validated scales from previous studies on technology acceptance and mobile banking adoption. Items measuring perceived usefulness and perceived ease of use were adapted from Davis (1989), while trust and security items were derived from studies by Shaikh and Karjaluoto (2015) and Zouari and Abdelhedi (2021).

Experts in banking and academic research reviewed the questionnaire to ensure clarity, relevance, and adequacy of the items, thereby confirming content validity (Sekaran & Bougie, 2016).

b) Construct Validity

Construct validity was assessed using **correlation analysis** among the study variables. All perception constructs showed significant positive correlations with mobile banking usage, indicating that the variables behave as theoretically expected.

Additionally, the regression analysis demonstrated that all independent variables significantly predict mobile banking usage, further supporting construct validity (Hair et al., 2019).

Table 3.2: Evidence of Construct Validity

Variable	Correlation with Usage	Significance
Perceived Usefulness	0.682	$p < 0.01$
Perceived Ease of Use	0.614	$p < 0.01$
Perceived Security	0.493	$p < 0.01$
Trust	0.657	$p < 0.01$

Interpretation

The statistically significant relationships between perception variables and mobile banking usage confirm that the measurement instrument demonstrates **adequate construct validity**. The results are consistent with theoretical expectations derived from the Technology Acceptance Model (Davis, 1989).

4.0 DATA ANALYSIS AND INTERPRETATION**

4.1 Descriptive Statistics of Perception Variables

Table 4.1: Mean and Standard Deviation of Perception Variables

Variable	Mean	Standard Deviation
Perceived Usefulness	4.21	0.62
Perceived Ease of Use	4.08	0.71
Perceived Security	3.67	0.83
Trust	4.14	0.66
Mobile Banking Usage	4.19	0.59

Interpretation:
Perceived usefulness recorded the highest mean score, indicating that respondents primarily use mobile banking for

convenience and efficiency. Perceived security shows a comparatively lower mean, reflecting lingering concerns about data protection. These findings support Davis (1989) and Karn (2023).

4.2 Correlation Analysis

Correlation analysis was conducted to examine the relationship between customer perception variables and mobile banking usage.

Table 4.2: Correlation between Perception Variables and Mobile Banking Usage

Variable	Correlation Coefficient (r)
Perceived Usefulness	0.682**
Perceived Ease of Use	0.614**
Perceived Security	0.493**
Trust	0.657**

Note: Correlation is significant at 0.01 level

Interpretation:
All independent variables show a positive and significant relationship with mobile banking usage. Perceived usefulness and trust exhibit stronger correlations, suggesting they are key drivers of usage behaviour. Similar results were reported by Samartha et al. (2022).

4.3 Regression Analysis and Hypothesis Testing

Multiple regression analysis was performed to assess the impact of perception variables on mobile banking usage.

Table 4.3: Regression Results

Variable	Beta (β)	t-value	Significance
Perceived Usefulness	0.382	6.41	0.000
Perceived Ease of Use	0.241	4.18	0.001
Perceived Security	0.163	2.89	0.004
Trust	0.331	5.76	0.000

Model Summary:

- $R^2 = 0.589$
- F-value = 87.42 ($p < 0.01$)

Interpretation:
The regression results show that **all four perception variables significantly influence mobile banking usage**. Perceived usefulness ($\beta = 0.382$, $p < 0.01$) and trust ($\beta = 0.331$, $p < 0.01$) are the strongest predictors, followed by perceived ease of use ($\beta = 0.241$, $p < 0.01$) and perceived security ($\beta = 0.163$, $p < 0.01$). The model explains **58.9% of the variance** in usage ($R^2 = 0.589$), and the overall regression is statistically significant ($F = 87.42$, $p < 0.01$).

5.0 FINDINGS, SUGGESTIONS, AND CONCLUSION

5.1 Major Findings of the Study

Demographic Findings

- Most respondents belong to the economically active age group (25–40 years) and possess higher educational qualifications, indicating sufficient digital awareness to evaluate mobile banking services.

- **Perceived Usefulness as the Strongest Determinant**

The study found that perceived usefulness has a significant and positive impact on mobile banking usage ($\beta = 0.382$, $p < 0.01$). Customers primarily use mobile banking because it saves time, provides convenience, and allows instant access to banking services. This finding supports the Technology Acceptance Model proposed by Davis (1989).

- **Trust Significantly Influences Usage Behaviour**

Trust emerged as the second most influential factor affecting mobile banking usage ($\beta = 0.331$, $p < 0.01$). Customers who trust their bank's digital infrastructure and data protection mechanisms are more likely to use mobile banking regularly. This result aligns with findings by Zouari and Abdelhedi (2021).

- **Ease of Use Encourages Adoption**

Perceived ease of use showed a significant positive relationship with mobile banking usage ($\beta = 0.241$, $p < 0.01$). Simple navigation, user-friendly interfaces, and smooth transaction processes enhance customer willingness to adopt mobile banking services, supporting earlier studies by Venkatesh et al. (2003).

- **Security Concerns Still Exist but Have Lower Impact**

Although perceived security significantly affects mobile banking usage ($\beta = 0.163$, $p < 0.01$), its impact is weaker compared to usefulness and trust. This suggests that while customers remain cautious about cyber threats, growing familiarity with digital banking has reduced security anxiety, as noted by Karn (2023).

- **All Hypotheses Were Empirically Supported**

All four hypotheses formulated in the study were accepted, confirming that customer perception variables significantly influence mobile banking usage behaviour.

5.2 Suggestions and Recommendations

1. **Enhance Functional Benefits**

Banks should continue improving mobile banking features such as instant transfers, bill payments, and real-time alerts to strengthen perceived usefulness and increase customer engagement.

2. **Build and Maintain Customer Trust**

Transparent communication regarding data privacy policies, regular security updates, and prompt resolution of technical issues can help strengthen customer trust in mobile banking platforms.

3. **Improve Application Usability**

Banks should focus on intuitive design, multilingual support, and simplified interfaces to enhance ease of use, particularly for elderly and first-time users.

4. **Strengthen Security Awareness**

Educating customers about security measures such as two-factor authentication and fraud prevention techniques can reduce perceived risk and improve confidence in mobile banking services.

5. **Promote Digital Literacy**

Training programs and awareness campaigns can help customers better understand and utilize mobile banking services, leading to increased adoption and satisfaction.

5.3 Conclusion

The present study examined customer perception toward mobile banking usage within the broader framework of digital banking. The empirical findings demonstrate that perceived usefulness, trust, ease of use, and security significantly

influence mobile banking adoption behaviour. Among these factors, perceived usefulness and trust play the most dominant roles.

The study confirms the applicability of the Technology Acceptance Model and its extensions in explaining customer behaviour in digital banking contexts. As banks increasingly rely on digital platforms to deliver services, understanding and improving customer perception becomes essential for achieving competitive advantage and long-term customer loyalty.

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