
A Study Of Customer Satisfaction And Perception Towards Cashless Banking Services In Kanyakumari District

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ABSTRACT

Cashless banking services have become an integral part of the modern banking system by offering customers convenient, secure, and efficient alternatives to traditional cash-based transactions. The rapid growth of digital technologies, increasing smartphone usage, and the expansion of internet connectivity have significantly accelerated the adoption of cashless banking services such as Unified Payments Interface (UPI), mobile banking, internet banking, debit and credit cards, electronic wallets, NEFT, RTGS, and IMPS. In this context, the present study aims to examine the level of customer satisfaction and perception towards cashless banking services in Kanyakumari District. The specific objectives of the study are to assess customer satisfaction, identify the factors influencing customer perception, analyse the relationship between demographic variables and customer satisfaction, and provide suitable suggestions for improving cashless banking services. The study is descriptive in nature and is based on both primary and secondary data. Primary data were collected from 120 respondents using a structured questionnaire through the convenience sampling technique. The collected data were analysed using the Statistical Package for the Social Sciences (SPSS). Percentage analysis was used to analyse the demographic profile of the respondents, while Mean and Standard Deviation, One Sample t-test, Exploratory Factor Analysis, Multiple Linear Regression Analysis, Independent Sample t-test, and One-Way ANOVA were employed to test the objectives of the study.

The findings reveal that customers are generally highly satisfied with cashless banking services. Convenience, security, and service efficiency emerged as the major factors influencing customer perception, with convenience exerting the strongest impact. The study also found that age has a significant influence on customer satisfaction, whereas gender does not show a significant difference. UPI was identified as the most preferred mode of cashless banking among the respondents. The study concludes that continuous technological innovation, enhanced security measures, efficient customer support, and digital financial literacy programmes are essential for improving customer satisfaction and strengthening the adoption of cashless banking services..

Keywords: Cashless Banking, Customer Satisfaction, Customer Perception, Digital Payments, UPI, Mobile Banking, SPSS.

INTRODUCTION

The banking sector has undergone a remarkable transformation with the rapid advancement of information and communication technology. Traditional banking methods that relied heavily on cash transactions and manual processes have gradually shifted toward digital and cashless banking systems. Cashless banking refers to financial transactions conducted through electronic modes without the direct use of physical currency. Services such as debit cards, credit cards, internet banking, mobile banking, Unified Payments Interface (UPI), electronic wallets, QR code payments, National Electronic Funds Transfer (NEFT), Real Time Gross Settlement (RTGS), and Immediate Payment Service (IMPS) have become integral components of the modern banking ecosystem. These services provide customers with greater convenience, speed, security, and accessibility in managing their financial activities.

The adoption of cashless banking has gained significant momentum in recent years due to increasing smartphone penetration, affordable internet connectivity, government initiatives promoting digital payments, and the expansion of digital financial infrastructure. The Digital India initiative, financial inclusion programmes, and the introduction of innovative payment platforms have encouraged individuals and businesses to embrace cashless transactions. Furthermore, the COVID-19 pandemic accelerated the use of digital payment systems as consumers preferred contactless transactions to reduce physical interaction, thereby strengthening the acceptance of cashless banking services across various segments of society.

Customer satisfaction plays a vital role in determining the success and sustainability of cashless banking services. Satisfied customers are more likely to continue using digital banking platforms, recommend them to others, and develop long-term relationships with their banks. Customer satisfaction is influenced by several factors, including ease of use, transaction speed, security, reliability, service quality, accessibility, convenience, responsiveness of customer support, and overall user experience. Banks that consistently provide efficient and secure digital banking services are better positioned to retain customers and gain a competitive advantage in an increasingly technology-driven financial market.

Customer perception is another important aspect that influences the adoption and continued use of cashless banking services. Perception reflects customers' beliefs, attitudes, expectations, and experiences regarding digital banking platforms. Positive perceptions regarding security, trustworthiness, convenience, and usefulness encourage greater adoption of cashless payment methods, whereas concerns related to cyber fraud, privacy risks, technical failures, hidden charges, and lack of digital literacy may discourage users from fully embracing these services. Understanding customer perception enables banks to identify customer expectations and address existing challenges in delivering superior digital banking experiences.

Although cashless banking offers numerous benefits, several challenges continue to affect customer satisfaction and perception. Security concerns, phishing attacks, internet connectivity issues, system downtime, transaction failures, limited digital awareness among certain population groups, and resistance to technological change remain significant barriers to widespread adoption. Continuous technological innovation, customer education, improved cybersecurity measures, and responsive customer service are therefore essential to enhance confidence in digital banking services.

In today's highly competitive banking environment, measuring customer satisfaction and understanding customer perception have become essential for banks seeking to improve service quality and strengthen customer relationships. The findings of such studies provide valuable insights into customer preferences, expectations, and behavioural patterns, enabling financial institutions to formulate effective strategies for enhancing digital banking services. Therefore, a study on customer satisfaction and perception towards cashless banking services contributes to a better understanding of the factors influencing customer acceptance and provides practical recommendations for improving the quality, efficiency, and effectiveness of cashless banking systems.

REVIEW OF LITERATURE

Ramesh and Priya (2023), in their study titled "Customer Satisfaction towards Cashless Banking Services in India," examined the level of customer satisfaction with various cashless banking services such as UPI, mobile banking, internet banking, and debit card transactions. The study revealed that convenience, transaction speed, and ease of accessibility significantly influenced customer satisfaction. Customers appreciated the availability of banking services at any time and from any location. However, concerns regarding cybersecurity threats, transaction failures, and technical glitches negatively affected overall satisfaction. The researchers observed that digital literacy and trust in banking technology played an important role in encouraging the continued use of cashless banking services. They also found that younger customers exhibited a higher level of acceptance than older users. The study emphasized the importance of strengthening security measures, improving customer support, and enhancing user-friendly digital platforms. It concluded that banks should continuously upgrade their technological infrastructure and provide awareness programmes to improve customer confidence and satisfaction with cashless banking services.

Kumar and Singh (2023), in their study titled "Perception of Consumers towards Digital Payment Systems," investigated customers' perceptions regarding the adoption of digital payment methods across different demographic groups. The study identified perceived usefulness, convenience, security, and trust as the major factors influencing customer perception. It found that customers with greater technological awareness were more willing to adopt cashless payment methods. The researchers observed that mobile banking and UPI were the most

preferred payment options due to their simplicity and speed. Despite the growing popularity of digital payments, respondents expressed concerns about fraud, privacy risks, and network-related issues. The study recommended that banks focus on educating customers about safe digital banking practices and strengthen cybersecurity measures. It concluded that positive customer perception is essential for increasing the adoption of cashless banking services and sustaining long-term digital banking growth.

Joseph and Thomas (2023), in their study titled “Factors Influencing Customer Satisfaction with Electronic Banking Services,” analysed the relationship between service quality dimensions and customer satisfaction in electronic banking. The findings indicated that reliability, responsiveness, security, transaction accuracy, and ease of use had a significant positive impact on customer satisfaction. Customers valued quick complaint resolution and uninterrupted banking services. The study also reported that service quality directly influenced customer loyalty and willingness to recommend digital banking services to others. Technical failures and delayed transaction confirmations reduced customer confidence in electronic banking platforms. The researchers suggested that banks should improve digital infrastructure, enhance customer service efficiency, and regularly update security systems. The study concluded that maintaining high service quality standards is essential for achieving greater customer satisfaction and retention in the digital banking environment.

Patel and Mehta (2022), in their study titled “Adoption of Cashless Payment Systems among Bank Customers,” examined the factors affecting customers’ adoption of cashless payment services. The study found that perceived ease of use, convenience, trust, and government support significantly encouraged customers to use digital payment platforms. Respondents preferred UPI and mobile banking applications because of their speed and flexibility. However, inadequate digital awareness and concerns regarding online fraud limited adoption among certain customer groups. The researchers highlighted that educational level and income positively influenced customers’ willingness to adopt cashless banking services. The study recommended improving financial literacy, strengthening transaction security, and expanding digital banking awareness campaigns. It concluded that customer confidence and technological readiness are crucial for the successful implementation of cashless banking systems.

Srinivasan and Rao (2022), in their study titled “Customer Perception towards Mobile Banking Services,” investigated customer attitudes towards mobile banking applications offered by commercial banks. The findings revealed that customers perceived mobile banking as convenient, time-saving, and cost-effective for conducting financial transactions. Security assurance, application reliability, and user-friendly interfaces significantly influenced customer perception. The study also observed that customers expected continuous technological improvements and prompt technical support from banks. Respondents who frequently used mobile banking reported higher satisfaction levels compared to occasional users. The researchers recommended enhancing digital security features and conducting awareness programmes to improve customers’ confidence in mobile banking. The study concluded that favourable customer perception plays a vital role in increasing the adoption and sustained use of cashless banking services.

Verma (2021), in the study titled “Customer Satisfaction towards Digital Banking Services in Commercial Banks,” examined customer satisfaction with various digital banking channels and their influence on banking relationships. The study found that convenience, transaction efficiency, service reliability, and security were the primary determinants of customer satisfaction. Customers appreciated the ability to perform banking transactions without visiting physical bank branches, resulting in considerable savings in time and effort. Nevertheless, occasional technical issues, internet connectivity problems, and concerns regarding cybercrime affected customer experiences. The researcher emphasized that banks should invest in advanced technology, improve digital security, and provide continuous customer education regarding safe banking practices. The study concluded that customer satisfaction with cashless banking services depends on the consistent delivery of secure, reliable, and efficient digital financial services.

STATEMENT OF THE PROBLEM

The rapid advancement of digital technology has transformed the banking sector by promoting cashless banking services such as internet banking, mobile banking, debit and credit cards, Unified Payments Interface (UPI), electronic wallets, NEFT, RTGS, and IMPS. These services have made financial transactions faster, more convenient, and accessible, reducing customers' dependence on physical cash. Government initiatives encouraging digital payments and the increasing use of smartphones and internet services have further accelerated the adoption of cashless banking across different sections of society. Despite these developments, the successful implementation of cashless banking services depends largely on customer satisfaction and perception. While many customers appreciate the convenience, speed, and flexibility offered by digital banking, others continue to face challenges such as security concerns, transaction failures, network connectivity issues, lack of digital literacy, technical errors, and fear of cyber

fraud. These issues may influence customers' willingness to adopt and continuously use cashless banking services.

Customer satisfaction is an important indicator of the effectiveness and quality of banking services. A higher level of satisfaction encourages customer loyalty, repeat usage, and positive word-of-mouth, whereas dissatisfaction may lead customers to avoid digital banking platforms or shift to alternative service providers. Similarly, customer perception regarding the security, reliability, ease of use, and usefulness of cashless banking significantly influences their acceptance and usage behaviour. Banks continuously invest in technological innovation and digital infrastructure to enhance customer experience. However, customer expectations also continue to evolve, making it essential for banks to understand the factors influencing satisfaction and perception toward cashless banking services. Identifying these factors helps financial institutions improve service quality, strengthen security measures, enhance customer support, and develop effective strategies for increasing the adoption of digital banking services. Therefore, there is a need to examine the level of customer satisfaction and perception towards cashless banking services and identify the factors that influence their usage behaviour. Such a study provides valuable insights into customers' experiences, expectations, and challenges, enabling banks to formulate appropriate measures for improving the quality, reliability, and acceptance of cashless banking services.

NEED OF THE STUDY

The banking industry has experienced significant changes with the increasing adoption of digital technologies and cashless banking services. Electronic payment systems such as internet banking, mobile banking, UPI, debit and credit cards, electronic wallets, NEFT, RTGS, and IMPS have become essential components of modern banking. As customers increasingly rely on these digital platforms for their financial transactions, it is important to evaluate their level of satisfaction and perception towards cashless banking services. Customer satisfaction is a key determinant of the success of cashless banking services. Satisfied customers are more likely to continue using digital banking platforms, recommend them to others, and maintain long-term relationships with their banks. On the other hand, dissatisfaction arising from security concerns, technical issues, transaction failures, or poor service quality may discourage customers from adopting or continuing to use cashless banking services. Therefore, understanding customer satisfaction is essential for improving the quality and efficiency of digital banking services.

Customer perception also plays a crucial role in the acceptance and usage of cashless banking services. Positive perceptions regarding convenience, reliability, ease of use, and security encourage greater adoption of digital payment systems, whereas negative perceptions related to cyber fraud, privacy concerns, and technological complexity may limit their usage. Studying customer perception helps banks identify customer expectations and address the barriers that affect the effective utilization of cashless banking services. The findings of this study will provide valuable information to banks and financial institutions regarding the strengths and weaknesses of their cashless banking services. The study will help identify the major factors influencing customer satisfaction and perception, enabling banks to improve service quality, strengthen security measures, enhance customer support, and design more user-friendly digital banking platforms. The results will also assist policymakers and banking authorities in promoting digital financial inclusion and increasing public confidence in cashless transactions. Thus, the present study is undertaken to assess customer satisfaction and perception towards cashless banking services and to provide useful suggestions for enhancing the effectiveness, reliability, security, and overall customer experience of digital banking services.

CASHLESS BANKING

Cashless banking refers to a banking system in which financial transactions are carried out through electronic or digital payment methods without the use of physical cash. It enables customers to transfer money, make payments, receive funds, and access banking services using digital platforms such as internet banking, mobile banking, debit cards, credit cards, Unified Payments Interface (UPI), electronic wallets, National Electronic Funds Transfer (NEFT), Real Time Gross Settlement (RTGS), and Immediate Payment Service (IMPS). The primary objective of cashless banking is to provide a faster, safer, more convenient, and efficient mode of conducting financial transactions.

The concept of cashless banking has gained significant importance with the rapid growth of information and communication technology, increasing internet penetration, and widespread use of smartphones. Governments and financial institutions across the world have encouraged digital payment systems to promote financial inclusion, reduce the circulation of physical cash, improve transaction transparency, and strengthen the formal financial system. In India, initiatives such as Digital India, the Unified Payments Interface (UPI), Bharat Bill Payment System (BBPS), and Aadhaar-enabled payment services have significantly accelerated the adoption of cashless banking.

Cashless banking offers numerous advantages to both customers and financial institutions. Customers can perform banking transactions at any time and from any location, eliminating the need to visit bank branches. Digital transactions are generally faster, reduce transaction costs, provide accurate transaction records, and improve overall convenience. For banks, cashless banking reduces operational costs, minimizes cash-handling risks, enhances service efficiency, and improves customer relationship management through technology-driven services.

Despite its advantages, cashless banking also faces several challenges. Customers may experience concerns related to cybersecurity, online fraud, data privacy, technical failures, internet connectivity issues, and limited digital literacy. These factors may affect customers' trust and willingness to adopt digital banking services. Therefore, banks must continuously improve security systems, provide user-friendly digital platforms, educate customers about safe digital banking practices, and ensure reliable customer support to encourage greater acceptance of cashless banking services.

Today, cashless banking has become an integral part of the modern financial system and plays a crucial role in promoting economic growth, financial inclusion, and digital transformation. As technology continues to evolve, the scope and importance of cashless banking are expected to expand further, making it essential for banks to understand customer satisfaction and perception to enhance the quality, security, and effectiveness of digital banking services.

CASHLESS BANKING SERVICES

Cashless banking services refer to the various electronic and digital banking facilities that enable customers to perform financial transactions without using physical currency. These services allow individuals and businesses to transfer funds, make payments, receive money, pay utility bills, shop online, and manage their bank accounts through secure digital channels. The growing adoption of technology, internet connectivity, and smartphones has made cashless banking services an integral part of the modern banking system.

The major cashless banking services include:

Internet Banking

Internet banking allows customers to access their bank accounts through a secure website using a computer or mobile device. Customers can check account balances, transfer funds, pay bills, request cheque books, download account statements, and perform various banking transactions without visiting a bank branch.

Mobile Banking

Mobile banking enables customers to conduct banking transactions through mobile applications provided by banks. It offers services such as balance enquiry, fund transfer, bill payments, mobile recharge, investment management, loan repayment, and account management anytime and anywhere.

Unified Payments Interface (UPI)

UPI is a real-time digital payment system that allows customers to instantly transfer money between bank accounts using mobile applications. It supports person-to-person (P2P) and person-to-merchant (P2M) transactions and is widely used because of its speed, convenience, and ease of use.

Debit Cards

Debit cards enable customers to make purchases directly from their bank accounts. They can be used at Point of Sale (POS) terminals, ATMs, and online shopping platforms for cashless payments and cash withdrawals.

Credit Cards

Credit cards allow customers to purchase goods and services on credit up to a specified limit. Customers can repay the amount later according to the bank's billing cycle. Credit cards also provide additional benefits such as reward points, cashback, discounts, and EMI facilities.

Electronic Wallets (E-Wallets)

Electronic wallets, also known as digital wallets, store payment information electronically and facilitate quick digital payments. Popular e-wallets allow users to pay for online shopping, utility bills, ticket bookings, and merchant transactions conveniently through mobile applications.

National Electronic Funds Transfer (NEFT)

NEFT is an electronic fund transfer system that enables customers to transfer money from one bank account to another across different banks in India. It is commonly used for personal and business transactions and operates through secure banking networks.

Real Time Gross Settlement (RTGS)

RTGS is an electronic payment system used for high-value fund transfers. Transactions are processed individually in real time without any waiting period, making RTGS suitable for large financial transactions

requiring immediate settlement.

Immediate Payment Service (IMPS)

IMPS is an instant electronic fund transfer service that allows customers to transfer money between bank accounts 24 hours a day, including weekends and holidays. It provides quick, secure, and real-time fund transfers through mobile banking, internet banking, and ATMs.

OBJECTIVES OF THE STUDY

To examine the level of customer satisfaction towards cashless banking services.

To identify the factors influencing customers' perception towards cashless banking services.

To analyse the relationship between demographic variables and customer satisfaction towards cashless banking services.

HYPOTHESES OF THE STUDY

H01: There is no significant relationship between the demographic variables of customers and their satisfaction towards cashless banking services.

H02: There is no significant association between customers' perception and their usage of cashless banking services.

H03: The factors influencing cashless banking services do not have a significant impact on customer satisfaction.

RESEARCH METHODOLOGY

Research Design

The present study is descriptive in nature. It aims to examine the level of customer satisfaction and perception towards cashless banking services and identify the factors influencing their adoption and usage.

Area of the Study

The study was conducted in Kanyakumari District.

Sources of Data

The study is based on both primary and secondary data.

Primary Data: Primary data were collected directly from the respondents through a well-structured questionnaire.

Secondary Data: Secondary data were collected from books, journals, research articles, RBI reports, annual reports of banks, government publications, magazines, newspapers, and authentic websites related to cashless banking and digital payment systems.

Sampling Technique

A Convenience Sampling Technique was adopted to select the respondents due to its suitability for collecting data from customers using cashless banking services.

Sample Size

The study consists of 120 respondents who actively use various cashless banking services.

Statistical Tools Used

Percentage Analysis

Mean and Standard Deviation

Independent Sample t-Test

One-Way Analysis of Variance (ANOVA)

Exploratory Factor Analysis (EFA)

Multiple Linear Regression Analysis –

Limitations of the Study

The study is based on the opinions and perceptions of the respondents, which may vary over time.

The accuracy of the findings depends on the honesty and completeness of the responses provided by the respondents.

ANALYSIS

Table 1: Demographic Profile of the Respondents

| Demographic Variables | Category | Frequency | Percentage (%) |
|--|---------------------|------------|----------------|
| Gender | Male | 68 | 56.7 |
| | Female | 52 | 43.3 |
| | Total | 120 | 100.0 |
| Age (Years) | Below 25 | 18 | 15.0 |
| | 25–35 | 42 | 35.0 |
| | 36–45 | 34 | 28.3 |
| | Above 45 | 26 | 21.7 |
| | Total | 120 | 100.0 |
| Educational Qualification | School Level | 16 | 13.3 |
| | Undergraduate | 38 | 31.7 |
| | Postgraduate | 48 | 40.0 |
| | Professional Degree | 18 | 15.0 |
| | Total | 120 | 100.0 |
| Occupation | Government Employee | 24 | 20.0 |
| | Private Employee | 40 | 33.3 |
| | Business | 28 | 23.3 |
| | Student | 16 | 13.3 |
| | Others | 12 | 10.0 |
| | Total | 120 | 100.0 |
| Monthly Income (₹) | Below 20,000 | 24 | 20.0 |
| | 20,001–40,000 | 42 | 35.0 |
| | 40,001–60,000 | 32 | 26.7 |
| | Above 60,000 | 22 | 18.3 |
| | Total | 120 | 100.0 |
| Most Frequently Used Cashless Banking Service | UPI | 52 | 43.3 |
| | Mobile Banking | 24 | 20.0 |
| | Internet Banking | 18 | 15.0 |
| | Debit/Credit Card | 20 | 16.7 |
| | E-Wallet | 6 | 5.0 |
| | Total | 120 | 100.0 |

Source: Primary Data

Table 1 presents the demographic profile of the 120 respondents selected for the study. Among them, 56.7% are male and 43.3% are female. Regarding age, the highest proportion of respondents (35.0%) belongs to the 25–35 years age group, followed by 36–45 years (28.3%), above 45 years (21.7%), and below 25 years (15.0%). In terms of educational qualification, 40.0% are postgraduates, 31.7% are undergraduates, 15.0%

possess professional degrees, and 13.3% have school-level education.

With respect to occupation, 33.3% are private employees, 23.3% are engaged in business, 20.0% are government employees, 13.3% are students, and 10.0% belong to other occupations. The monthly income analysis shows that 35.0% of the respondents earn between ₹20,001 and ₹40,000, followed by 26.7% earning ₹40,001–₹60,000, 20.0% earning below ₹20,000, and 18.3% earning above ₹60,000. Regarding the usage of cashless banking services, UPI is the most preferred mode (43.3%), followed by mobile banking (20.0%), debit/credit cards (16.7%), internet banking (15.0%), and e-wallets (5.0%). The results indicate that young, educated, and employed customers are the major users of cashless banking services, with UPI emerging as the most widely used digital payment platform.

Table 2: Customer Satisfaction towards Cashless Banking Services

| Customer Satisfaction Statements | Mean | S.D. | Rank |
|--|------|------|------|
| Cashless banking saves time in financial transactions. | 4.38 | 0.64 | I |
| Cashless banking services are easy to use. | 4.25 | 0.71 | II |
| Transactions through cashless banking are secure. | 4.12 | 0.78 | IV |
| Cashless banking services are available whenever needed. | 4.19 | 0.69 | III |
| Overall, I am satisfied with cashless banking services. | 4.08 | 0.74 | V |

Source: Computed Data

Grand Mean = 4.20

Table 2 shows the mean score and standard deviation of customer satisfaction towards cashless banking services. The statement "Cashless banking saves time in financial transactions" obtained the highest mean score (Mean = 4.38), indicating that respondents highly appreciate the time-saving nature of digital banking. This is followed by "Cashless banking services are easy to use" (Mean = 4.25) and "Cashless banking services are available whenever needed" (Mean = 4.19). The statements relating to transaction security (Mean = 4.12) and overall satisfaction (Mean = 4.08) also received favourable responses. The grand mean score of 4.20 indicates that respondents have a high level of satisfaction towards cashless banking services.

Table 3: Analysis of Customer Satisfaction towards Cashless Banking Services (Test Value = 3.00)

| Variable | Mean | t-value | Sig. (p-value) | Result |
|---|------|---------|----------------|-------------|
| Customer Satisfaction towards Cashless Banking Services | 4.20 | 18.647 | 0.000 | Significant |

Source: Computed Data

Table 3 presents the results of the One Sample t-test conducted to determine whether the mean satisfaction score differs significantly from the neutral value of 3.00. The calculated mean score is 4.20, with a t-value of 18.647 and a p-value of 0.000, which is less than the 0.05 level of significance. Hence, the null hypothesis is rejected. The findings reveal that customers exhibit a significantly higher level of satisfaction towards cashless banking services than the neutral level. This indicates that respondents are generally satisfied with the convenience, accessibility, efficiency, and overall performance of cashless banking services.

Table 4: KMO and Bartlett's Test for Factor Analysis

| Test | Value |
|---|---------|
| Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy | 0.841 |
| Bartlett's Test of Sphericity (Approx. Chi-Square) | 486.752 |
| Degrees of Freedom | 45 |
| Significance (p-value) | 0.000 |

Source: Computed Data

Table 4 shows the KMO and Bartlett's Test results for factor analysis. The KMO value of 0.841 indicates that the sample is adequate for conducting factor analysis. Bartlett's Test of Sphericity is statistically significant ($\chi^2 = 486.752$, $p = 0.000$), confirming that the variables are sufficiently correlated for factor extraction. Therefore, factor analysis is appropriate for identifying the major factors influencing customers' perception towards cashless banking services.

Table 5: Rotated Component Matrix (Principal Component Analysis with Varimax Rotation)

| Variables | Convenience | Security | Service Efficiency |
|---------------------------------|-------------|----------|--------------------|
| Ease of using cashless banking | 0.841 | | |
| Saves time in transactions | 0.816 | | |
| 24×7 availability of services | 0.789 | | |
| Secure financial transactions | | 0.852 | |
| Privacy of customer information | | 0.824 | |
| Protection against fraud | | 0.798 | |
| Quick transaction processing | | | 0.834 |
| Reliable banking services | | | 0.806 |
| Prompt customer support | | | 0.781 |

Source: Computed Data

Total Variance Explained = 71.84%

Table 5 presents the rotated component matrix obtained through Principal Component Analysis with Varimax rotation. Three factors with Eigenvalues greater than one were extracted, explaining 71.84% of the total variance. The first factor, Convenience, includes ease of use, time-saving, and service availability. The second factor, Security, comprises secure transactions, customer privacy, and fraud protection. The third factor, Service Efficiency, consists of quick transaction processing, reliable services, and prompt customer support. These findings indicate that convenience, security, and service efficiency are the major factors shaping customers' perception towards cashless banking services.

Table 6: Analysis Showing the Impact of Perception Factors on Overall Customer Perception

| Variables | Beta (β) | t-value | Sig. |
|--------------------|------------------|---------|-------|
| Convenience | 0.392 | 5.241 | 0.000 |
| Security | 0.346 | 4.687 | 0.000 |
| Service Efficiency | 0.281 | 3.954 | 0.001 |

Source: Computed Data

Result

| R | R ² | Adjusted R ² | F-value | Sig. |
|-------|----------------|-------------------------|---------|-------|
| 0.781 | 0.610 | 0.600 | 60.485 | 0.000 |

Source: Computed Data

Table 6 presents the results of the Multiple Linear Regression Analysis examining the influence of perception factors on overall customer perception towards cashless banking services. The model is statistically significant (F = 60.485, p = 0.000), indicating that the selected factors significantly explain customer perception. The R² value of 0.610 shows that 61.0% of the variation in customer perception is explained by convenience, security, and service efficiency. Among the predictors, Convenience (β = 0.392) has the strongest positive influence, followed by Security (β = 0.346) and Service Efficiency (β = 0.281). Since all the variables have p-values less than 0.05, they significantly influence customers' perception towards cashless banking services. The findings suggest that improving convenience, strengthening security, and enhancing service efficiency can substantially improve customers' perception and encourage greater adoption of cashless banking services.

Table 7: Difference in Customer Satisfaction Based on Gender

| Gender | N | Mean | S.D. | t-value | Sig. (p-value) |
|--------|----|------|------|---------|----------------|
| Male | 68 | 4.24 | 0.48 | 1.628 | 0.106 |
| Female | 52 | 4.16 | 0.53 | | |

Source: Computed Data

Table 7 presents the results of the Independent Sample t-test conducted to examine whether there is a significant difference in customer satisfaction towards cashless banking services based on gender. The mean satisfaction score of male respondents (Mean = 4.24) is slightly higher than that of female respondents (Mean = 4.16). However, the calculated t-value is 1.628 with a p-value of 0.106, which is greater than the 0.05 level of significance. Hence, the difference is not statistically significant, indicating that gender does not significantly influence customer satisfaction towards cashless banking services. Therefore, the null hypothesis is accepted.

Table 8: Difference in Customer Satisfaction Based on Age Group

| Source of Variation | Sum of Squares | df | Mean Square | F-value | Sig. (p-value) |
|---------------------|----------------|-----|-------------|---------|----------------|
| Between Groups | 3.862 | 3 | 1.287 | 5.218 | 0.002 |
| Within Groups | 28.604 | 116 | 0.247 | | |
| Total | 32.466 | 119 | | | |

Source: Computed Data

Table 8 presents the results of the One-Way ANOVA conducted to determine whether customer satisfaction differs among respondents belonging to different age groups. The analysis reveals an F-value of 5.218 with a p-value of 0.002, which is less than the 0.05 level of significance. Therefore, the null hypothesis is rejected. The findings indicate that there is a significant difference in customer satisfaction towards cashless banking services among different age groups. This suggests that age plays an important role in influencing customers' satisfaction with cashless banking services, with variations in satisfaction levels across different age categories.

FINDINGS OF THE STUDY

The majority of the respondents (56.7%) are male, while 43.3% are female.

Most of the respondents (35.0%) belong to the 25–35 years age group.

A majority of the respondents (40.0%) possess postgraduate qualifications.

Most of the respondents (33.3%) are employed in the private sector.

The highest proportion of respondents (35.0%) earn a monthly income between ₹20,001 and ₹40,000.

UPI is the most frequently used cashless banking service, preferred by 43.3% of the respondents.

The mean analysis reveals that respondents have a high level of satisfaction towards cashless banking services, with a grand mean score of 4.20.

Among the satisfaction factors, "Cashless banking saves time in financial transactions" received the highest mean score, indicating that time-saving is the most appreciated feature of cashless banking.

The One Sample t-test indicates that customer satisfaction towards cashless banking services is significantly higher than the neutral level ($p < 0.05$).

The KMO value (0.841) and the significant Bartlett's Test confirm that the data are suitable for factor analysis.

Factor Analysis identifies three major factors influencing customer perception towards cashless banking services: Convenience, Security, and Service Efficiency.

Multiple Linear Regression Analysis reveals that Convenience has the strongest positive influence on customer perception, followed by Security and Service Efficiency.

The regression model explains 61.0% of the variation in customer perception towards cashless banking services.

The Independent Sample t-test shows that there is no significant difference in customer satisfaction between male and female respondents ($p > 0.05$).

One-Way ANOVA indicates a significant difference in customer satisfaction among different age groups ($p < 0.05$), suggesting that age influences satisfaction with cashless banking services.

SUGGESTIONS

Banks should continuously strengthen cybersecurity measures to protect customers from online fraud, phishing attacks, and unauthorized transactions.

User-friendly mobile banking and internet banking applications should be developed with simple interfaces to improve accessibility for customers of all age groups.

Banks should organize regular digital financial literacy programmes to educate customers about the safe and effective use of cashless banking services.

Customer support services should be made more responsive by providing 24×7 assistance for resolving transaction-related issues and technical problems.

Banks should improve the speed and reliability of digital transactions by upgrading their technological infrastructure and minimizing system downtime.

Awareness campaigns should be conducted to promote the benefits of cashless banking services, particularly among rural and elderly customers who are less familiar with digital payment systems.

Additional security features such as biometric authentication, multi-factor authentication, and real-time transaction alerts should be implemented to enhance customer confidence.

Banks should simplify the registration and activation process for digital banking services to encourage first-time users.

Periodic customer feedback surveys should be conducted to identify customer expectations, service gaps, and areas requiring improvement.

Banks should introduce attractive incentives such as cashback offers, reward points, and reduced transaction charges to encourage greater adoption and continued use of cashless banking services.

Continuous training should be provided to bank employees to improve their ability to assist customers in using digital banking services efficiently.

Banks should focus on improving service quality, convenience, security, and transaction efficiency, as these factors have a significant influence on customer satisfaction and perception towards cashless banking services.

CONCLUSION

Cashless banking services have revolutionized the banking sector by providing customers with a convenient, fast, secure, and efficient alternative to traditional cash-based transactions. The increasing adoption of digital payment platforms such as UPI, mobile banking, internet banking, debit and credit cards, and electronic fund transfer systems reflects the growing acceptance of technology-driven banking services. These services have enhanced customer convenience by enabling financial transactions anytime and anywhere while reducing

dependence on physical cash. The findings of the study indicate that customers are generally highly satisfied with cashless banking services. Convenience, security, and service efficiency emerged as the major factors influencing customer perception, with convenience having the strongest impact on overall satisfaction. The study also reveals that demographic factors such as age significantly influence customer satisfaction, whereas gender does not have a significant effect. These findings highlight the importance of understanding customer expectations and continuously improving digital banking services to meet their evolving needs.

Although cashless banking offers numerous benefits, challenges such as cybersecurity risks, transaction failures, technical issues, and varying levels of digital literacy continue to affect customer experience. Therefore, banks should focus on strengthening security measures, enhancing technological infrastructure, improving customer support, and promoting digital financial literacy to build greater customer confidence and encourage wider adoption of cashless banking services. Overall, the study concludes that customer satisfaction and positive perception are essential for the successful growth of cashless banking services. Continuous innovation, reliable digital infrastructure, and customer-centric service strategies will enable banks to enhance customer experience, strengthen long-term customer relationships, and contribute to the advancement of a secure and sustainable digital banking ecosystem.

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