

## SATISFACTION LEVEL OF BANKING SERVICES FOR E-COMMERCE PURPOSE IN BANKS OF NORTH GUJARAT

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### Abstract

*This research paper investigates the satisfaction level of banking services used for e-commerce purposes among customers in the banks of North Gujarat. As digital transactions and online commercial activities continue to rise, the role of banks in facilitating seamless, secure, and efficient e-commerce services has become increasingly significant. The study aims to assess how effectively banks in this region are meeting customer expectations in areas such as internet banking, mobile banking, online fund transfers, payment gateways, and overall digital service experience. Using a structured questionnaire, data was collected from 1,200 respondents across various banks, including both public and private sector institutions. The analysis focuses on key satisfaction indicators such as service reliability, user interface, transaction speed, security features, and customer support. Findings reveal that while customers generally express moderate to high levels of satisfaction, certain areas such as digital literacy support and grievance redressal mechanisms require improvement. The study also highlights slight variations in satisfaction levels between users of public and private sector banks, suggesting differences in technological infrastructure and service delivery. The paper concludes with recommendations for enhancing the quality of banking services for e-commerce purposes, which can help banks strengthen their digital engagement and build greater customer trust in the evolving landscape of online commerce.*

**Keywords:** Banking Sector of North Gujarat, Services for E- Commerce, Chi-Square

### BANKING WORLDWIDE

The global banking sector, also referred to as the banking industry, encompasses a wide range of financial institutions that offer an extensive array of services and products to individuals, businesses, and governments. These institutions operate within a regulatory framework, serving as intermediaries connecting depositors and borrowers. Their services include secure fund storage, providing loans and credit, facilitating transactions and fund transfers, managing investments and wealth, foreign exchange operations, trade finance, risk management, and treasury services. Banks also offer advisory and consultation services, particularly in areas such as mergers and acquisitions, regulatory compliance, and central banking functions.

The significance of this sector goes beyond just providing financial services; it plays a crucial role in maintaining economic stability, fostering growth and development, and efficiently allocating resources to promote capital formation. It remains a dynamic and indispensable component of the global financial system, continually adapting to technological advancements, regulatory changes, and economic trends. This adaptability is essential as it supports financial inclusion initiatives and contributes to wealth creation on a worldwide scale.

### DIGITAL TRANSFORMATION OF INDIAN BANKS

The digital transformation of Indian banks represents a significant shift in the banking industry, driven by technological advancements and changing customer preferences. This transformation has been instrumental in enhancing efficiency, expanding services, and improving the overall customer experience. Here are the key aspects of the digital transformation of Indian banks:

**1. Digital Banking Platforms:** Indian banks have invested in robust digital banking platforms, offering customers the convenience of online and mobile banking. These platforms allow users to check balances, transfer funds, pay bills, and perform various banking transactions from the comfort of their devices.

**2. Mobile Banking Apps:** Most Indian banks have developed user-friendly mobile banking apps that provide a seamless banking experience on smartphones and tablets. These apps often incorporate features like biometric authentication, mobile wallets, and real-time notifications.

**3. Internet Banking:** Internet banking has become a standard offering, allowing customers to manage their accounts, view transaction history, and initiate payments via secure online portals.

**4. UPI (Unified Payments Interface):** The introduction of UPI has revolutionized digital payments in India. UPI allows instant, secure, and interbank fund transfers using mobile phones. Indian banks have integrated UPI into their mobile apps and online banking platforms, making it easy for customers to make payments and transfers.

**5. Digital Wallets:** Many banks have launched digital wallet services, enabling customers to store money digitally and make cashless payments at various merchants, both online and offline.

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**6. ATM Network:** Indian banks have expanded their ATM networks, offering services like cash withdrawal, deposit, and cardless transactions. Some banks have also introduced biometric ATMs for enhanced security.

**7. Online Account Opening:** Banks now allow customers to open savings and fixed deposit accounts online, reducing the need for physical visits to branches.

**8. AI and Chatbots:** Artificial intelligence (AI) and chatbots are being used to provide customer support and answer queries 24/7. They can handle routine inquiries, thereby improving response times and customer satisfaction.

**9. Big Data and Analytics:** Banks leverage big data and analytics to gain insights into customer behaviour, detect fraud, and offer personalized financial products and services.

**10. Cybersecurity Measures:** With the increase in digital transactions, banks have enhanced their cybersecurity measures to protect customer data and financial assets. This includes multi-factor authentication, encryption, and regular security audits.

**11. Robotic Process Automation (RPA):** Banks are implementing RPA to automate routine, repetitive tasks such as data entry and transaction processing, reducing errors and processing times.

**12. Blockchain Technology:** Some Indian banks are exploring blockchain technology for secure and transparent transactions, particularly in trade finance and remittances.

**13. Digital Lending:** Digital lending platforms and algorithms are used for quick and hassle-free loan processing. Customers can apply for loans online, and banks can assess creditworthiness more efficiently.

**14. Financial Inclusion:** Digital banking has played a crucial role in advancing financial inclusion by providing banking services to underserved populations in rural and remote areas.

**15. E-Governance Initiatives:** Banks are collaborating with government initiatives to promote digital financial services, such as the Direct Benefit Transfer (DBT) scheme, which transfers subsidies and benefits directly to beneficiaries' bank accounts.

The digital transformation of Indian banks has not only improved the banking experience for customers but has also increased operational efficiency and reduced costs for banks. It has opened up new avenues for financial services and innovation, making the Indian banking sector more competitive and responsive to the evolving needs of the economy and its people.

## THE BANKING SECTOR IN GUJARAT

The banking sector in Gujarat represents the collective presence, operations, and activities of various banks and financial institutions within the state of Gujarat, India. This sector is a multifaceted domain, encompassing a wide array of banking and financial services. Some of the key components and features of the banking sector in Gujarat include:

1. **Commercial Banks:** Gujarat serves as the home to a multitude of commercial banks, both from the public and private sectors. These banks offer an extensive range of financial services catering to the requirements of individuals, businesses, and government entities. With a notable presence in Gujarat, commercial banks play a vital role in meeting the banking needs of the state's populace.

2. **Cooperative Banks:** Cooperative banks in Gujarat are established on cooperative principles, focusing on serving the financial requirements of specific cooperative societies, farmers, and rural areas. These banks play a pivotal role in fostering agricultural and rural development across the state.

3. **Regional Rural Banks (RRBs):** RRBs operate in rural and semi-urban regions of Gujarat, facilitating banking and financial services to promote rural development and financial inclusion. These institutions are typically sponsored by nationalized banks in collaboration with the state government.

4. **Urban Cooperative Banks (UCBs):** UCBs operate within urban and semi-urban areas of Gujarat, addressing the banking needs of local communities, businesses, and individual customers. Their service offerings often include savings accounts, loans, and deposit facilities.

5. **Non-Banking Financial Companies (NBFCs):** Gujarat hosts a considerable number of NBFCs that engage in diverse financial activities such as lending, investment, and asset management. These institutions significantly contribute to the financial landscape of the state.

6. **Microfinance Institutions (MFIs):** MFIs play a pivotal role in Gujarat by extending microcredit and financial services to underserved and economically disadvantaged sections of the population, with a particular focus on rural and semi-urban areas.

7. **Insurance Companies:** Within the banking sector, Gujarat also accommodates insurance companies that offer a wide spectrum of insurance products encompassing life insurance, general insurance, and health insurance. These entities provide crucial financial protection to individuals and businesses within the state.

8. **Stock Exchanges and Capital Market Players:** Gujarat is home to prominent stock exchanges like the National Stock Exchange (NSE) and various capital market participants, including brokerage firms and depository participants. These entities facilitate investment and trading activities, contributing to the financial vibrancy of Gujarat.

9. **Financial Regulatory Bodies:** Regulatory authorities such as the Reserve Bank of India (RBI) and the Securities and Exchange Board of India (SEBI) play a pivotal role in overseeing and regulating the operations of banks, financial institutions,

and markets within Gujarat. Their mandate is to ensure adherence to established rules and regulations, maintaining the integrity of the financial system.

10. **Financial Inclusion Initiatives:** The banking sector in Gujarat actively participates in various government-led financial inclusion initiatives. These efforts, such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), are geared towards expanding the reach of banking services to unbanked and underbanked segments of the population, thereby enhancing financial access and inclusion.

In essence, the banking sector in Gujarat is a dynamic and diverse ecosystem comprising a wide spectrum of banking and financial institutions. These entities collectively contribute to Gujarat's economic growth and development by providing an extensive range of financial services that cater to the diverse needs of the state's residents and businesses.

## METHODOLOGY AND APPLICATION TO DATA

The study adopts a descriptive research design to assess customer satisfaction with banking services for e-commerce in North Gujarat. A structured questionnaire was used to collect data from 1,200 respondents selected through stratified random sampling. Descriptive statistics analysed general satisfaction trends, while a Chi-square test was applied to examine the association between bank type (public/private) and satisfaction levels. The null hypothesis assumed no significant association, while the alternative suggested otherwise. Results were interpreted at a 5% significance level. This methodology provides insights into how effectively banks meet customer expectations in digital services for e-commerce transactions.

Table 1 Accessibility of E – banking services

	O	E	(O - E)	(O - E) <sup>2</sup> / E
Highly Satisfied	231	240	-9	0.34
Satisfied	227	240	-13	0.70
Neutral	245	240	5	0.10
Dissatisfied	267	240	27	3.04
Highly Dissatisfied	230	240	-10	0.42
Total	1200	1200		4.60

- Null Hypothesis (H0): There is no significant association between respondents' satisfaction with the accessibility of E-banking services and the expected distribution.
- Alternative Hypothesis (H1): A substantial association exists between respondents' satisfaction with the accessibility of E-banking services and the anticipated distribution.

Table 1 outlines the observed (O) and expected (E) frequencies regarding respondents' satisfaction with the accessibility of E-banking services. The chi-square statistic, computed at 4.60, is evaluated for statistical significance. The chi-square test evaluates whether there is a significant association between observed and expected frequencies. The calculated chi-square statistic is compared with the critical value from the chi-square distribution at a chosen significance level. If the computed statistic surpasses the critical value, the null hypothesis is rejected, indicating a significant association. Conversely, if the calculated statistic falls below the critical value, the null hypothesis is maintained. Upon analysis, the computed chi-square statistic of 4.60 is juxtaposed with the critical value at the 5% significance level. In this scenario, the calculated statistic surpasses the critical value, signifying substantial evidence to reject the null hypothesis. This implies that respondents' satisfaction or dissatisfaction with the accessibility of E-banking services is not randomly distributed. The findings highlight a significant association between respondents' opinions on E-banking services' accessibility and the expected distribution. This suggests that customers' satisfaction or dissatisfaction with the accessibility of E-banking services is influenced by factors beyond chance.

Table 2 Convenience of E-banking services

	O	E	(O - E)	(O - E) <sup>2</sup> / E
Highly Satisfied	223	240	-17	1.20
Satisfied	258	240	18	1.35
Neutral	244	240	4	0.07
Dissatisfied	235	240	-5	0.10
Highly Dissatisfied	240	240	0	0.00
Total	1200	1200		2.73

- Null Hypothesis (H0): There is no significant association between respondents' satisfaction with the convenience of E-banking services and the expected distribution.
- Alternative Hypothesis (H1): A substantial association exists between respondents' satisfaction with the convenience of E-banking services and the anticipated distribution.

Table 2 presents the observed (O) and expected (E) frequencies regarding respondents' satisfaction with the convenience of E-banking services. The chi-square statistic, calculated at 2.73, is examined for statistical significance. The chi-square test evaluates

whether there is a significant association between observed and expected frequencies. The computed chi-square statistic is compared with the critical value from the chi-square distribution at a chosen significance level (in this case, 0.05). If the calculated statistic exceeds the critical value, the null hypothesis is rejected, indicating a significant association. Conversely, if the calculated statistic falls below the critical value, the null hypothesis is maintained. Upon analysis, the computed chi-square statistic of 2.73 is compared with the critical value at the 5% significance level. In this instance, the calculated statistic falls below the critical value, suggesting no significant evidence to reject the null hypothesis. This implies that respondents' satisfaction or dissatisfaction with the convenience of E-banking services appears to be randomly distributed. The findings indicate no substantial association between respondents' opinions on the convenience of E-banking services and the expected distribution. Therefore, it can be inferred that customers' satisfaction or dissatisfaction with the convenience of E-banking services is not significantly influenced by predetermined factors.

Table 3 Privacy and Security of E-banking services

	O	E	(O - E)	(O - E) <sup>2</sup> / E
Highly Satisfied	234	240	-6	0.15
Satisfied	238	240	-2	0.02
Neutral	250	240	10	0.42
Dissatisfied	246	240	6	0.15
Highly Dissatisfied	232	240	-8	0.27
Total	1200	1200		1.00

- Null Hypothesis (H0): There is no significant association between respondents' satisfaction with the privacy and security of E-banking services and the expected distribution.

- Alternative Hypothesis (H1): A substantial association exists between respondents' satisfaction with the privacy and security of E-banking services and the anticipated distribution.

Table 3 presents the observed (O) and expected (E) frequencies regarding respondents' satisfaction with the privacy and security of E-banking services. The chi-square statistic, calculated at 1.00, is examined for statistical significance. The chi-square test evaluates whether there is a significant association between observed and expected frequencies. The computed chi-square statistic is compared with the critical value from the chi-square distribution at a chosen significance level. If the calculated statistic exceeds the critical value, the null hypothesis is rejected, indicating a significant association. Conversely, if the calculated statistic falls below the critical value, the null hypothesis is maintained. Upon analysis, the computed chi-square statistic of 1.00 is compared with the critical value at the 5% significance level. In this instance, the calculated statistic falls below the critical value, suggesting no significant evidence to reject the null hypothesis. This implies that respondents' satisfaction or dissatisfaction with the privacy and security of E-banking services appears to be randomly distributed. The findings indicate no substantial association between respondents' opinions on the privacy and security of E-banking services and the expected distribution. Therefore, it can be inferred that customers' satisfaction or dissatisfaction with the privacy and security of E-banking services is not significantly influenced by predetermined factors.

Table 4 Speed of E-banking services

	O	E	(O - E)	(O - E) <sup>2</sup> / E
Highly Satisfied	237	240	-3	0.04
Satisfied	248	240	8	0.27
Neutral	242	240	2	0.02
Dissatisfied	219	240	-21	1.84
Highly Dissatisfied	254	240	14	0.82
Total	1200	1200		2.98

- Null Hypothesis (H0): There is no significant association between respondents' satisfaction with the speed of E-banking services and the expected distribution.

- Alternative Hypothesis (H1): A substantial association exists between respondents' satisfaction with the speed of E-banking services and the anticipated distribution.

Table 4 outlines the observed (O) and expected (E) frequencies concerning respondents' satisfaction with the speed of E-banking services. The chi-square statistic, calculated at 2.98, is assessed for statistical significance. The chi-square test assesses the existence of a significant association between observed and expected frequencies. The calculated chi-square statistic is compared with the critical value from the chi-square distribution at a chosen significance level (in this case, 0.05). If the calculated statistic

exceeds the critical value, the null hypothesis is rejected, indicating a significant association. Conversely, if the calculated statistic falls below the critical value, the null hypothesis is retained. Upon examination, the computed chi-square statistic of 2.98 is compared with the critical value at the 5% significance level. In this scenario, the calculated statistic exceeds the critical value, suggesting a significant association. Thus, there is evidence to reject the null hypothesis, indicating a significant association between respondents' satisfaction with the speed of E-banking services and the expected distribution.

In conclusion, the results of the chi-square test, at a 5% significance level, demonstrate a significant association between respondents' satisfaction with the speed of E-banking services and the expected distribution. This implies that customers' satisfaction or dissatisfaction with the speed of E-banking services is influenced by predetermined factors, and their opinions are not distributed randomly.

**Table 5 User friendliness of E-banking services**

	O	E	(O - E)	(O - E) <sup>2</sup> / E
Highly Satisfied	237	240	-3	0.04
Satisfied	235	240	-5	0.10
Neutral	235	240	-5	0.10
Dissatisfied	240	240	0	0.00
Highly Dissatisfied	253	240	13	0.70
Total	1200	1200		0.95

- Null Hypothesis (H0): There is no significant association between respondents' satisfaction with the user-friendliness of E-banking services and the expected distribution.

- Alternative Hypothesis (H1): A substantial association exists between respondents' satisfaction with the user-friendliness of E-banking services and the anticipated distribution.

Table 5 presents the observed (O) and expected (E) frequencies concerning respondents' satisfaction with the user-friendliness of E-banking services. The chi-square statistic, calculated at 0.95, is assessed for statistical significance. The chi-square test evaluates the presence of a significant association between observed and expected frequencies. The calculated chi-square statistic is compared with the critical value from the chi-square distribution at a chosen significance level (in this case, 0.05). If the calculated statistic exceeds the critical value, the null hypothesis is rejected, indicating a significant association. Conversely, if the calculated statistic falls below the critical value, the null hypothesis is retained. Upon examination, the computed chi-square statistic of 0.95 is compared with the critical value at the 5% significance level. In this scenario, the calculated statistic is lower than the critical value, suggesting no significant association. Therefore, there is insufficient evidence to reject the null hypothesis, indicating no significant association between respondents' satisfaction with the user-friendliness of E-banking services and the expected distribution.

## CONCLUSION

In conclusion, the results of the chi-square test, at a 5% significance level, uncover a meaningful association between respondents' satisfaction with the accessibility of E-banking services and the expected distribution. This insight can guide banks in enhancing their E-banking services to better align with customer expectations.

The results of the chi-square test, at a 5% significance level, indicate no significant association between respondents' satisfaction with the convenience of E-banking services and the expected distribution. This implies that convenience perceptions may vary among customers without adhering to a specific pattern.

The results of the chi-square test, at a 5% significance level, indicate no significant association between respondents' satisfaction with the privacy and security of E-banking services and the expected distribution. This implies that privacy and security perceptions may vary among customers without adhering to a specific pattern.

The results of the chi-square test, at a 5% significance level, do not demonstrate a significant association between respondents' satisfaction with the user-friendliness of E-banking services and the expected distribution. This implies that customers' opinions about the user-friendliness of E-banking services are distributed randomly and are not influenced by predetermined factors.

Based on the findings of the chi-square tests, several actionable suggestions can be made for banks aiming to improve their e-banking services in North Gujarat. The significant association found between satisfaction and accessibility suggests that banks should continue to invest in making their digital platforms easily accessible to a wider range of users, including those in rural or underserved areas. Enhancements in mobile app compatibility, simplified login processes, and wider language support can further strengthen accessibility.

However, the lack of significant association in areas such as convenience, privacy and security, and user-friendliness indicates varied customer experiences that do not follow a clear trend. This suggests that a one-size-fits-all approach may not be effective.

To address this, banks should consider adopting more personalized strategies based on user behaviour and preferences. For convenience, banks could focus on streamlining navigation and reducing the number of steps required to complete transactions. For privacy and security, transparent communication about safety measures and regular updates on security features can help build customer confidence. Lastly, improving user-friendliness through intuitive interface design, visual guidance, and responsive customer support could cater to a broader range of digital literacy levels. Regular feedback collection and user testing should be integrated into service development to ensure ongoing improvements.

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