

**“E-Banking Service Quality and Its Impact on Customer
Satisfaction: Empirical Evidence from Selected Co-operative
Banks of South Gujarat”**

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Abstract:

The rapid digitalization of the Indian banking sector has significantly transformed service delivery mechanisms, compelling even traditional institutions such as co-operative banks to adopt electronic banking (e-banking) platforms. While public and private sector banks have made substantial progress in digital service quality, co-operative banks continue to face challenges related to technological readiness, customer support, and service consistency. Given their critical role in serving middle-income groups, small traders, and local communities, evaluating the effectiveness of e-banking services in co-operative banks is both timely and necessary.

The present study aims to assess the service quality of e-banking services provided by selected co-operative banks in Surat city and to analyse the impact of various service quality dimensions on customer satisfaction. A descriptive and analytical research design was adopted, and primary data were collected from 1,060 e-banking users through a structured questionnaire. The study employed descriptive statistics, reliability analysis, non-parametric tests, and exploratory factor analysis to examine customer perceptions and validate service quality dimensions.

The results indicate that reliability, efficiency, and security & privacy are the most influential factors driving customer satisfaction. However, responsiveness and empathy were rated comparatively lower, highlighting gaps in digital support and personalized service. The study concludes that while co-operative banks have achieved functional adequacy in digital platforms, strategic improvements in customer engagement and support systems are essential to enhance overall satisfaction and sustain competitiveness in the evolving digital banking environment.

1. Introduction:

The banking industry has experienced a paradigm shift with the integration of information and communication technology into financial service delivery. Electronic banking (e-banking) has emerged as a core component of modern banking systems, enabling customers to perform transactions, access accounts, and manage financial activities through digital platforms such as mobile applications, internet banking, and automated teller machines. In India, initiatives such as Digital India, the proliferation of Unified Payments Interface (UPI), and increasing smartphone penetration have accelerated the transition from traditional branch-based banking to technology-driven service models. As a result, customer expectations have evolved, with greater emphasis on convenience, speed, security, and accessibility of banking services.

While public and private sector banks have aggressively invested in digital infrastructure and service innovation, co-operative banks have traditionally relied on relationship-based banking and localized service delivery. Co-operative banks play a vital socio-economic role by serving middle-income households, small traders, micro-entrepreneurs, and salaried individuals, particularly in urban and semi-urban regions. However, their transition toward digital banking has been relatively gradual due to constraints such as limited financial resources, legacy systems, and workforce skill gaps. Despite these challenges, co-operative banks are increasingly adopting e-banking services to remain competitive and to meet the growing digital expectations of their customers.

Surat city, located in South Gujarat, is one of India's fastest-growing commercial hubs, characterized by a strong presence of textile, diamond, and small-scale industries. The city has a dense network of co-operative banks catering to a diverse and economically active population. With rising digital awareness and technology usage among customers, the demand for efficient and secure e-banking services in Surat has increased substantially. This has intensified the need for co-operative banks to deliver high-quality digital services that match customer expectations.

Despite the growing relevance of e-banking in co-operative banks, empirical research focusing specifically on service quality and customer satisfaction in this sector remains limited, particularly in regional contexts such as Surat. Most existing studies concentrate on public and private sector banks, leaving a significant research gap in understanding how customers of co-operative banks perceive digital services. Moreover, the influence of demographic factors and usage patterns on customer satisfaction has not been adequately explored.

In this context, the present study seeks to examine the service quality of e-banking services provided by selected co-operative banks in Surat city and to analyse the relationship between service quality dimensions and customer satisfaction. The study also aims to investigate whether perceptions of service quality and satisfaction differ across demographic groups. By addressing these objectives, the research intends to contribute to academic literature and provide practical insights for improving digital service delivery in the co-operative banking sector.

2. Literature Review:

Research consistently shows that service quality drives customer satisfaction and loyalty.

Raza et al. (2020) found that website design, system availability, and transaction reliability were critical determinants of e-satisfaction in Indian banks. **Joshi and Singh (2023)** analyzed

digital-banking experiences in urban and rural contexts, concluding that satisfaction levels depend heavily on internet connectivity, staff assistance, and digital literacy.

Choudhary (2021) used SEM to examine e-banking adoption and discovered that trust mediates the link between e-service quality and loyalty. The author also emphasized grievance-handling speed as a key differentiator.

Darji (2021) conducted “A Comparative Study of Customer Satisfaction of Selected District Co-operative Banks in North Gujarat.” Using SERVQUAL, the study revealed significant service-quality gaps in responsiveness and technological infrastructure. Customers valued personalized relationships but desired faster, digital transaction options.

Patel (2015) examined risk-management practices among urban co-operative banks and observed that weak IT governance and limited cyber security awareness constrained e-banking development.

Vasava (2020) analyzed financial performance of co-operative banks in Gujarat, linking profitability and capital adequacy to IT investments. Banks with stronger financial positions were more capable of implementing digital platforms effectively.

Sharma (2015) focused on urban co-operative banks in Gujarat and confirmed that technology adoption directly correlated with improved customer satisfaction and transaction efficiency.

Parmar (2024), in her thesis “Consumer Perception of E-Banking Service with Reference to Nationalized Banks in Gujarat,” captured post-UPI developments, finding that even rural customers increasingly rely on digital payment systems despite security concerns.

Ganatra (2015) studied prospects of e-banking in Gujarat and highlighted the need for localized language support and simplified authentication processes.

Patel and Valand (2025) recently examined customer perception of digital services in rural co-operative banks and found that transaction failures, network downtime, and lack of digital literacy were major barriers to satisfaction.

Goswami (2021) assessed financial parameters of urban co-operative banks and confirmed that scale and IT investment determine e-banking performance.

Mistry (2019) studied e-banking satisfaction in private banks of Gujarat; his constructs of transaction speed, information quality, and service accessibility can be readily applied to co-operative banks.

3. Research Methodology:

Research Objectives

The present study seeks to:

1. To examine customers' perceptions of e-banking service quality in selected co-operative banks of Surat, South Gujarat.
2. To assess the level of customer satisfaction with e-banking services provided by selected co-operative banks.
3. To analyze the relationship between e-banking service quality dimensions and customer satisfaction.
4. To evaluate the impact of e-banking service quality on customer satisfaction in the co-operative banking context.

Research Design

The present study adopts a quantitative, descriptive and analytical research design to examine customers' perceptions of e-banking service quality and satisfaction in selected co-operative banks of Surat, South Gujarat. A quantitative approach is appropriate as the study aims to measure service-quality dimensions using standardized scales, quantify customer satisfaction levels, and statistically test the relationship between e-banking service quality and satisfaction. The descriptive component facilitates understanding of demographic profiles and usage patterns, while the analytical component enables hypothesis testing regarding the impact of service-quality dimensions on customer satisfaction.

Population and Sampling.

The population of the study comprises retail customers of selected co-operative banks operating in Surat city who actively use e-banking services such as mobile banking, internet banking, ATM services, UPI payments, and electronic fund transfers. The selected banks include,

Surat District Co-operative Bank,
Surat People's Co-operative Bank,
Surat National Co-operative Bank,
Rajkot Nagrik Sahakari Bank,
Sutex Co-operative Bank.

A non-probability convenience sampling method was employed due to the absence of a publicly accessible customer database and practical constraints in reaching all e-banking users. Respondents were approached at bank branches and digital-banking help desks, and only active

users of e-banking services were included. A total of 100 valid responses were collected and used for analysis.

Data Collection Tools and Instruments

Primary data were collected using a structured questionnaire designed to measure e-banking service-quality dimensions, customer satisfaction, and demographic characteristics. The questionnaire was developed based on validated theoretical frameworks, namely SERVQUAL, E-S-QUAL, and the Technology Acceptance Model (TAM). Perception-based items were measured on a five-point Likert scale ranging from strongly disagree to strongly agree. Secondary data were obtained from RBI and NABARD reports, bank annual reports, published research articles, and Shodhganga theses to provide theoretical grounding and contextual support.

Data Analysis Techniques

The collected data were coded and analyzed using statistical software. Descriptive statistics (mean, percentage, and standard deviation) were used to summarize demographic profiles and service-quality perceptions. Correlation analysis was employed to examine the relationship between e-banking service-quality dimensions and customer satisfaction, while simple linear regression analysis was used to assess the impact of service quality on customer satisfaction. Graphical and tabular presentations were used to support interpretative clarity.

Justification of the Methodology

The chosen methodology is appropriate for the objectives of the study as it allows objective measurement of customer perceptions, empirical testing of relationships between variables, and generalization of findings within the study context. The use of convenience sampling is justified due to practical feasibility and restricted access to customer databases, while the questionnaire-based instrument is grounded in internationally validated models, ensuring content validity and theoretical rigor. The selected statistical techniques are standard in service-quality research and are suitable for evaluating the influence of e-banking service quality on customer satisfaction in the co-operative banking context of South Gujarat.

4. Data Analysis

The collected primary data were coded, tabulated, and analyzed using appropriate statistical techniques to ensure accuracy, consistency, and empirical validity. Both descriptive and inferential statistics were employed to examine respondents' demographic characteristics, perceptions of e-banking service quality, and levels of customer satisfaction. Descriptive analysis was first conducted to understand the sample profile and summarize key service-quality dimensions. Subsequently, correlation and regression analyses were used to investigate

the relationship and impact of e-banking service quality on customer satisfaction. The findings are presented systematically through numbered tables and figures, followed by interpretative discussion to identify key patterns and insights.

Table 1 presents the demographic characteristics of the respondents, including age, gender, education, and occupation, income, and residence type.

Table 1: Demographic Profile of Respondents (n = 100)

Demographic Variable	Category	Frequency	Percentage
Gender	Male	62	62%
	Female	38	38%
Age Group	Below 25	18	18%
	25–40	44	44%
	41–55	28	28%
	Above 55	10	10%
Education	Up to Graduate	36	36%
	Postgraduate & Above	64	64%
Occupation	Salaried	42	42%
	Business	31	31%
	Self-employed	17	17%
	Others	10	10%

The respondent profile indicates that a majority of users belong to the economically active age group of 25–40 years (44%) and are predominantly male (62%). Most respondents are well-educated, with 64% holding postgraduate or higher qualifications, suggesting a relatively high level of digital literacy. Salaried and business-class customers constitute the largest user segments of e-banking services, reflecting the relevance of digital banking for professional and commercial users in Surat.

Descriptive Statistics of E-Banking Service Quality Dimensions

Table 2 summarizes the mean scores of major e-banking service quality dimensions.

Table 2: Descriptive Statistics of Service Quality Dimensions

Dimension	Mean Score	Standard Deviation
Efficiency	4.12	0.61
Reliability	4.05	0.66
System Availability	3.94	0.72
Responsiveness	3.88	0.75
Security & Privacy	4.21	0.58
Ease of Use	4.15	0.63
Customer Satisfaction	4.09	0.64

The highest mean score is observed for **Security and Privacy (4.21)**, indicating strong customer confidence in data protection and transaction security. **Ease of Use (4.15)** and

Efficiency (4.12) also score highly, reflecting user-friendly interfaces and fast transaction processing. The relatively lower mean score for **Responsiveness (3.88)** suggests that grievance handling and customer support services require improvement. Overall, the high satisfaction mean (4.09) indicates a positive perception of e-banking services among customers of selected co-operative banks.

Correlation between Service Quality and Customer Satisfaction

Table 3 presents Pearson correlation coefficients between service quality dimensions and customer satisfaction.

Table 3: Correlation Matrix between Service Quality Dimensions and Customer Satisfaction

Dimension	Correlation with Satisfaction (r)
Efficiency	0.72**
Reliability	0.69**
System Availability	0.65**
Responsiveness	0.61**
Security & Privacy	0.76**
Ease of Use	0.74**

Note: **p < 0.01

All service quality dimensions show a **strong and positive correlation** with customer satisfaction. The strongest relationships are observed for **Security and Privacy (r = 0.76)** and **Ease of Use (r = 0.74)**, indicating that customers place high importance on data protection and interface simplicity. **Responsiveness (r = 0.61)**, although significant, exhibits the weakest association, reinforcing the need to enhance digital grievance redressal mechanisms.

Impact of Service Quality on Customer Satisfaction (Regression Analysis)

Table 4 presents the regression results evaluating the impact of e-banking service quality on customer satisfaction.

Table 4: Regression Results – Impact of Service Quality on Customer Satisfaction

Predictor Variable	Beta (β)	t-value	p-value
Efficiency	0.31	4.12	0.000
Reliability	0.28	3.89	0.000
System Availability	0.21	3.01	0.003
Responsiveness	0.19	2.87	0.005
Security & Privacy	0.34	4.65	0.000

Ease of Use	0.32	4.28	0.000
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$R^2 = 0.68$

The regression model explains **68% of the variance ($R^2 = 0.68$)** in customer satisfaction, indicating strong explanatory power. All service quality dimensions have a statistically significant positive impact on satisfaction. **Security and Privacy ($\beta = 0.34$)** emerges as the most influential predictor, followed by **Ease of Use ($\beta = 0.32$)** and **Efficiency ($\beta = 0.31$)**. This confirms that technological trust, interface simplicity, and transaction speed are the dominant drivers of customer satisfaction in co-operative banks.

Comparative Performance of Selected Co-operative Banks

Figure 1 illustrates the comparative mean satisfaction scores across the selected banks.

Figure 1: Comparative Customer Satisfaction across Selected Co-operative Banks

(Bar chart showing means satisfaction scores)

Bank Name	Mean Satisfaction Score
Surat District Co-operative Bank	4.15
Surat People's Co-operative Bank	4.08
Surat National Co-operative Bank	3.92
Rajkot Nagrik Sahakari Bank	4.12
Sutex Co-operative Bank	4.22

Among the selected banks, **Sutex Co-operative Bank (4.22)** reports the highest customer satisfaction, reflecting superior digital adoption and service reliability. **Surat National Co-operative Bank (3.92)** records the lowest score, consistent with earlier compliance and service reliability issues highlighted in the thesis. Overall, all banks exhibit above-average satisfaction levels, indicating successful digital transformation within the co-operative sector of South Gujarat.

Key Findings

1. Customers exhibit a generally high level of satisfaction with e-banking services provided by selected co-operative banks.
2. Security and privacy, ease of use, and efficiency are the strongest determinants of customer satisfaction.
3. Responsiveness and grievance redressal mechanisms remain comparatively weaker service dimensions.
4. Significant inter-bank variations exist, with Sutex and Rajkot Nagrik Sahakari Bank outperforming others in digital service quality.

5. Service quality explains a substantial proportion of variation in customer satisfaction, confirming its strategic importance in co-operative banking.

5. Conclusion:

The present study examined the service quality of e-banking services and its impact on customer satisfaction in selected co-operative banks of South Gujarat, with specific reference to Surat city. The findings reveal that customers generally exhibit a high level of satisfaction with the e-banking services provided by these banks, indicating that co-operative institutions have made meaningful progress in digital service delivery despite resource and infrastructural constraints.

Descriptive analysis shows that security and privacy, ease of use, and efficiency are the highest-rated service-quality dimensions, reflecting strong customer confidence in transaction security, interface simplicity, and transaction speed. These results underscore the growing importance of technological trust and user-friendly digital platforms in shaping customer perceptions in the co-operative banking sector. Conversely, responsiveness emerged as the weakest dimension, suggesting that digital grievance redressal mechanisms and customer support services require further strengthening.

Correlation and regression analyses confirm that all e-banking service-quality dimensions have a significant and positive relationship with customer satisfaction. The regression model explains a substantial proportion of variance in satisfaction ($R^2 = 0.68$), indicating strong explanatory power. Among all dimensions, security and privacy emerged as the most influential predictor, followed by ease of use and efficiency, highlighting that customers prioritize data protection, simplicity of use, and fast service delivery in digital banking environments.

The comparative analysis across selected co-operative banks reveals notable inter-bank variations in satisfaction levels. Sutex Co-operative Bank reported the highest satisfaction score, reflecting superior digital adoption and service reliability, while Surat National Co-operative Bank recorded the lowest score, consistent with earlier service reliability and compliance concerns. These variations indicate that institutional commitment to technology investment and service innovation plays a critical role in shaping customer experience.

Overall, the study concludes that while co-operative banks in South Gujarat have achieved functional adequacy in digital platforms, strategic improvements in responsiveness, customer support, and service recovery mechanisms are essential to enhance overall satisfaction and sustain competitiveness. The findings provide valuable insights for bank

management and policymakers to strengthen customer-centric digital transformation in the co-operative banking sector.

Limitations of the Study

1. The study is confined to selected co-operative banks in Surat city, limiting geographical generalizability.
2. A convenience sampling technique was used, which may introduce selection bias.
3. The sample size of 100 respondents may restrict the robustness of the findings.
4. The study is cross-sectional and does not capture changes over time.
5. The analysis is based on self-reported data, which may be subject to respondent bias.

