# Navigating Digital Banking: Assessing The E-Service Quality On E-Customer Satisfaction In Kerala Based Private Sector Bank

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## ABSTRACT

The advancement of digital technologies has reshaped the world-wide banking sector, pushing conventional banking practices toward digital channels. In India's evolving financial environment, private sector banks are increasingly leveraging digital banking to boost customer interaction, streamline operations, and strengthen their market position. In this changing landscape, the quality of electronic services, or e-service quality, plays a vital role in influencing customer satisfaction and fostering long-term loyalty. This paper explores the influence of e-service quality on e-customer satisfaction of Dhanlaxmi digital banking customers in Kerala. The researcher used convenience sampling technique and responses were gathered from 504 digital banking customers of Dhanlaxmi banks operating in three districts of Kerala. The study applied percentage analysis, regression, ANOVA and Independent Sample t-test to examine the link between e-service quality and customer satisfaction. The study identified the determinants such as security, responsiveness, reliability, efficiency, and convenience affecting customer satisfaction in digital banking environment particularly in Dhanlaxmi digital banking customers.

*Keywords: Digital banking, Dhanlaxmi bank, E-customer satisfaction, E-service quality, Security.*

## 1. INTRODUCTION

India's banking sector has transformed highly since its establishment, evolving from traditional financial intermediaries to advanced, technology-based institutions. Commercial banks, small finance banks, payments banks, and co-operative banks are some of the many categorizations used to define the Indian banking sector. By providing financial services including credit, deposits, and payment options to people, companies, and the government, the banking sector contributes significantly to India's economic growth. Being the regulatory institution, the Reserve Bank of India (RBI) maintains financial stability and supports economic growth. Public Sector Banks (PSBs) and Private Sector Banks offers services to different customer segments and use different business methods. Although, PSBs are comes under supervision, they are crucial for promoting mobility and financial stability. Private sector banks provide innovative banking products and services, making best use of technology for efficient electronic transactions, mobile banking, and internet banking. Private banks are viewed as being more technology based by the customers, yet tend to have greater service charges and poor rural coverage in contrast with PSBs. While, PSBs provide financial security and carter to a large customer base, private banks emphasize better customer experience, operational excellence, and technological advancements. Thus, both categories of banks being an integral part of India's financial sector. (Nirmaljeet Virk, 2012).

Indian government launched the Digital India program in 2015 with the goal of transforming the country into a technologically advanced knowledge economy and society. The main objectives of this extensive project are to enhance internet connectivity, improve online infrastructure, and digitize individuals' access to government services. The development of digital infrastructure as a core utility is essential to ensure every individual has access to a secure and safe cyberspace, broadband internet, and a unique digital identity. Governance and on-demand services facilitate this core element

by allowing seamless departmental integration, facilitating real-time service access through online and mobile channels, and promoting cashless electronic transactions. To empower people digitally, there is a need to offer digital literacy to everyone, ensure that everyone is digitally literate, and involve individuals through participatory digital platforms. These efforts, when blended together, seek to establish a dynamic, inclusive digital space that can accommodate everyone's needs. Most of the programs that focus on boosting local manufacturing and reducing import dependence show the interrelation between Make in India and Digital India. Indian banks have embraced digitalization, which has enhanced clients' satisfaction and efficiency (Singh S. a., 2024). The banking industry's digitalization has made financial services more focused on customer, readily available and simple to do. Through programs like UPI and BHIM, both minimize the rely on conventional physical branches and increase convenience and the RBI promotes digital banking.

Adoption of digital domain in banking profoundly influences operations, customer services, and financial access, cutting expenses by facilitating more affordable digital payments than physical branch-based payments. Digitalization improves security and transparency in bank transactions using AI-powered fraud prevention, biometric identification, and block chain-based accounting books. (Murugun, 2023). The Indian banking has seen a paradigm change towards cashless transactions because, initiatives like UPI (Unified Payments Interface), internet mobile banking, and AI-driven financial services. The shift has been initiated by private sector banks, who have made significant investments in big data analytics to improve customer experience, block chain technology for safe transactions, automation, and AI- based customer support. Building a safe, cutting-edge, and customer-focused financial ecosystem will require cooperation from banks, fintech firms, and regulatory bodies. The manner that customers interact with banks and other financial organizations is entirely different from the present banking environment's quick embrace of digital technology. E-service quality is now a critical determinant of customer satisfaction as customers rely more and more on digital platforms for their banking needs.

Service quality encompasses the overall effectiveness of service delivery, which influences the level of satisfaction experienced by users of various services. There exists a direct correlation between customer satisfaction and service quality; high-quality service results in greater customer satisfaction, whereas poor service quality contributes to customer dissatisfaction.(Kamboj, 2022) . E-service quality as the extent to which a website offers an effective and efficient delivery of service and product. E-service quality is essential. It plays an important role in an organization's failure or success (Jyoti, 2020). E-service quality was more concentrated on website quality than on service quality in the online environment to develop an e-service quality scale consisting of six dimensions: Efficiency, Reliability, Privacy/Security, Responsiveness, Convenience, and Ease of use (Singh, 2019).

Customer satisfaction in digital banking influenced widely by convenience, efficiency, and security of digital financial services. By providing streamlined online transactions, customized services, and enhanced accessibility, which eliminates the need for in-person bank visits. Faster processing times and ease of use are highly regarded by customers since they improve their overall banking experience. Although concerns like customer service, data security, and service charges may have an effect on satisfaction levels. The banking sector is now more competitive than ever and the customer satisfaction I the greatest competitive strength for bank (Angusamy et al., 2022). The e-customer satisfaction act as a mediator is highly important, stressing how improving online service can lead to customer retention and satisfaction.

Dhanlaxmi Bank is a major private-sector bank with headquarters in Thrissur, Kerala India. The bank started in 1927 as a small operation to serve the local financial needs and evolved into a modern financial institution with a full range of banking and financial services. Its digital products comprise internet banking, mobile banking and e-commerce payment solutions, demonstrating its focus on technological upgradation and customer convenience (Narayan, 2024). The bank is highly customer-focused through provision of customized services and prompt customer service. Dhanlaxmi Bank has a customer focused strategy that aims at improving the quality of services and building long-term relationships. Through its e-banking, the bank facilities customer with convenience access to financial transactions, account management and other banking functions, mitigating the need to visit branches physically. Dhanlaxmi Bank has embraced digital transformation techniques in the last few years to keep up with the fast-changing nature of the financial industry. The bank also promotes financial inclusion by taking services to rural and semi-urban area, which also play a role on overall objective of digital and financial literacy in India. Here this study investigated navigating digital banking assessing the e-service quality on e-customer satisfaction in Kerala based private sector bank along with other relevant aspects of digital service performance and customer satisfaction.

The study's high validity indicates its reliability, suggesting it could provide valuable insights into optimizing service quality and enhancing bank strategies. Factors related service quality including reliability, efficiency, and convenience increase customer satisfaction in the banking industry. The digital shift in banking sector had redefined the delivery and consumption of financial services, rendering e-banking a critical point of contact for customers with convenience, accessibility and ease of use. The banking industry main aim is to earn profit through quality service to the customers and assuring, satisfaction. Customer satisfaction is the capacity in what way products and services delivered by a bank can meet the customer's needs. Quality customer service and satisfaction are recognized by banks as the most essential components for customer acquisition and retention. In today's competitive world, banks can attain a competitive advantage by providing superior services to their customers.(Gazi et al., 2021).

## 2. REVIEW OF LITERATURE

**(Linddsay Beanning, 2024)** examined the effect of e-service quality on customer satisfaction and loyalty in mobile applications in Indonesia focusing on BNI Bank. This research has utilized a sample size of 183 respondents, which has exceeded the minimum requirement of 155. Many factors have been identified and analysed such as security/privacy, perceived ease of use, efficiency, design, intention to use, word of mouth, and customer loyalty. Significant influences between these factors have been identified by using the Partial Least Square Structural Equation Model (PLS-SEM). The findings showed that customer satisfaction was significantly impacted by security/privacy, usability, efficiency, and design, all of which increased word-of-mouth, loyalty, and intention to use. However certain other factors did not show any impact on customer satisfaction such as perceived usefulness, sociality, enjoyment, responsiveness, and reliability. The study found that optimizing security, ease of use, design, and efficiency in online banking app had a significant effect, on customer satisfaction and loyalty. **(Mantri Avantika, 2024)** discussed the elements that influence customer satisfaction regarding banking services. It covers all the areas including customer service as an attribute of quality, convenience of banking services, levels of digitalization, reliability of transactions, fees charged, and value of service rendered. Using online surveys and questionnaires, the researchers polled 105 volunteers from Rajasthan and Madhya Pradesh. The research took into account multiple demographic elements including age groups and job positions alongside education levels and social variables to evaluate their influence on levels of satisfaction. The result of the research showed that customer satisfaction is influenced by service quality, convenience, modern technology, trust, reasonable fees, ease of online transactions, and good customer service. It also highlights the need for traditional banks to adapt their offerings to meet growing consumer expectations. The research findings indicated that strategies centred on efficiency, transparency, and customer engagement are suggested to build stronger relationships and enhance customer loyalty.

**(Hafsa Sherwani, 2024)** focused on empathy as a driver of e-banking service quality influencing consumer purchasing behaviour, through customer satisfaction. This study explores customer benefits of online banking, predicts their behaviour, and investigates how responsiveness, empathy, and dependability affect satisfaction and purchase intention. The research was conducted using a sample size of 150 bank customers, selected through convenience sampling. A descriptive technique is used in this study and surveys employing a 7-point Likert scale are used to collect data. This study also analysed how demographic factors such as age, gender, and education influenced these relationships. Several key factors were identified including reliability, empathy, responsiveness, customer satisfaction, and purchase intention. The findings suggested that whereas empathy directly affected consumer satisfaction, it also acted as a mediator between satisfaction and purchase intention. The study found that e-banking service quality significantly influences customer satisfaction and purchase intention, emphasizing the need for banks to prioritize customer-centric approaches to improve their services. **(Joshi et al.2024)** investigated customer perceptions and adaptability to digital banking in India. the objective includes understanding customers' perception of digital banking adaptability determine factor influencing digital adoption and to measure customer satisfaction with online banking services. The study uses a descriptive research design with a sample of 150 customers from 4 public and 4 private sector bank employing stratified sampling method. The key findings suggested that private sector banks are seen to be more technologically advanced compared to public sector bank with 65% of the respondents preferring private banks. The study highlights the importance of security and affordability in digital banking, with customer satisfaction varying between public and private banks. However, public sector banks are behind in technology adoption and customer satisfaction, particularly in mobile and internet banking due to issues like website freezing and restricted ATM services. The conclusion emphasis that although Indian banks are making progress in digital adoption, public sector banks need to speed up their technological upgradation to global standards in order to enhance customer satisfaction.

**(Saraswati & Singh, 2024)** investigated the impact of e-banking service attributes—accessibility, convenience, and security—on customer satisfaction in public sector banks. The research seeks to examine customer awareness and the relationship between e-banking services and customer satisfaction and explore the demographic variables such as age, sex, income, and education. Study uses primary data collected via a structured questionnaire from 165 participants in Palwal, Haryana, using the convenient sampling technique. Factor analysis, ANOVA, and regression analysis were used for data interpretation. Findings show a positive impact of accessibility, convenience, and security on customer satisfaction, with significant demographic variations in perception. The conclusion highlights that the enhancement of e-banking dimensions can highly improve customer satisfaction in public sector banks, particularly if designed to address demographic variation. **(Narayan, 2024)** examined the factors influencing customer satisfaction in e-banking services. The study aimed to identify that the factor affecting customer satisfaction, assess the challenges faced by the customers and determine the features that enhance e-banking service quality. A survey method was employed collecting primary data from 180 participants using a connivance sampling technique. Factors identified in the study contain convenience, ease of transactions, accessibility, security and service responsiveness. The findings indicate most customer found e-banking service is beneficial with convenience and security being a factor in customer satisfaction. However, the study found no significant relationship between income levels and recommendations for online banking. The conclusion pointed out that e-banking has enhanced service quality, particularly in security and accessibility. **(Bashar Yaser Almansour, 2023)** examined the factors that affect the level of customer satisfaction with e-banking services in Libyan banks. These are perceived ease of use, perceived usefulness, and perceived credibility, along with customer attitude toward e-banking services. A sample size of

215 e-banking users from Libya was applied. The data was collected through an online questionnaire to measure customer's perception and to assess customer's perception using a 5-point Likert scale. The results showed that all the main factors had a positively significant effect on customer satisfaction. The study suggests Libyan banks should enhance customer attitudes towards online banking through improved advertisements, user interfaces, security measures, and convenience to boost confidence and adoption of digital banking solutions.

**(Dhruba Kumar Gautam, 2023)** examined the relationship and effect between practices of online banking services on e-customer satisfaction and e-customer loyalty. It has tried to examine the relationship between different dimensions of online banking service quality and its impact on customer satisfaction and loyalty. It was carried out with a sample size of 384 respondents, randomly stratified from 475 questionnaires that were distributed. Data was analysed using SPSS and AMOS. The study used five dimensions e-customer service, site of organization, website efficiency, user-friendliness, security, and privacy to measure online banking service quality based on the E-SQUAL model. This study's result clarified the most important aspects of online banking service practices, which were website efficiency and e-customer care, regarding which, further ranked, were site organization, security and privacy, and user-friendliness. The study found that e-customer satisfaction significantly influences the relationship between online banking service practices and loyalty. The results indicated that in order to increase e-customer satisfaction and loyalty, Nepalese banks should make investments in enhancing the websites usability, effectiveness, and customer service features. **(Angusamy et al., 2022)** examined the factors that influence customer satisfaction in e-banking services. The study focused on elements such as security and privacy, responsiveness, reliability, and ease of use to determine their impact. 200 responses were collected using the convenience sampling method. The sample included individuals who had experience using digital banking services as well as those who had never used them. Data were analysed using SPSS, and multiple regression analysis was performed. The study identified four major elements that affect e-banking customer satisfaction by using SERVQUAL and Technology Acceptance Model (TAM). The study's findings showed that, in e-banking services, ease of use is less important, and security, privacy, responsiveness, and reliability significantly enhance customer satisfaction. The study concluded that while ease of use might not be sufficient to raise customer satisfaction levels in e-banking, improving security, quick response times, and dependable services can greatly enhance customer satisfaction. **(Islam et al., 2021)** investigated the impact of various dimensions of service quality: reliability, responsiveness, visibility, employee commitment, and access to service on customer satisfaction within the private banking industry. It also considered the link between customer satisfaction and loyalty. 200 valid customer responses from private banks. Standard questionnaires and statistical methods like structural equation modelling (SEM) and confirmatory factor analysis (CFA) were used in the study. The research verified that there existed five key principle dimensions of service quality: accuracy, responsiveness, visibility, staff dedication, and accessibility, where employee dedication, responsiveness, and visibility had a significant impact on customer satisfaction. Customer satisfaction is crucial for loyalty, with student customers showing lower satisfaction. Banks can improve satisfaction by investing in staff training and service visibility. Private banks should prioritize staff training, leverage technology, and focus on client interaction. Future research should consider cross-national comparisons and online banking service quality.

**(Fida et al., 2020)** elucidated the impact of service quality on customer loyalty and customer satisfaction using SERVQUAL model on four major Islamic banks in the Sultanate of Oman. The research aimed to assess the service quality of Islamic banks and its impact on customer satisfaction and loyalty. Using a quantitative methodology, data was collected from 120 customers of Oman Islamic Bank through a self-administered questionnaire and analysed with SPSS, employing correlation and regression tests. The findings revealed a positive relationship between service quality, customer satisfaction, and loyalty, with empathy and responsiveness being particularly influential. The study concluded that improving service quality, especially through enhanced empathy and responsiveness, significantly boosts customer satisfaction and loyalty. It recommended that banks focus on these aspects, along with reliability, assurance, and tangibles, while continuously innovating their digital banking services and customer engagement strategies. **(Raza et al., 2020)** examined the impact of internet banking service quality on e-customer loyalty and e-customer satisfaction. The study looked at the structural link between the aspects of service quality and how customers' perception on their online banking experience. Partial Structural Equation Modelling (PLS-SEM) examined data from 500 active users of online banking services. Key dimensions included responsiveness, reliability, efficiency, personal needs, site organization, and user-friendliness. Results showed that all service quality dimensions positively impacted e-customer satisfaction and loyalty. Efficiency and responsiveness were key determinants of satisfaction. Improving internet banking services quality enhances customer satisfaction and loyalty, suggesting banks invest in efficient delivery, user-friendly platforms, and personalized services. **(Singh, 2019)** assessed the quality of online banking e-services and investigate how they relate to Indian customer satisfaction. It aimed to determine the key factors that affect the quality of e-services and evaluate their impact on client satisfaction. The aspect of Internet banking service quality was identified through the application of exploratory and confirmatory factor in the analysis of data. The association between customer satisfaction and e-service quality parameters was also examined using multiple regression analysis. Three key dimensions of e-service quality in Internet banking were identified: responsiveness, efficiency, and perceived credibility. The key customer satisfaction measurement among them was being responsive. Based on this study, responsiveness, followed by efficiency, and perceived trustworthiness should be prioritized by banks if their online banking is to be enhanced. This involves creating secure, easy-to-use, installing strong security features, expanding services and

funding for consumer education. These improvements can potentially increase client loyalty and satisfaction, which will improve the entire banking experience. **(Zavareh et al., 2012)** analysed the effect of e-service quality (e-SQ) on e-customer satisfaction (e-CS) in Iranian internet banking. The E-SERVQUAL scale was tested to evaluate e-SQ and its impact on e-CS. The study involved 392 users from four major public banks in Iran, with a response rate of 76%. The study identified six primary factors affecting e-SQ: efficient and reliable services, fulfilment, security/trust, site aesthetics, responsiveness/contact, and ease of use. Security/trust, site aesthetics, and ease of use significantly impacted e-CS. The results suggest that E-SERVQUAL is suitable for measuring e-SQ in Iranian internet banking, but further modifications are needed. The study concluded that a customized version of the E-SERVQUAL model significantly improved e-service quality and client satisfaction, offering recommendations for improving service delivery and customer experience.

## 3. OBJECTIVES

- To identify the factors influencing e – service quality with e-banking services offered by Dhanlaxmi Bank using factor analysis.

- To examine the correlation between e-service quality and customer satisfaction among customers of Dhanlaxmi Bank.

- To evaluate the impact of e-service quality on the overall satisfaction of customers in Kerala through regression analysis.

## 4. RESEARCH METHODOLOGY

The study explores the relationship between e-service quality and e-customer satisfaction of Dhanlaxmi Banking customers in Kerala. The researcher used a convenience-sampling method for the collection of primary data. The primary data are collected from 504 Dhanlaxmi banking customers by using google form. The researcher selected three district of Kerala; Kannur (North Zone), Ernakulam (Central Zone), and Alappuzha (South Zone). The survey based on self-administered questionnaire comprising 24 statements and demographics details along with key factors influencing e-service quality and e-customer satisfaction. To analyse the collected data, the research employed Independent Sample t-test, regression, ANOVA, and simple percentage analysis.

## 5. DATA ANALYSIS AND INTERPRETATION

**Table 1: Demographic Profile of Respondents**

| Variable | Description | Frequency | Percentage |
|---|---|---|---|
| Age | 18-24 | 363 | 72.0 |
| | 25-34 | 97 | 19.2 |
| | 35-44 | 14 | 2.8 |
| | 45-above | 30 | 6.0 |
| | **Total** | **504** | 100.0 |
| Gender | Male | 389 | 77.2 |
| | Female | 115 | 22.8 |
| | **Total** | **504** | 100.0 |
| Location | Kannur | 149 | 29.6 |
| | Alappuzha | 190 | 37.7 |
| | Ernakulam | 165 | 32.7 |
| | **Total** | **504** | 100.0 |
| Occupation | Students | 307 | 60.9 |
| | Private Sector Employee | 146 | 29.0 |
| | Government Employee | 42 | 8.3 |
| | Self-employed | 9 | 1.8 |

Arathy Saboo, Gayathri P, Dr. Sujith T. S

| | | | |
|---|---|---|---|
| | Total | 504 | 100.0 |
| Income | Below Rs.25,000 | 282 | 56.0 |
| | Rs.25000–Rs.50,000 | 92 | 18.3 |
| | Rs.50,000–Rs.75,000 | 50 | 9.9 |
| | Rs.75,000–Rs.1,00,000 | 67 | 13.3 |
| | Above Rs.1,00,000 | 13 | 2.6 |
| | Total | 504 | 100.0 |

(Source: Computed Data)

Table 1 shows the demographic profile of the 504 participants, indicating that the majority (72%) fall in the age group of 18 to 24 years and have a predominantly female sample (77.2%). Region-wise, the respondents are divided into Kannur (29.6%), Alappuzha (32.7%), and Ernakulam (37.7%). Respondents are mainly students (60.9%) and then employees in the private sector (29%). Income-wise wise more than half (56%) have earnings less than Rs. 25,000 which corresponds to a mostly individuals with lower income levels and economically dependent sample. This demographic composition indicates that the study is largely capturing the view of the younger or economically dependent groups, perhaps students or early-career individuals. Fewer respondents belong to the higher economic groups, with a mere 2.6% earning above Rs. 1,00,000.

**Table 2: Reliability Test**

| Variables | No of Items | Cronbach's Alpha |
|---|---|---|
| Security and Privacy | 3 | 0.695 |
| Responsiveness | 3 | 0.732 |
| Reliability | 3 | 0.669 |
| Efficiency | 3 | 0.837 |
| Ease of Use | 3 | 0.733 |
| Convenience | 3 | 0.756 |
| E-Customer Satisfaction | 6 | 0.846 |

(Source: Computed Data)

Table 2 shows the reliability analysis. Construct internal consistency is generally considered acceptable to good, demonstrated through Cronbach's Alpha scores for the constructs Efficiency (0.837) and E-Customer Satisfaction (0.846) displayed good internal consistency with values above the 0.80 threshold. The Responsiveness (0.732), Ease of Use (0.733), and Convenience (0.756) demonstrated acceptable reliability within a range of 0.70 and 0.80. The constructs of Security and Privacy (0.669) indicated slightly lower values, falling just below the acceptable threshold of 0.70, suggesting some reduced internal consistency in these constructs. However, the values are considered marginally acceptable for exploratory research. Based on these results, it is reasonable to conclude that most constructs showed sufficient reliability for subsequent analysis.

*H01: There is no significant difference between the Gender of the respondent and E-Service Quality*

**Table 3: Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) |
| E-Service quality | Equal variances assumed | 2.785 | 0.096 | -6.056 | 502 | .000 |

Arathy Saboo, Gayathri P, Dr. Sujith T. S

| | | | | -6.122 | 189.657 | .000 |
|---|---|---|---|---|---|---|
| | Equal variances not assumed | | | | | |

(Source: Computed Data)

Table 3 shows that the Independent Samples Test shows that equal variances can be assumed (p = 0.096). The t-test result (t = -6.056, p < 0.001) indicates a significant difference in E-Service Quality (ESQ) between the groups. The mean difference is -0.34879, with a 95% confidence interval ranging from -0.46194 to -0.23563.

**H02: There is no significant difference between the Gender of the respondent and E-Customer Satisfaction**

**Table 4: Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) |
| E-Customer Satisfaction | Equal variances assumed | 0.338 | 0.561 | -4.476 | 502 | .000 |
| | Equal variances not assumed | | | -4.419 | 183.108 | .000 |

(Source: Computed Data)

Table 4 shows that the Independent Samples Test was conducted to compare the means of two groups for the variable E-Customer Satisfaction. Levene's Test for Equality of Variances yielded an F-value of 0.338 with a significance (Sig.) value of 0.561, which is greater than 0.05, indicating that the assumption of equal variances is met. Therefore, we interpret the results under "Equal variances assumed." The t-test shows a t-value of -4.476 with 502 degrees of freedom and a significance (2-tailed) value of 0.000, which is less than 0.05. This indicates that there is a statistically significant difference between the means of the two groups. The mean difference is -0.25577 with a standard error of 0.05714. The 95% confidence interval for the difference ranges from -0.36804 to -0.14350, suggesting that the true mean difference is negative and does not cross zero, further confirming the significant difference between the groups.

**H03: There is no significant difference between the Age and E-Customer Satisfaction and E-Service Quality**

**Table 5: ANOVA**

| Demographic Variables | | Sum of Squares | df | Mean Square | F | Sig. (p-value) |
|---|---|---|---|---|---|---|
| E-Customer Satisfaction | Between Groups | 4.190 | 3 | 1.397 | 4.747 | .003 |
| | Within Groups | 147.118 | 500 | .294 | | |
| | Total | 151.308 | 503 | | | |
| E-Service Quality | Between Groups | 7.933 | 3 | 2.644 | 8.776 | .000 |
| | Within Groups | 150.667 | 500 | .301 | | |
| | **Total** | 158.600 | 503 | | | |

(Source: Computed Data)

A one-way ANOVA was conducted to examine whether there are significant differences between groups for the variables E-Customer Satisfaction and E-Service Quality. For E-Customer Satisfaction, the ANOVA results show that the between-groups sum of squares is 4.190 with 3 degrees of freedom, resulting in a mean square of 1.397. The F-value is 4.747 with a significance (Sig.) value of 0.003, which is less than 0.05. This indicates that there a statistically significant differences in E-Customer Satisfaction between the groups. Similarly, for E-Service Quality, the between-groups sum of squares is 7.933 with 3 degrees of freedom, leading to a mean square of 2.644. The F-value is 8.776, with a significance value of 0.000, also less than 0.05, indicating significant differences between the groups in terms of E-Service Quality. Overall, the results suggest

that group membership has a statistically significant effect on both E-Customer Satisfaction and E-Service Quality scores.

***H04: There is no significant impact of e-service quality (ESQ) factors such as security, efficiency, responsiveness, ease of use, convenience, and reliability on the e-customer satisfaction (ECS) in the context of Dhanlaxmi Mobile Banking.***

**Table 6: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson | |
|-------|---|----------|-------------------|----------------------------|---------------|--|
| 1 | .934a | 0.873 | 0.871 | 0.19688 | 1.981 | |
| a. Predictors: (Constant), Responsiveness, Ease of Use, Convenience, Reliability, Efficiency, Security and Privacy. | | | | | | |
| b. Dependent Variable: E-Customer Satisfaction | | | | | | |

(Source: Computed Data)

The table 6 shows that the predictors, Responsiveness, Ease of Use, Convenience, Reliability, Efficiency, Security and Privacy explain a large amount of variance in the dependent variable, E-Customer Satisfaction. The R-value of 0.934 implies a very strong positive relationship between the predictors and E-Customer Satisfaction. The R-squared value of 0.873 implies that about 87.3% of the variation in E-Customer Satisfaction is explained by the independent variables in the model. The adjusted R-squared value of 0.871 is adjusted for the number of predictors and gives slightly more conservative measures of the explanatory power of the model. The standard error of the estimate (0.19688) is the average distance that the observed values deviate from the regression line, and a smaller value indicates a better fit. Finally, the Durbin-Watson statistic of 1.981 is near 2, indicating that the assumption of the model regarding the errors is reasonably met, and overall, the model fits the data well.

**Table 7: ANOVA Of Regression**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|--|----------------|----|-----|---|------|
| 1 | Regression | 132.044 | 6 | 22.007 | 567.757 | .000 |
| | Residual | 19.265 | 497 | .039 | | |
| | Total | 151.308 | 503 | | | |

(Source: Computed Data)

The table 7 shows the result of the ANOVA of regression, it shows the p value (Sig.) is below the acceptance limit (P>0.05). This model shows the P value of 0.000. Therefore, the model provides valuable insight into the factors influencing customer satisfaction, confirming that the included predictors are important and contribute significantly to the explanation of E-customer satisfaction.

**Table 8: Coefficients**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|-------|------|------------|---------------------------|---|------|-----------|-----|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | .246 | .065 | | 3.799 | .000 | | |
| Responsiveness | .272 | .024 | .310 | 11.520 | .000 | .354 | 2.828 |
| Ease of use | .128 | .028 | .133 | 4.643 | .000 | .312 | 3.202 |
| Convenience | .097 | .031 | .112 | 3.170 | .002 | .204 | 4.909 |

| Reliability | .428 | .041 | .485 | 10.520 | .000 | .120 | 8.305 |
| Efficiency | .057 | .024 | .084 | 2.412 | .016 | .212 | 4.714 |
| Security and Privacy | .068 | .017 | .089 | 4.053 | .000 | .528 | 1.894 |
| a. Dependent Variable: E-Customer Satisfaction | | | | | | | |

Source: Computed Data

Table 8 shows that all predictors, such as Responsiveness, Ease of use, Convenience, Reliability, Efficiency and, Security and Privacy significantly influence e-customer satisfaction. Reliability stands out as the most significant positive predictor among them ($\beta = 0.485$, $p < 0.001$), suggesting that reliable and consistent service is essential for raising customer satisfaction. There are also notable positive effects for responsiveness ($\beta = 0.310$, $p < 0.001$), ease of use ($\beta = 0.133$, $p < 0.001$), convenience ($\beta = 0.112$, $p = 0.002$), and security and privacy ($\beta = 0.089$, $p < 0.001$), indicating that prompt support, user-friendly design, accessible services, and safe transactions all significantly improve the customer experience. The efficiency and satisfaction have a slight relationship ($\beta = 0.084$, $p = 0.016$). The variance inflation factors (VIF) are within reasonable bounds, indicating that multicollinearity is not a significant issue for the model. Overall, the results show how crucial it is to improve user experience, responsiveness, and reliability to raise e-customer satisfaction.

***Ho5: There is no significant impact of e-service quality (ESQ) on the e-customer satisfaction (ECS) in the context of Dhanlaxmi Mobile Banking***

**Table 9: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson | |
|---|---|---|---|---|---|---|
| 1 | .912[a] | .832 | .831 | .22519 | 1.850 | |
| a. Predictors: (Constant), E-Service Quality | | | | | | |
| b. Dependent Variable: E-Customer Satisfaction | | | | | | |

(Source: Computed Data)

Table 9 shows the model summary with the R value of 0.912 and an $R^2$ value of 0.832, which demonstrates a strong positive correlation between e-service quality (ESQ) and e-customer satisfaction (ECS). This indicates that e-service quality accounts for 83.2% of the variance in customer satisfaction. A good fit is indicated by the Adjusted $R^2$ (0.831), which is quite close to $R^2$. There appears to be no significant autocorrelation in the residuals, as indicated by the Durbin-Watson statistic of 1.850.

**Table 10: ANOVA Of Regression**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 125.851 | 1 | 125.851 | 2481.750 | .000[b] |
| | Residual | 25.457 | 502 | .051 | | |
| | Total | 151.308 | 503 | | | |
| a. Dependent Variable: E-Customer Satisfaction | | | | | | |
| b. Predictors: (Constant), E-Service Quality | | | | | | |

(Source: Computed Data)

Table 10 shows regression model is statistically significant, as shown by a high F-value of 2481.750 and a p-value of 0.000. This indicates that the null hypothesis is rejected because the regression model as a whole predicts customer satisfaction significantly.

**Table 11: Coefficients**

Arathy Saboo, Gayathri P, Dr. Sujith T. S

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | .395 | .069 | | 5.757 | .000 | | |
| | ESQ | .891 | .018 | .912 | 49.817 | .000 | 1.000 | 1.000 |
| a. Dependent Variable: E-Service Quality | | | | | | | | |

(Source: Computed Data)

Table 11 shows the coefficient table. With a standardized beta of 0.912, t-value of 49.817, and p-value $< 0.001$, the coefficient table demonstrates that e-service quality significantly improves customer satisfaction. According to the unstandardized coefficient (B=0.891), ECS rises by 0.891 units for every unit increase in ESQ. A dependable predictor is indicated by the absence of multicollinearity (VIF = 1.000).

## 6. FINDINGS

This study aimed to evaluate the relationship between e-service quality and e-customer satisfaction with Dhanlaxmi Bank's digital banking services. The demographic profile of the study revealed that most respondents were young (18 – 24 years), mostly students, and came from low-income demographic backgrounds, mostly from the districts of Kannur, Alappuzha, and Ernakulam. There was significant difference between gender when it comes to customer satisfaction and e-service quality based on independent sample t-test, where men were more satisfied. There is a major effect of age on ESQ and ECS as revealed by the ANOVA test which means perception differ according to age. The reliability analysis of this study established a good level of internal consistency for almost all constructs, particularly with regard to efficiency and e-customer satisfaction. Customer satisfaction was significantly positively predicted by reliability, responsiveness, ease of use, convenience, and security in multiple regression analysis, with reliability being the most powerful predictor. Interestingly, there was a fall-off in efficiency, perhaps from rushed or bureaucratic service. predictive capability was well-supported by the fact that the one predictor variance while the combined regression model using all ESQ factors explained 87.3% of the variance.

## 7. SUGGESTION

The study found that reliability was the most significant driver of satisfaction, thus maintaining smooth performance, correct transactions, and least downtime needs to be a priority. Responsiveness and ease of use were also top priorities, indicating need for fast customer service and easy app user interface. Making convenience more through characteristics such as biometric authentication and smooth transaction along with keeping strong security and privacy can further establish trust of customers interestingly, efficiency had weak negative impact, possibly because of fear of hugely speedy or impersonal service, indicating necessity of speediness-humanness balance. Since most users belonged to 18-24 age group with lesser income levels, providing student-centric features or cheap services might help boost satisfaction. Overall, an emphasis on reliability, simplicity, responsiveness, and trust can contribute a lot to the robustness of customer experience in mobile banking.

## 8. CONCLUSION

The dimensions of e-service quality play an important role in influencing e-customer satisfaction within the context of Dhanalakshmi banks digital banking. Acceptance of digital channels has dramatically boosted the customer base of banks so that they are now able to offer financial products even in geographically distant rural locations Some service dimensions including reliability, responsiveness, ease of use, convenience and security were reported to have positive effect on customer satisfaction. Dimension's reliability comes forth as the strongest factor nothing the supreme demand for reliable and consistent digital banking experiences. Furthermore, demographic features such as age and gender contribute substantially to customer attitude towards service quality and satisfaction. The study highlights the demand for bank to maintain their digital platforms updated with customer expectations and competitiveness in the increasingly digitalized financial sector.

## 9. LIMITATION AND SCOPE FOR FURTHER RESEARCH

This study has several limitation including the use of convenience sampling which may affect the generalizing of the findings as the sample was largely low-income young students from some districts in Kerala. The study also tested e-service quality determinants without considering other potential determinants of customer satisfaction like brand perception or digital literacy. Subsequent studies may overcome these limitations by utilizing a more representative and diverse sample, contrasting e-service quality of various banks, and investigating other determinants of satisfaction. Longitudinal designs and quantitative approaches may provide further insight into the dynamics of customer satisfaction across time.

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