**Original Research Article**

**Customer Satisfaction on E- Banking: Basis for Action Plan**

**ABSTRACT**

|  |
| --- |
| This study assessed the level of customer satisfaction on e-banking services among government employees in Cateel, Davao Oriental using the SERVQUAL model. The study focused on five service quality dimensions: efficiency and ease of use, reliability, security and privacy, responsiveness and communication, and empathy. A descriptive-comparative research method was employed with a validated survey tool administered to 185 respondents. Findings revealed a high overall level of satisfaction, with efficiency and ease of use rated highest and responsiveness lowest. No significant differences were observed across demographic variables. A proposed action plan addresses service gaps, particularly in responsiveness, to improve user experience in rural banking contexts. |

*Keywords: customer satisfaction, action plan, and e- banking*

**1. INTRODUCTION**

In today’s fast-paced digital era, e-banking has become an essential component of financial management, offering convenience, accessibility, and efficiency. The ability to conduct transactions anytime and anywhere has transformed how customers interact with banks. As banks increasingly shift toward digital platforms, understanding customer satisfaction is vital to ensuring continued engagement and loyalty (Sathiyavany & Shivany, 2018).

Key factors influencing e-banking satisfaction include platform usability, service reliability, and responsive customer support. Alalwan et al. (2016) emphasize that users are more likely to remain loyal if the platform is easy to navigate and support is readily available. Similarly, features such as intuitive mobile apps and responsive websites enhance user experience and satisfaction (Khadka & Maharjan, 2017).

Security remains a top concern for digital banking users. Strong measures such as two-factor authentication and encryption are necessary to protect customer data and build trust. When users feel secure, satisfaction and adoption rates improve significantly (Tahtamouni, 2023). In the Philippines, e-banking has reshaped the financial landscape by making services more accessible, especially in remote regions (Llanto et al., 2018). As digital tools continue to evolve, customer satisfaction has become a key metric for competitiveness in the banking sector. Mendoza and Silva (2021) found that speed, safety, and simplicity are the top drivers of satisfaction. Additionally, Phakathi (2023) underscores the role of satisfaction in fostering customer retention.

However, the digital divide remains a challenge, particularly in underserved communities. Gonzales (2016) noted that limited internet access and low digital literacy hinder satisfaction, while Pazarbasioglu et al. (2020) called for more inclusive services to bridge these gaps. These findings highlight the importance of assessing satisfaction across diverse user groups. Personalized service is another emerging driver of satisfaction. Tailored experiences, such as individualized recommendations and support, strengthen customer relationships and loyalty (Bock, Mangus, & Folse, 2016). Especially in rural areas like Cateel, Davao Oriental, where infrastructure and digital skills may be limited, personalized service can compensate for technological shortcomings. Li and Kostka (2022) argue that unstable connectivity and limited tech familiarity reduce e-banking satisfaction in rural settings.

Therefore, accessible features like simplified navigation, offline capabilities, and real-time assistance are critical. Security features such as multi-factor authentication also build trust (Mostafa et al., 2023), while consistent system performance remains essential (Sarrab et al., 2016). Moreover, responsive customer support and feedback integration improve user experience and service quality (Law, 2024; Gupta, 2024).This study aims to examine the factors affecting customer satisfaction in e-banking within the Philippine context, with particular focus on rural users. It explores how usability, security, and support contribute to satisfaction and identifies demographic variations in user experience.

**2. OBJECTIVES**

This research aims to achieve the following objectives:

1. To determine the profile of the respondents in terms of:

a. age;

b. sex;

c. occupation;

d. employment status;

f. monthly income;

g. nature of transaction;

h. frequency of transaction.

2. To assess the level of customer satisfaction with e-banking services as perceived by the respondents in terms of:

efficiency and ease of use;

a. reliability;

b. security and privacy;

c. responsiveness and communication;

d. satisfaction with the quality of service.

3. To identify if there is any significant difference in the level of satisfaction with e-banking services when respondents are grouped according to:

a. age;

b. sex;

c. occupation;

employment status;

d. monthly income;

e. nature of transaction;

f. frequency of transaction.

4. To propose an action plan based on the results of the study that can help improve customer satisfaction with e-banking services.

**3. MATERIALS AND METHODS**

**Research Design**

This study utilized a descriptive-comparative survey design to assess customer satisfaction with e-banking services among government employees in Poblacion, Cateel, Davao Oriental. It aimed to evaluate satisfaction across five key service quality dimensions: efficiency and ease of use, reliability, security and privacy, communication and timeliness, and overall service quality. Additionally, the study examined whether satisfaction levels differed significantly based on demographic variables.

Data were gathered using a structured questionnaire adapted from Hammoud et al. (2018), which assessed various aspects of service quality through statements rated on a five-point Likert scale. Slovin’s formula was used to determine the appropriate sample size. Descriptive and inferential statistical methods, including mean, t-test, and ANOVA, were applied to analyze the data and identify which service attributes most significantly influenced customer satisfaction with e-banking platforms.

**Research Instrument**

This study employed a descriptive-comparative quantitative design using a structured questionnaire adapted from Hammoud et al. (2018) to assess customer satisfaction with e-banking services. The instrument consisted of statements rated on a five-point Likert scale, where 1 indicated “strongly disagree” and 5 indicated “strongly agree.” This format enabled respondents to express the intensity of their agreement and allowed for easier quantification and analysis of satisfaction levels.

The survey targeted government employees in Poblacion, Cateel, Davao Oriental. It was divided into two main parts: the first collected demographic data such as age, gender, government occupation, employment status, monthly income, transaction type, and frequency of e-banking usage; the second evaluated satisfaction using five SERVQUAL dimensions.

**Respondents of the Study**

The respondents of this study were government employees whose workplace was located in Poblacion, Cateel, Davao Oriental, and who regularly used e-banking services, including online banking, mobile applications, and other digital platforms offered by local financial institutions. A diverse group was selected based on demographic variables such as age, gender, occupation, employment status, monthly income, transaction type, and frequency of e-banking use. This demographic segmentation was intended to ensure a comprehensive understanding of how different user groups perceive and experience e-banking services. As noted by Alalwan et al. (2017), factors such as age, gender, and income may significantly influence satisfaction levels in digital banking contexts.

**Table 1**Respondents

|  |  |  |
| --- | --- | --- |
| **Government Employees** | **Population** | **No. of Respondents** |
| Teachers | 213 | 68 |
| Local Government Unit | 207 | 67 |
| Health workers | 100 | 50 |
| **TOTAL SAMPLE SIZE** | 460 | 185 |

**Data Gathering**

In gathering the data for this study, several systematic steps were followed to ensure ethical and accurate research outcomes. First, ethical clearance was secured from the University’s Research Ethics Board (UREB) to safeguard the rights and confidentiality of all respondents. The participants were carefully identified, focusing on government employees in Poblacion, Cateel, who use e-banking services to ensure a representative sample. Permission was then requested by sending official letters to the relevant banks and institutions, clearly stating the study’s purpose and seeking consent to proceed. Once approval was granted, questionnaires were distributed with consideration for the respondents' time and convenience. After completion, the surveys were retrieved, and participants were thanked for their cooperation. The data collected were then thoroughly organized and analyzed using statistical methods to maintain the accuracy, validity, and reliability of the results.

**4. RESULTS AND DISCUSSION**

**Profile of the Respondents**

This section outlines the demographic profile of e-banking respondents, focusing on variables that may impact their satisfaction with the services. The key characteristics analyzed include age, sex, type of government occupation, employment status, monthly income, and type of account held. Understanding these factors offers essential context for interpreting differences in satisfaction levels and helps establish a clearer picture of the users' backgrounds and how these may relate to their e-banking experiences.

#### **Table 2.** Demographic profile of the respondents in terms of age

|  |  |  |
| --- | --- | --- |
| **Age** | **Frequency** | **Percent** |
| 25 years old and below | 12 | 6.49 |
| 26 to 35 years old | 61 | 32.97 |
| 36 to 45 years old | 61 | 32.97 |
| 46 to 55 years old | 26 | 14.05 |
| 56 years old and above | 25 | 13.51 |
| **Total** | **185** | **100.00** |

In terms of age, the majority of respondents fell within the 26 to 45 age range—specifically, 32.97% were aged 26–35 and another 32.97% were aged 36–45—making this group the most active users of e-banking platforms. This aligns with the findings of Hammoud et al. (2018), who noted that younger and mid-career individuals are generally more adaptable to digital financial services due to their greater familiarity with technology. Similarly, Chaimaa et al. (2021) emphasized that age significantly influences attitudes toward e-banking, with middle-aged users often valuing speed and accessibility as key service attributes.

#### **Table 3.** Demographic profile of the respondents in terms of sex

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Sex** | **Frequency** | **Percent** |
| Female |  | 103 | 55.68 |
| Male |  | 82 | 44.32 |
|  | **Total** | **185** | **100.00** |

With respect to sex, 55.68% of the respondents were female, while 44.32% were male. This slight female majority indicates that women in government employment are actively engaged with e-banking services. Sathiyavany and Shivany (2018) asserted that gender does not significantly impact the adoption of digital banking when platforms prioritize accessibility and user-friendliness. Similarly, Rane et al. (2024) highlighted that the gender gap in digital finance is steadily narrowing as mobile banking technologies become more inclusive and intuitive for all users.

##### **Table 4.** Demographic Profile of the Respondents in terms of Government Occupation

|  |  |  |
| --- | --- | --- |
| **Government Occupation** | **Frequency** | **Percent** |
| Teacher | 68 | 36.76 |
| LGU Employee | 67 | 36.22 |
| Health Worker | 50 | 27.03 |
| **Total** | **185** | **100.00** |

For occupation, the sample consisted of teachers (36.76%), LGU employees (36.22%), and health workers (27.03%). This relatively even distribution across occupational groups suggests that e-banking is widely adopted regardless of job type. This supports the findings of Hammoud et al. (2018), who highlighted the increasing relevance of occupation-neutral digital financial tools, emphasizing that e-banking services are designed to cater to a broad spectrum of users within the modern banking ecosystem.

#### **Table 5.** Demographic Profile of the Respondents in terms of Employment Status

|  |  |  |
| --- | --- | --- |
| **Employment Status** | **Frequency** | **Percent** |
| Regular | 149 | 80.54 |
| Casual | 15 | 8.11 |
| Job Order | 21 | 11.35 |
| **Total** | **185** | **100.00** |

In terms of employment status, 80.54% of the respondents held regular positions, while 11.35% were job order employees and 8.11% were casual workers. The predominance of regular employees suggests that individuals with more stable and consistent financial needs are more actively engaged with e-banking services. This observation is supported by Chaimaa et al. (2021), Singh and Srivastava (2020), and Velasco et al. (2024), who emphasized that job security and income stability are positively associated with higher adoption of digital technologies, as financially stable individuals tend to transact more frequently and demand greater financial flexibility.

#### **Table 6.** Demographic Profile of the Respondents in terms of Level of Income

|  |  |  |
| --- | --- | --- |
| **Income Bracket** | **Frequency** | **Percent** |
| Php 7,000 and below | 14 | 7.57 |
| Php 7,001 to Php 10,000 | 13 | 7.03 |
| Php 10,001 to Php 15,000 | 21 | 11.35 |
| Php 15,001 to Php 30,000 | 83 | 44.86 |
| Php 30,001 and above | 54 | 29.19 |
| **Total** | **185** | **100.00** |

Regarding monthly income, the largest portion of respondents (44.86%) earned between Php 15,001 and Php 30,000, while 29.19% reported earning Php 30,001 and above. This indicates that middle- to upper-income individuals are the primary users of e-banking services. Rane et al. (2024) noted that income significantly influences digital banking behavior, as individuals with greater financial capacity are more inclined to utilize online tools to manage their assets.

##### **Table 7.** Demographic Profile of the Respondents in terms of Type of Transaction

|  |  |  |
| --- | --- | --- |
| **Type of Transaction** | **Frequency** | **Percent** |
| Cash Transfer | 98 | 52.97 |
| Payment of Bills | 87 | 47.03 |
| **Total** | **185** | **100.00** |

As for the type of transaction, 52.97% of the respondents primarily used e-banking for cash transfers, while 47.03% utilized it for bill payments. This suggests a balanced demand for both peer-to-peer and institutional transactions. Salem et al. (2019), Wewege et al. (2020), and Jo and Park (2023) highlighted that such usage patterns indicate a maturing engagement with e-banking services, where users rely on digital platforms not only for personal financial transfers but also for managing routine obligations—valuing the flexibility, security, and multifunctional features these platforms offer.

##### **Table 8.** Demographic Profile of the Respondents in terms of Frequency of Transaction

|  |  |  |
| --- | --- | --- |
| **Frequency of Transaction** | **Frequency** | **Percent** |
| Daily | 33 | 17.84 |
| Weekly | 88 | 47.57 |
| Monthly | 64 | 34.59 |
| **Total** | **185** | **100.00** |

Lastly, the frequency of e-banking usage reveals that 47.57% of respondents transact weekly, 34.59% transact monthly, and 17.84% use e-banking daily. This pattern indicates a habitual reliance on digital banking services. According to Rane et al. (2024), Blut et al. (2016), and Chaudhary et al. (2019), the convenience, user-friendliness, and round-the-clock accessibility of e-banking platforms significantly promote repeated use. Moreover, regular interaction with these services helps build user trust, fosters deeper engagement, and enhances long-term customer loyalty.

##### **Level of Customer Satisfaction on e-banking**

This section analyzes customer satisfaction with e-banking services using the SERVQUAL model, which includes five essential dimensions: efficiency and ease of use, reliability, assurance (security and privacy), responsiveness and communication, and empathy (quality of service). The data were collected from government employees in Poblacion, Cateel, Davao Oriental, and analyzed using descriptive statistics. Assessing satisfaction across these dimensions offers valuable insights into the performance of current e-banking platforms and highlights areas where improvements can enhance user experience.

**Table 9.** Level of Customer Satisfaction on e-banking in terms of Efficiency & Ease of Use

|  |  |  |  |
| --- | --- | --- | --- |
| **Statements** | **Mean** | **Std. Deviation** | **Interpretation** |
| The use of E-Banking services is timesaving. | 4.59 | 0.64 | Very high |
| The service delivered through the EBanking services is quick. | 4.45 | 0.74 | Very high |
| I can complete any transaction quickly through the E-Banking service channels. | 4.32 | 0.70 | Very high |
| I found that E-Banking services are easy to use. | 4.31 | 0.68 | Very high |
| E-Banking services are provided in various languages. | 4.18 | 0.67 | High |
| My Interaction with the E-Banking system is clear and understandable. | 4.21 | 0.73 | Very high |
| I find the E-Banking system to be flexible to interact with. | 4.15 | 0.78 | High |
| Learning to operate the E-Banking system is easy for me. | 4.19 | 0.76 | High |
| **Average** | **4.30** | **0.47** | **Very high** |

Table 9 presents the respondents’ evaluation of customer satisfaction in terms of **efficiency and ease of use**, with a **composite mean of 4.30**, interpreted as **very high**. The highest-rated indicator was “The use of e-banking services is time-saving” (mean = 4.59), followed by “The service delivered through the e-banking services is quick” (mean = 4.45), and “I can complete quickly any transaction through the e-banking service channels” (mean = 4.32). These results indicate that most users perceive e-banking platforms as highly efficient, convenient, and easy to navigate. This supports the findings of Raza et al. (2017), Chaimaa et al. (2021), and Sathiyavany and Shivany (2018), who emphasized that efficiency and ease of use are essential drivers of customer satisfaction in digital banking.

Moreover, moderately high ratings for items such as “E-banking services are provided in various languages” (mean = 4.18) and “Learning to operate the e-banking system is easy for me” (mean = 4.19) suggest that the system is generally user-friendly and accessible. However, these results also highlight opportunities for improvement, particularly in enhancing multilingual support and user adaptability. This observation is consistent with the insights of Rane et al. (2024), Suryono et al. (2020), and Mousa and Puhakka (2019), who noted that flexible, intuitive systems and inclusive design contribute significantly to repeated use and overall satisfaction in digital banking platforms.

**Table 10.** Level of Customer Satisfaction on e-banking in terms of Reliability

|  |  |  |  |
| --- | --- | --- | --- |
| **Statements** | **Mean** | **Std. Deviation** | **Interpretation** |
| I have high confidence in the reliability of E-Banking services. | 4.05 | 0.72 | High |
| E-Banking service is reliable and dependable. | 4.15 | 0.76 | High |
| E-Banking services perform the service for me on the first try. | 4.11 | 0.71 | High |
| I have always found E-Banking service channels in working order. | 4.28 | 0.78 | Very high |
| **Average** | **4.15** | **0.53** | **High** |

As presented in Table 10, customer satisfaction in terms of **reliability** received a **high overall mean score of 4.15.** The highest-rated item was “I have always found e-banking service channels in working order” (mean = 4.28), reflecting consistent service continuity. Other well-rated indicators included “E-banking service is reliable and dependable” (mean = 4.15) and “E-banking services perform for me the service right on the first time” (mean = 4.11), suggesting that users generally view e-banking platforms as dependable, consistent, and accurate in executing transactions. These findings align with the studies of Gomber et al. (2018), Souiden et al. (2021), and Ladhari et al. (2022), who highlighted the critical role of system reliability, transaction accuracy, and service availability in building customer trust and satisfaction. Moreover, Rane et al. (2024) emphasized that consistent service delivery is a key factor in sustaining long-term user engagement with digital banking services

**Table 11. Level of Customer Satisfaction on e-banking in terms of Assurance (Security and Privacy)**

**Std.**

**Statements Mean Interpretation**

### **Deviation**

|  |  |  |  |
| --- | --- | --- | --- |
| E-Banking services do not allow others to access my accounts. | 4.30 | 0.72 | Very high |
| E-Banking service provides high protection for my banking transactions. | 4.16 | 0.85 | High |
| E-Banking service is secure and safe from any fraud or hacking. | 4.22 | 0.71 | Very high |
| The security devices of the EBanking services protect the data that I send. | 4.19 | 0.70 | High |
| Security in E-Banking services offers secure personal privacy. | 4.10 | 0.73 | High |
| I feel secure while making transactions through. | 4.12 | 0.77 | High |
| My E-Banking site does not share my personal information with other sites. | 4.02 | 0.78 | High |
| **Average** | **4.16** | **0.52** | **High** |

Table 11 reflects the level of customer satisfaction regarding **assurance**, particularly in terms of **security and privacy**, with an **overall mean score of 4.16**, categorized as **high**. The highest-rated item was “E-banking services do not allow others to access my accounts” with a **very high mean of 4.30**, followed by “E-banking services are secure and safe from any fraud or hacking” (mean = **4.22**). These results indicate a strong degree of user trust in the protective mechanisms implemented by e-banking platforms. This supports the conclusions of Reis et al. (2024), Martínez-Navalón et al. (2023), and Salem et al. (2019), who emphasized that effective security features—such as authentication systems, privacy controls, and data encryption—are essential in boosting user confidence and satisfaction. Additionally, Rane et al. (2024) highlighted that in rural areas, like Cateel, perceived data protection plays an especially crucial role, as users may be more cautious and reluctant to embrace digital services without evident, trustworthy security measures in place

**Table 12. Level of Customer Satisfaction on e-banking in terms of Responsiveness**

**(Responsiveness and Communication)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Statements** | **Mean** | **Std. Deviation** | **Interpretation** |
| 20. E-Banking services are available 24/7. | 3.79 | 0.83 | High |
| 21. E-Banking services respond immediately to clients’ requests. | 3.93 | 0.78 | High |
| 22. Help is immediately available if there is any problem. | 4.01 | 0.70 | High |
| 23. E-Banking services provide prompt answers to your questions. | 4.03 | 0.72 | High |
| 24. Bank deals respectfully with customer complaints about electronic service. | 4.23 | 0.73 | Very high |
| **Average** | **4.00** | **0.55** | **High** |

Table 12 shows that customer satisfaction with e-banking in terms of **responsiveness** received a **high overall mean of 4.00**. The highest-rated item, “The bank deals respectfully with customer complaints” (M = 4.23), reflects the importance users place on professional communication, as noted by Mousa and Puhakka (2019), Repovienė (2017), and Gawor and Hoberg (2019). Other well-rated statements include “E-banking services provide prompt answers” (M = 4.03) and “Help is immediately available” (M = 4.01), showing appreciation for timely support. Rane et al. (2024) and Singh and Srivastava (2020) highlighted that such responsiveness builds trust and improves user experience. However, lower scores for “Immediate response to client requests” (M = 3.93) and “Availability of services 24/7” (M = 3.79) suggest that users still encounter challenges with consistent and round-the-clock service access.

**Table 13. Level of Customer Satisfaction on e-banking in terms of Empathy (Satisfaction with the Quality of Service)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Statements** | **Mean** | **Std. Deviation** | **Interpretation** |
| 25. I am satisfied with the transaction processing via E-Banking services. | 4.22 | 0.72 | Very high |
| 26. I think I made the correct decision to use the E-Banking services. | 4.12 | 0.78 | High |
| 27. My satisfaction with the E-Banking services is high. | 4.18 | 0.73 | High |
| 28. I am satisfied with the bank’s eservices quality. | 4.26 | 0.62 | Very high |
| 29. Overall, E-Banking services are better than my expectations. | 4.34 | 0.70 | Very high |
| 30. I prefer using E-Banking services instead of visiting the branch to do my transactions. | 4.06 | 0.72 | High |
| **Average** | **4.20** | **0.50** | **High** |

Table 13 shows that customer satisfaction with e-banking in terms of **empathy** is high, with an **overall mean of 4.20**. The highest-rated item, “Overall e-banking services are better than my expectations” (M = 4.34), indicates that services often exceed user expectations. High scores were also given to “The quality of the bank’s e-services” (M = 4.26) and “Transaction processing is efficient” (M = 4.22), reflecting system reliability. Slightly lower but still high ratings for “I made the correct decision to use e-banking” (M = 4.12) and “I prefer using e-banking over visiting the branch” (M = 4.06) suggest that some users still value traditional banking. These results are consistent with Gunaratne (2022), Alhelalat et al. (2017), and Izogo (2017), who emphasized that exceeding expectations and ensuring fast, secure services are key to maintaining high satisfaction in digital banking.

**Table 14. Summary of Customer Satisfaction**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factors of Customer Satisfaction** | **Mean** | **Std. Deviation** | **Interpretation** |
| Efficiency of Use | 4.30 | 0.47 | Very high |
| Reliability | 4.15 | 0.53 | High |
| Security and Privacy | 4.16 | 0.52 | High |
| Responsiveness and Communication | 4.00 | 0.55 | High |
| Satisfaction with Quality of Service | 4.20 | 0.50 | High |
| **Overall Customer Satisfaction** | **4.16** | **0.40** | **High** |

Table 14 summarizes customer satisfaction across the five SERVQUAL dimensions for e-banking services among government employees in Poblacion, Cateel, Davao Oriental, showing an **overall mean of 4.16**, interpreted as **high**. The highest-rated dimension was **efficiency of use** (M = 4.30), reflecting strong user appreciation for the speed, simplicity, and accessibility of e-banking platforms, consistent with Shankar et al. (2022), Singh and Srivastava (2020), and Coenen (2022). **Reliability** (M = 4.15) and **security and privacy** (M = 4.16) also received high ratings, indicating user trust in the platforms' stability and safety, as supported by Rane et al. (2024), Martínez-Navalón et al. (2023), and Mousa and Puhakka (2019). While **responsiveness and communication** received the lowest score (M = 4.00), it still reflected high satisfaction, with room for improvement in real-time support. **Empathy**, or perceived service quality, rated at 4.20, confirms that users feel their needs are being met. These findings affirm the effectiveness of the SERVQUAL model in evaluating digital banking and highlight the importance of enhancing communication to further improve user satisfaction.

#### **Significant Difference in the Level of Satisfaction with E-Banking**

**Table 15.**ANOVA and t-test Results on Customer Satisfaction by Demographic Variables

|  |  |  |  |
| --- | --- | --- | --- |
| **Demographic Variable Statistical Test p-value** | | | **Interpretation** |
| Age | ANOVA | 0.479 | No significant difference |
| Sex | t-test | 0.854 | No significant difference |
| Government Occupation | ANOVA | 0.295 | No significant difference |
| Employment Status | ANOVA | 0.679 | No significant difference |
| Monthly Income | ANOVA | 0.061 | No significant difference (borderline) |
| Type of Transaction | t-test | 0.563 | No significant difference |
| Frequency of Transaction | ANOVA | 0.193 | No significant difference |

This study found no statistically significant differences in e-banking satisfaction across demographic variables such as age (p = 0.479), sex (p = 0.854), occupation (p = 0.295), employment status (p = 0.679), transaction type (p = 0.563), and usage frequency (p = 0.193), suggesting that users in Poblacion, Cateel, Davao Oriental experience consistent service quality. These findings support the works of Mombeuil and Uhde (2021), Pousttchi and Dehnert (2018), and Barreda et al. (2015), who emphasized inclusive design and system reliability in fostering satisfaction. A near-significant result for income (p = 0.061) hints at slightly higher expectations among higher earners, yet still reflects equitable service delivery, consistent with Dass and Gani (2023) and Kaura et al. (2015). Overall, the results affirm Broby’s (2021) and Rane et al.’s (2023) claim that satisfaction is more influenced by system performance than user demographics.

#### **Action Plan to Improve Customer Satisfaction with E-Banking Services**

Based on the SERVQUAL analysis and conceptual framework, this action plan outlines targeted strategies to improve e-banking services by addressing key dimensions: efficiency, reliability, security, and responsiveness. The goal is to enhance customer trust, accessibility, and platform consistency while promoting inclusive digital engagement. Informed by service gaps and customer feedback, the plan includes specific activities, assigned responsibilities, and timelines. By combining technological improvements with human-centered approaches, it aims to improve overall satisfaction and align with best practices in digital banking innovation (Rane et al., 2024; Martínez-Navalón et al., 2023; Mousa & Puhakka, 2019).

**Table 16. Proposed Action Plan**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Objective** | **Strategies** | **Activities** | **Persons Involved** | **Timeline** |
| Improve the responsiveness and communication of e-banking services | Establish a 24/7 customer support system | Implement live chat support and an automated chatbot in apps/websites | Bank IT  Team,  Customer  Service  Dept..., External tech provider | Q3 2025 |
| Increase awareness of security and privacy protocols | Launch ebanking cybersecurity awareness campaign | Hold monthly webinars and inbranch info sessions on safe e-banking practices | Marketing  Team, Branch  Managers,  LGU partners | Q3–Q4 2025 |
| Enhance system  reliability and performance. | Conduct regular system audits and upgrades | Schedule monthly maintenance and load testing to avoid downtimes | IT  Department,  Software  Engineers,  Bank  Managers | Monthly  (starting Q3  2025) |
| Make platforms more userfriendly and inclusive. | Redesign the e-banking interface for accessibility | Create a  simplified mobile/web app interface, including multilanguage support and visual aids | UX Designers,  Web  Developers,  User  Feedback  Panel | Q4 2025 |
| Address  satisfaction gaps for less tech-savvy and older users | Conduct  digital literacy  workshops | Offer free training sessions for government employees and senior citizens on how to use ebanking apps. | Bank staff,  LGU offices,  DORSU  interns, Barangay  Officials | Q3–Q4 2025 |
| Collect continuous feedback from users. | Implement an in-app feedback and rating feature. | Add customer satisfaction surveys after every transaction and analyze quarterly. | R&D Team,  Customer  Service, Data  Analysts | Starting Q3  2025, ongoing |
| Promote transparency in e-banking processes. | Provide detailed transaction receipts and status updates | Notify customers  in real time for  every transaction (SMS/app/email) | IT Team,  Banking  Operations  Unit | Immediate implementation (Q3 2025) |

**5. CONCLUSIONS AND RECOMMENDATIONS**

**Conclusion**

In conclusion, e-banking services in Poblacion, Cateel, Davao Oriental have largely met customer expectations, with **efficiency, security, and service quality** emerging as key drivers of satisfaction. The lack of significant differences across demographic groups indicates that the platforms are generally **inclusive and user-friendly**. However, the lower rating in **responsiveness and communication** highlights a need for improved real-time support. Addressing this gap is essential to maintaining user trust and fostering continued usage. Overall, the findings suggest that rural communities are well-positioned to embrace digital banking, as long as their **specific challenges such as internet access and digital literacy are thoughtfully addressed.**

**Recommendation**

To strengthen e-banking services, it is recommended that banks improve **responsiveness** through 24/7 live support, chatbots, and real-time communication tools. Supporting **older and low-income users** with digital literacy programs and multilingual guides will promote broader access, aligning with Rane et al. (2024). Regular **system updates and audits** are vital to maintaining performance, while **security education campaigns** will enhance trust, as noted by Martínez-Navalón et al. (2023). Feedback tools such as quarterly surveys and app-based forms, supported by Mousa and Puhakka (2019), can capture evolving user needs. Introducing **reward programs**, collaborating with **local government units**, and improving **mobile accessibility** in low-connectivity areas will promote inclusion and engagement. Monitoring progress through **customer service KPIs** will ensure long-term satisfaction and provide a framework for scaling services to other rural areas.

**COMPETING INTERESTS**

Authors have declared that no competing interests exist.

Disclaimer (Artificial intelligence)

The authors hereby declare that generative AI technologies, specifically Large Language Models, were used during the writing and editing of this manuscript. Details of the AI usage are as follows:

1. Name of the AI Tool: ChatGPT
2. Version/Model: GPT-4
3. Source/Provider: OpenAI (https://chat.openai.com)

Purpose of Use: Generative AI was primarily employed to enhance the clarity and coherence of the discussion, improve the overall language and grammar, and refine the abstract for better readability and adherence to academic standards.

Sample Prompts Provided to the AI:

1. “Please enhance this abstract to improve clarity, focus, and impact.”
2. “Correct grammar and improve the flow of this discussion section.”
3. “Summarize findings in a more concise academic style.”
4. “Rephrase this paragraph to sound more formal and scholarly.”

All intellectual content, data interpretation, and scientific conclusions remain the responsibility of the authors. The AI tool served only as an editorial assistant and did not generate original scientific ideas or perform data analysis.

**REFERENCES**

1. Afzal, M., Ansari, M. S., Ahmad, N., Shahid, M., & Shoeb, M. (2024). Cyberfraud, usage intention, and cybersecurity awareness among e-banking users in India: an integrated model approach. Journal of Financial Services Marketing, 1–21.
2. Aggarwal, A., & Patel, M. (2023). UNDERSTANDING CONSUMER ACCEPTANCE OF E-COMMERCE PAYMENT SERVICES AND BANKING SERVICES: AN

EMPIRICAL ANALYSIS. Journal of Commerce & Accounting Research, 12(4).

1. Akinyede, R. O., & Esese, O. A. (2017). Development of a secure mobile e-banking system. International Journal of Computer (IJC), 26(1), 23-42.
2. Akinyede, R. O., & Esese, O. A. (2017). Development of a secure mobile e-banking system. International Journal of Computer (IJC), 26(1), 23-42.
3. Al-Abdallat, H. (2023). Developing a framework for enhancing strategic performance by applying lean service: an empirical study of the Jordanian commercial banking sector.
4. Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. International journal of information management, 37(3), 99–110.
5. Alhelalat, J. A., Ma’moun, A. H., & Twaissi, N. M. (2017). The impact of personal and functional aspects of restaurant employee service behaviour on customer satisfaction. International Journal of Hospitality Management, 66, 46-53.
6. Ali, G., Dida, M. A., & Elikana Sam, A. (2021). A secure and efficient multi-factor authentication algorithm for mobile money applications. Future Internet, 13(12), 299.
7. Ali, H. A., Muhammad, G., Ali, S. A., Aziz, S., & Ahmed, A. (2023). Exploring the Impact of Internet Banking Service Efficiency on Customer Loyalty: The Mediating Role of Customer Satisfaction and the Moderating Effect of Customer Trust. International Journal of Business and Economic Affairs, 8(3), 165-180.
8. Ali, M., & Raza, S. A. (2017). Service quality perception and customer satisfaction in Islamic banks of Pakistan: the modified SERVQUAL model. Total Quality Management & Business Excellence, 28(5-6), 559-577.
9. Allen, J., Piecyk, M., Piotrowska, M., McLeod, F., Cherrett, T., Ghali, K., ... & Austwick, M. (2018). Understanding the impact of e-commerce on last-mile light goods vehicle

activity in urban areas: The case of London. Transportation Research Part D: Transport and Environment, 61, 325-338.

1. Almaiah, M. A., Al-Otaibi, S., Shishakly, R., Hassan, L., Lutfi, A., Alrawad, M., ... & Alghanam, O. A. (2023). Investigating the role of perceived risk, perceived security, and perceived trust on smart m-banking application using SEM. Sustainability, 15(13), 9908.
2. Amin, M. (2016). Internet banking service quality and its implication on e-customer satisfaction and e-customer loyalty. International journal of bank marketing, 34(3), 280–306.
3. Anderson, J., & Rainie, L. (2023). Expert essays on human agency and digital life. In The Future of Human Agency, Experts are split about how much control people will retain over essential decision-making as digital systems and AI spread. They agree that powerful corporate and government authorities will expand the role of AI in people’s daily lives in useful ways. But many worry these systems will diminish individuals’ ability to control their choices (pp. 27–96). Pew Research Center. http://www.jstor.org/stable/resrep63509.7
4. Angusamy, A., Yee, C. J., & Kuppusamy, J. (2022). E-Banking: An empirical study on customer satisfaction. Journal of System and Management Sciences, 12(4), 2738.
5. Antony, G. (2024). Impact of E-Banking Service Quality on Customer Satisfaction and Loyalty (Doctoral dissertation, Dublin Business School).
6. Arcand, M., PromTep, S., Brun, I., & Rajaobelina, L. (2017). Mobile banking service quality and customer relationships. International Journal of Bank Marketing, 35(7), 10681089.
7. Ashraf, M. A. (2022). Effects of demographic factors on women’s participation in the Islamic microfinance scheme: an analysis using the theory of bounded rationality. Journal of Islamic Accounting and Business Research, 13(7), 1018–1037.
8. Bankuoru Egala, S., Boateng, D., & Aboagye Mensah, S. (2021). To leave or retain? An interplay between quality digital banking services and customer satisfaction. International journal of bank marketing, 39(7), 1420-1445.
9. Bansal, N., Taneja, S., & Ozen, E. (2023). Green Financing as a Bridge Between Green Banking Strategies and Environmental Performance in Punjab, India.

International Journal of Sustainable Development & Planning, 18(10).

1. Barreda, A. A., Bilgihan, A., & Kageyama, Y. (2015). The role of trust in creating positive word of mouth and behavioral intentions: The case of online social networks. Journal of Relationship Marketing, 14(1), 16-36.
2. Bennett, C. (2024). Successful Strategies of Black Women Business Owners (Doctoral dissertation, Walden University).
3. Biswas, S., Carson, B., Chung, V., Singh, S., & Thomas, R. (2020). AI-bank of the future: Can banks meet the AI challenge? New York: McKinsey & Company.
4. Bizuneh, M. (2016). The Effect of Organizational Culture on Employee Commitment. The Case of Ethiopian Airlines Company. School of Graduate Studies of Addis Ababa University.
5. Blut, M., Wang, C., & Schoefer, K. (2016). Factors influencing the acceptance of selfservice technologies: A meta-analysis. Journal of Service Research, 19(4), 396416.
6. Bock, D. E., Mangus, S. M., & Folse, J. A. G. (2016). The road to customer loyalty is paved with service customization. Journal of Business Research, 69(10), 3923-3932.
7. Broby, D. (2021). Financial technology and the future of banking. Financial Innovation, 7(1), 47.
8. Chaimaa, B., Najib, E., & Rachid, H. (2021). E-banking overview: concepts, challenges and solutions. Wireless Personal Communications, 117, 1059-1078.
9. Chaimaa, B., Najib, E., & Rachid, H. (2021). E-banking overview: concepts, challenges and solutions. Wireless Personal Communications, 117, 1059-1078.
10. Chaudhary, S., Schafeitel-Tähtinen, T., Helenius, M., & Berki, E. (2019). Usability, security, and trust in password managers: A quest for user-centric properties and features. Computer Science Review, 33, 69–90.
11. Chauhan, S., Akhtar, A., & Gupta, A. (2022). Customer experience in digital banking: A review and future research directions. International Journal of Quality and Service Sciences, 14(2), 311–348.
12. Chen, S. H., Pai, F. Y., & Yeh, T. M. (2019). Using the Importance–Satisfaction Model and Service Quality Performance Matrix to improve long-term care service quality in Taiwan. Applied Sciences, 10(1), 85.
13. Chen, T., Guo, W., Gao, X., & Liang, Z. (2021). AI-based self-service technology in public service delivery: User experience and influencing factors. Government Information Quarterly, 38(4), 101520.
14. Chmielarz, W., & Zborowski, M. (2022). On the assessment of e-banking websites supporting sustainable development goals. Energies, 15(1), 378.
15. CHOUDHURY, P., & MOHAPATRA, H. (2024). AI'S EVOLUTION: CATALYST AND

CONUNDRUM IN SOCIETY. Role of Emerging Technologies in Social Science,

1. Coenen, L. (2022). Unibanco: Initiatives to Increase Gen Z’s Registrations for an Online

Debit Card Account (Master's thesis, Universidade Catolica Portuguesa

(Portugal)).

1. Collier, J. E., Barnes, D. C., Abney, A. K., & Pelletier, M. J. (2018). Idiosyncratic service experiences: When customers desire the extraordinary in a service encounter. Journal of Business Research, 84, 150–161.
2. Damaraju, A. (2024). Cloud Security Challenges and Solutions in the Era of Digital Transformation. International Journal of Advanced Engineering Technologies and Innovations, 1(3), 387–413.
3. Dashkevich, N., Counsell, S., & Destefanis, G. (2020). Blockchain application for central banks: A systematic mapping study. IEEE Access, 8, 139918–139952.
4. Dass, D. C., & Gani, N. A. (2023). The Facilitating Conditions Accessibility to Mobile Banking Services. Jurnal Evolusi, 4(3).
5. Dauda, S. Y., & Lee, J. (2015). Technology adoption: A conjoint analysis of consumers׳' preference on future online banking services. Information Systems, 53, 1-15.
6. Dicuonzo, G., Galeone, G., Zappimbulso, E., & Dell'Atti, V. (2019). Risk management 4.0: The role of big data analytics in the bank sector. International Journal of Economics and Financial Issues, 9(6), 40-47.
7. FANG, L., & Quintos, D. G. (2023). Security Measures Applied on Digital Banking Towards Service Improvement Proposal. Journal of Business and Management Studies, 5(5), 47-77.
8. Gandara, D. M. (2018). Strategic adaptation & collaboration: European global banks' approach to Fintech (Master's thesis).
9. Gawor, T., & Hoberg, K. (2019). Customers’ valuation of time and convenience in efulfillment. International Journal of Physical Distribution & Logistics Management, 49(1), 75–98.
10. Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. Journal of Management Information Systems, 35(1), 220–265.
11. Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. Journal of Management Information Systems, 35(1), 220–265.
12. Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. Journal of Management Information Systems, 35(1), 220–265.
13. Gonzales, A. (2016). The contemporary US digital divide: from initial access to technology maintenance. Information, Communication & Society, 19(2), 234–248.
14. Goodman, J. (2019). Strategic customer service: Managing the customer experience to increase positive word of mouth, build loyalty, and maximize profits. Amacom.
15. Goodman, J. (2019). Strategic customer service: Managing the customer experience to increase positive word of mouth, build loyalty, and maximize profits. Amacom.
16. Gregory, J. L. (2019). Applying SERVQUAL: Using service quality perceptions to improve student satisfaction and program image. Journal of Applied Research in Higher Education, 11(4), 788–799.
17. Grönroos, C., Strandvik, T., & Heinonen, K. (2015). Value co-creation: Critical reflections. The Nordic School, 69.
18. Gunaratne, T. (2022). Emerging digital banking service quality dimensions and their impact on elderly customer satisfaction and engagement: a study in the Sri Lankan context (Doctoral dissertation).
19. Gupta, A., Singh, R. K., Mathiyazhagan, K., Suri, P. K., & Dwivedi, Y. K. (2023). Exploring relationships between service quality dimensions and customer satisfaction: an empirical study in the context of Indian logistics service providers. The international Journal of logistics management, 34(6), 1858-1889.
20. Gupta, R. (2024). Investigating the Impact of Human-Centered Interface Design on the User Experience of Mobile Device Users.
21. Hasandoust, R. F., & Saravi, M. M. (2017). Identifying the effect of successful e-banking on customers’ satisfaction, trust, commitment, and loyalty. QUID: Investigación, Ciencia y Tecnología, (1), 1716-1726.
22. Hassan, A., & Ahmed, K. (2023). Cybersecurity's impact on customer experience: an analysis of data breaches and trust erosion. Emerging Trends in Machine Intelligence and Big Data, 15(9), 1–19.
23. Hassan, M., Aziz, L. A. R., & Andriansyah, Y. (2023). The role of artificial intelligence in modern banking: an exploration of AI-driven approaches for enhanced fraud prevention, risk management, and regulatory compliance. Reviews of Contemporary Business Analytics, 6(1), 110-132.
24. Heggland, H., & Nadav, O. (2019). Fintech firms and incumbent banks: competition or collaboration?: What factors impact how and why fintech firms and traditional banks decide the extent to collaborate with each other in the peer-to-peer lending sector in Norway? (Master's thesis, Universitetet i Agder; University of Agder).
25. Hossain, M. A., Islam, S., Rahman, M. M., & Arif, N. U. M. (2024). Impact of online payment systems on customer trust and loyalty in E-commerce analyzing security and convenience. Academic Journal on Science, Technology, Engineering & Mathematics Education, 4(03), 1–15.
26. Ibukun, P. B., & Ruzhanskaya, L. S. (2024). Enhancing Customer Satisfaction: A Systematic Review of Online Banking Services and User Experience. In Весенние дни науки ИнЭУ: сборник докладов Международной конференции студентов и молодых ученых.—Екатеринбург, 2024 (pp. 212-215). Издательство Издательский Дом «Ажур».
27. Iqbal, M., & Abbas, W. (2024). Determinants of Expected Service Quality: A Comparative Study in the Pakistani Banking Sector. Journal of Policy Options, 7(1), 27-35.
28. Islam, T., Islam, R., Pitafi, A. H., Xiaobei, L., Rehmani, M., Irfan, M., & Mubarak, M. S. (2021). The impact of corporate social responsibility on customer loyalty: The mediating role of corporate reputation, customer satisfaction, and trust. Sustainable Production and Consumption, 25, 123–135.
29. Izogo, E. E. (2017). Customer loyalty in the telecom service sector: the role of service quality and customer commitment. The TQM Journal, 29(1), 19–36.
30. Javaid, M., Haleem, A., Singh, R. P., Suman, R., & Khan, S. (2022). A review of Blockchain Technology applications for financial services. BenchCouncil Transactions on Benchmarks, Standards and Evaluations, 2(3), 100073.
31. Jeucken, M., & Bouma, J. J. (2017). The changing environment of banks. In Sustainable Banking (pp. 24–38). Routledge.
32. Jimenez, N., San-Martin, S., & Azuela, J. I. (2016). Trust and satisfaction: the keys to client loyalty in mobile commerce. Academia Revista Latinoamericana de
33. Administración, 29(4), 486-510.
34. Jo, H., & Park, D. H. (2023). Affordance, usefulness, enjoyment, and aesthetics in sustaining virtual reality engagement. Scientific Reports, 13(1), 15097.
35. Kaur, S. J., Ali, L., Hassan, M. K., & Al-Emran, M. (2021). Adoption of digital banking channels in an emerging economy: exploring the role of in-branch efforts. Journal of Financial Services Marketing, 26(2), 107.
36. Kaura, V., Durga Prasad, C. S., & Sharma, S. (2015). Service quality, service convenience, price and fairness, customer loyalty, and the mediating role of customer satisfaction. International journal of bank marketing, 33(4), 404-422.
37. Khadka, K., & Maharjan, S. (2017). Customer satisfaction and customer loyalty. Centria University of Applied Sciences Pietarsaari, 1(10), 58-64.
38. Khan, H. U., Malik, M. Z., Nazir, S., & Khan, F. (2023). Utilizing biometric systems for enhancing cybersecurity in the banking sector: A systematic analysis. IEEE Access.
39. KOMANDLA, V., & CHILKURI, B. (2018). The Digital Wallet Revolution: Adoption Trends, Consumer Preferences, and Market Impacts on Bank-Customer Relationships. Educational Research (IJMCER), 2(2), 01–11.
40. KOMANDLA, V., & PERUMALLA, S. (2017). Transforming Traditional Banking: Strategies, Challenges, and the Impact of Fintech Innovations. Educational Research (IJMCER), 1(6), 01-09.
41. Koomson, I., Villano, R. A., & Hadley, D. (2020). Effect of financial inclusion on poverty and vulnerability to poverty: Evidence using a multidimensional measure of financial inclusion. Social Indicators Research, 149(2), 613–639.
42. Kourgiantakis, M., Dimou, I., Ferreira, M. R., Ntoa, S., & Margetis, G. (2024). 10 HCI in eCommerce. Human-Computer Interaction in Various Application Domains, 264.
43. Ladhari, R., Cheikhrouhou, S., Morales, M., & Zaaboub, E. (2022). Antecedents and consequences of emotional attachment to sport teams' brands. Journal of Brand Management, 29(5), 454-469.
44. Law, S. W. (2024). Financial Inclusion, Technology and Virtual Banking. Springer Books.
45. Lee, D., Moon, J., Kim, Y. J., & Mun, Y. Y. (2015). Antecedents and consequences of mobile phone usability: Linking simplicity and interactivity to satisfaction, trust, and brand loyalty. Information & Management, 52(3), 295-304.
46. Li, H., & Kostka, G. (2022). Chinese Citizens’ Digital Engagement with Local Mobile
47. Government Platforms: Motivation, Usage, and Gratifications. Usage and
48. Gratifications.
49. Lian, X., Sunar, M. S., Lian, Q., & Mokhtar, M. K. (2023). Evaluating user interface of a mobile augmented reality coloring application for children with autism: An eyetracking investigation. International Journal of Human-Computer Studies, 178, 103085.
50. Limbu, B. (2024). Satisfaction Levels of Customers With Online Banking Sectors in Nepal.
51. Liu, Z., Zhang, X., Yang, L., & Shen, Y. (2021). Access to digital financial services and green technology advances: Regional evidence from China. Sustainability, 13(9), 4927.
52. Llanto, G. M., Rosellon, M. A. D., & Ortiz, M. K. P. (2018). E-finance in the Philippines: Status and prospects for digital financial inclusion.
53. Lusch, R. F., & Nambisan, S. (2015). Service innovation. MIS quarterly, 39(1), 155–176.
54. Martínez-Navalón, J. G., Fernández-Fernández, M., & Alberto, F. P. (2023). Does privacy and ease of use influence user trust in digital banking applications in Spain and Portugal?. International Entrepreneurship and Management Journal, 19(2), 781803.
55. McKelvey, B. (2021). Managing the consequences of digital networks and accelerated complexity dynamics in digital business ecosystems. In Management in the Age of Digital Business Complexity (pp. 1–47). Routledge.
56. Michael, K., Kobran, S., Abbas, R., & Hamdoun, S. (2019, November). Privacy, data rights, and cybersecurity: Technology for good in the achievement of sustainable development goals. In 2019 IEEE International Symposium on Technology and Society (ISTAS) (pp. 1–13). IEEE.
57. Mishra, R., Singh, R. K., Kumar, S., Mangla, S. K., & Kumar, V. (2023). Critical success factors of Blockchain technology adoption for sustainable and resilient operations in the banking industry during an uncertain business environment. Electronic Commerce Research, 1–35.
58. Mmutle, T., & Shonhe, L. (2017). Customers' perception of service quality and its impact on reputation in the hospitality industry.
59. Mohd Thas Thaker, M. A. B., Allah Pitchay, A. B., Mohd Thas Thaker, H. B., & Amin, M. F. B. (2019). Factors influencing consumers’ adoption of Islamic mobile banking services in Malaysia: An approach of partial least squares (PLS). Journal of Islamic Marketing, 10(4), 1037–1056.
60. Mombeuil, C., & Uhde, H. (2021). Relative convenience, relative advantage, perceived security, perceived privacy, and continuous use intention of China’s WeChat Pay: A mixed-method two-phase design study. Journal of Retailing and Consumer Services, 59, 102384.
61. Monferrer, D., Segarra, J. R., Estrada, M., & Moliner, M. Á. (2019). Service quality and customer loyalty in a post-crisis context. Prediction-oriented modeling to enhance the particular importance of a social and sustainable approach. Sustainability, 11(18), 4930.
62. Moragudi, K. K. (2024). THE FACTORS INFLUENCING CUSTOMER SATISFACTION IN MOBILE BANKING (Doctoral dissertation, SIAM UNIVERSITY).
63. Morake, T. A. (2021). A Multi-Factor Authentication Approach for E-Banking. University of Johannesburg (South Africa).
64. Moraru, A. D., & Duhnea, C. (2018). E-banking and customer satisfaction with banking services. Strategic Management-International Journal of Strategic Management and Decision Support Systems in Strategic Management, 23(3).
65. Moro-Visconti, R., & Cesaretti, A. (2023). FinTech and digital payment systems valuation. In Digital Token Valuation: Cryptocurrencies, NFTs, Decentralized Finance, and Blockchains (pp. 411-458). Cham: Springer Nature Switzerland.
66. Mostafa, A. M., Ezz, M., Elbashir, M. K., Alruily, M., Hamouda, E., Alsarhani, M., & Said, W. (2023). Strengthening cloud security: an innovative multi-factor multi-layer authentication framework for cloud user authentication. Applied Sciences, 13(19), 10871.
67. Mousa, M., & Puhakka, V. (2019). Inspiring organizational commitment: responsible leadership and organizational inclusion in the Egyptian health care sector. Journal of Management Development, 38(3), 208-224.
68. Murinde, V., Rizopoulos, E., & Zachariadis, M. (2022). The impact of the FinTech revolution on the future of banking: Opportunities and risks. International review of financial analysis, 81, 102103.
69. Murray, J., Elms, J., & Curran, M. (2019). Examining empathy and responsiveness in a high-service context. International Journal of Retail & Distribution Management, 47(12), 1364–1378.
70. Namahoot, K. S., & Laohavichien, T. (2018). Assessing the intentions to use internet banking: The role of perceived risk and trust as mediating factors. International Journal of Bank Marketing, 36(2), 256–276.
71. Nguyen, M. (2024). Artificial Intelligence Chatbots in Telecommunications: Transforming Customer Service in the Digital Age.
72. Nso, M. A. (2018). Impact of Technology on E-Banking: Cameroon Perspectives. International Journal of Advanced Networking and Applications, 9(6), 3645– 3653.
73. Oliveira, A. S. D., Souki, G. Q., Silva, D. D., Rezende, D. C. D., & Batinga, G. L. (2023). Service guarantees in an e-commerce platform: proposition of a framework based on customers' expectations, negative experiences, and behavioural responses. Asia-Pacific journal of business administration, 15(2), 225-244.
74. Olomukoro, C. (2023). The effects of implementing Blockchain technology in the Central Bank of Nigeria.
75. Omarova, S. T. (2021). The People's ledger: how to democratize money and finance the economy. Vand. L. Rev., 74, 1231.
76. Oteh, O. U., Ibok, I. N., & Nto, C. P. (2017). Adoption and usage of e-banking channels in Nigeria: Implications for deepening financial inclusion. International business and management journal, 14(3), 1-8.
77. Pakurár, M., Haddad, H., Nagy, J., Popp, J., & Oláh, J. (2019). The service quality dimensions that affect customer satisfaction in the Jordanian banking sector. Sustainability, 11(4), 1113.
78. Pal, A., Tiwari, C. K., & Behl, A. (2021). Blockchain technology in financial services: a comprehensive review of the literature. Journal of Global Operations and Strategic Sourcing, 14(1), 61-80.
79. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. Journal of Retailing, 64(1), 12.
80. Parasuraman, R., Mouloua, M., Molloy, R., & Hilburn, B. (2018). Monitoring of automated systems. In Automation and human performance (pp. 91–115). CRC Press.
81. Pazarbasioglu, C., Mora, A. G., Uttamchandani, M., Natarajan, H., Feyen, E., & Saal, M. (2020). Digital financial services. World Bank, 54, 1-54.
82. Phakathi, N. (2023). Service quality, customer satisfaction, and customer retention: a case of private banking in South Africa.
83. Piotrowski, D. (2023). Privacy frontiers in customers’ relations with banks. Economics and Business Review, 9(1), 119-141.
84. Pousttchi, K., & Dehnert, M. (2018). Exploring the impact of digitalization on consumer decision-making in retail banking. Electronic Markets, 28, 265-286.
85. Putrevu, J., & Mertzanis, C. (2024). The adoption of digital payments in emerging economies: challenges and policy responses. Digital Policy, Regulation and Governance, 26(5), 476-500.
86. Ramadan, H. K. A., Mahmoud, M. A., Aburahma, M. Z., Elkhawaga, A. A., El-Mokhtar, M. A., Sayed, I. M., ... & Medhat, M. A. (2020). Predictors of severity and co-infection resistance profile in COVID-19 patients: First report from Upper Egypt. Infection and drug resistance, 3409-3422.
87. Rane, J., Kaya, O., Mallick, S. K., & Rane, N. L. (2024). Enhancing customer satisfaction and loyalty in service quality through artificial intelligence, machine learning, internet of things, blockchain, big data, and ChatGPT. Generative Artificial Intelligence in Agriculture, Education, and Business, 84–141.
88. Rane, J., Kaya, O., Mallick, S. K., & Rane, N. L. (2024). Enhancing customer satisfaction and loyalty in service quality through artificial intelligence, machine learning, internet of things, blockchain, big data, and ChatGPT. Generative Artificial Intelligence in Agriculture, Education, and Business, 84–141.
89. Rane, N. L., Achari, A., & Choudhary, S. P. (2023). Enhancing customer loyalty through quality of service: Effective strategies to improve customer satisfaction, experience, relationship, and engagement. International Research Journal of Modernization in Engineering Technology and Science, 5(5), 427–452.
90. Rane, N. L., Achari, A., & Choudhary, S. P. (2023). Enhancing customer loyalty through quality of service: Effective strategies to improve customer satisfaction, experience, relationship, and engagement. International Research Journal of Modernization in Engineering Technology and Science, 5(5), 427–452.
91. Rane, N. L., Achari, A., & Choudhary, S. P. (2023). Enhancing customer loyalty through quality of service: Effective strategies to improve customer satisfaction, experience, relationship, and engagement. International Research Journal of Modernization in Engineering Technology and Science, 5(5), 427–452.
92. Raza, S. A., Umer, A., & Shah, N. (2017). New determinants of ease of use and perceived usefulness for mobile banking adoption. International Journal of Electronic Customer Relationship Management, 11(1), 44-65.
93. Reis, O., Oliha, J. S., Osasona, F., & Obi, O. C. (2024). Cybersecurity dynamics in Nigerian banking: trends and strategies review. Computer Science & IT Research Journal, 5(2), 336-364.
94. Repovienė, R. (2017). Role of content marketing in value creation for customer context:
95. theoretical analysis. International Journal on Global Business Management & Research, 6(2), 37.
96. Rodrigues, L. F., Costa, C. J., & Oliveira, A. (2017). How does the web game design influence the behavior of e-banking users?. Computers in Human Behavior, 74, 163-174.
97. Rupal, J., & Singh, R. (2023). Evaluating the Impact of E-Banking on Customer
98. Satisfaction: A Comprehensive Systematic Review. AiBi Revista de
99. Investigación, Administración e Ingeniería, 11(3), 115-125.
100. Sakirovic, B. A. (2023). Adapting to Fintech Disruption: Comparative Case Study of Banking Strategies from Developed and Emerging Countries.
101. Salem, M. Z., Baidoun, S., & Walsh, G. (2019). Factors affecting Palestinian customers’ use of online banking services. International Journal of Bank Marketing, 37(2), 426–451.
102. Salem, M. Z., Baidoun, S., & Walsh, G. (2019). Factors affecting Palestinian customers’ use of online banking services. International Journal of Bank Marketing, 37(2), 426–451.
103. Salmi, A. (2023). Modernizing Property & Casualty Insurance to Attract Millennials (Master's thesis, The College of St. Scholastica).
104. Sandhu, S., & Arora, S. (2022). Customers' usage behaviour of e‐banking services: Interplay of electronic banking and traditional banking. International Journal of Finance & Economics, 27(2), 2169–2181.
105. Sarrab, M., Elbasir, M., & Alnaeli, S. (2016). Towards a quality model of technical aspects for mobile learning services: An empirical investigation. Computers in Human Behavior, 55, 100–112.
106. Sathiyavany, N., & Shivany, S. (2018). E-banking service qualities, e-customer satisfaction, and e-loyalty: a conceptual model. The International Journal of Social Sciences and Humanities Invention, 5(6), 4808-4819.
107. Sathiyavany, N., & Shivany, S. (2018). E-banking service qualities, e-customer satisfaction, and e-loyalty: a conceptual model. The International Journal of Social Sciences and Humanities Invention, 5(6), 4808-4819.
108. Sathiyavany, N., & Shivany, S. (2018). E-banking service qualities, e-customer satisfaction, and e-loyalty: a conceptual model. The International Journal of Social Sciences and Humanities Invention, 5(6), 4808-4819.
109. Shaikh, A. A. (2016). Examining consumers' intention, behavior, and beliefs in mobile banking adoption and continuous usage (Doctoral dissertation, University of Jyväskylä).
110. Shaikh, A. A. (2016). Examining consumers' intention, behavior, and beliefs in mobile banking adoption and continuous usage (Doctoral dissertation, University of Jyväskylä).
111. Shankar, A., Tiwari, A. K., & Gupta, M. (2022). Sustainable mobile banking application: a text mining approach to explore critical success factors. Journal of Enterprise Information Management, 35(2), 414–428.
112. Sharma, S. (2016). Using SERVQUAL to assess the customer satisfaction level: A Study of an urban Cooperative Bank. Journal of economics and public finance, 2(1), 57–85.
113. Singgalen, Y. A. (2024). Hotel Customer Satisfaction: A Comprehensive Analysis of Perceived Cleanliness, Location, Service, and Value. Journal of Business and Economics Research (JBE), 5(3), 352-369.
114. Singh, S. K., Pattnaik, P. K., & Samanta, S. (2023, September). Issues and Challenges of
115. Digital Banking Systems. In International Conference on Intelligence Science (pp. 67-81). Singapore: Springer Nature Singapore.
116. Sohn, S., Seegebarth, B., & Moritz, M. (2017). The impact of perceived visual complexity of mobile online shops on users' satisfaction. Psychology & Marketing, 34(2), 195-214.
117. Souiden, N., Ladhari, R., & Chaouali, W. (2021). Mobile banking adoption: a systematic review. International Journal of Bank Marketing, 39(2), 214-241.
118. Srinivas, J., Das, A. K., & Kumar, N. (2019). Government regulations in cybersecurity: Framework, standards, and recommendations. Future generation computer systems, 92, 178-188.
119. Strenitzerová, M., & Gaňa, J. (2018). Customer satisfaction and loyalty are part of customer-based corporate sustainability in the mobile communications services sector. Sustainability, 10(5), 1657.
120. Susmitha, K., Leelavati, T. S., & Sripathi, M. (2024). Transformative Trends in Digital Banking: Exploring e-Banking, Mobile Banking, Digital Payments, and Innovative Solutions. In E-Financial Strategies for Advancing Sustainable Development: Fostering Financial Inclusion and Alleviating Poverty (pp. 169–182). Cham: Springer Nature Switzerland.
121. Tahtamouni, A. (2023). E-banking services and the satisfaction of customers in the
122. Jordanian banks. Journal of Science and Technology Policy Management, 14(6), 1037-1054.
123. Taylor, B., Dey, A., Siewiorek, D., & Smailagic, A. (2015, September). Using physiological sensors to detect levels of user frustration induced by system delays. In Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing (pp. 517–528).
124. Tiwari, P. (2023). Effect of innovation practices of banks on customer loyalty: an SEMANN approach. Benchmarking: An International Journal, 30(10), 4536-4568.
125. Velasco, C., Reinoso‐Carvalho, F., Barbosa Escobar, F., Gustafsson, A., & Petit, O. (2024). Paradoxes, challenges, and opportunities in the context of ethical customer experience management. Psychology & Marketing, 41(10), 2506-2524.
126. Wang, S., Asif, M., Shahzad, M. F., & Ashfaq, M. (2024). Data privacy and cybersecurity challenges in the digital transformation of the banking sector. Computers & security, 147, 104051.
127. Wewege, L., Lee, J., & Thomsett, M. C. (2020). Disruptions and digital banking trends. Journal of Applied Finance and Banking, 10(6), 15-56.
128. Wu, L., Chau, K. T., Wan Yahaya, W. A. J., Wang, S., & Wu, X. (2024). The Effect of Electroencephalogram Feedback in Virtual Reality Interactive System on Creativity Performance, Attention Value, and Cognitive Load. International Journal of Human–Computer Interaction, 1-18.
129. Yamaguti Mondego, D. (2024). The Use of Artificial Intelligence to Enhance User Satisfaction in Cloud-Based Payment Systems in Australia (Doctoral dissertation, CQUniversity).
130. Yip, A. W., & Bocken, N. M. (2018). Sustainable business model archetypes for the banking industry. Journal of Cleaner Production, 174, 150-169.
131. Zhang, Y. (2020). Developing cross-border blockchain financial transactions under the belt and road initiative. The Chinese Journal of Comparative Law, 8(1), 143-176.