

Assessing the E-Banking Services Using Service Quality and Customer Planned Behavior

Ikechukwu Amos Aluma^{1*}, Glory Sotelo Drequito², Azubuikwe Lucky Umeh³
Saint Louis University, Baguio City

Corresponding Author: Ikechukwu Amos Aluma alumaamosike@gmail.com

ARTICLE INFO

Keywords: Customer satisfaction, e-banking, TPB, SERVQUAL dimension

Received : 28, May

Revised : 12, June

Accepted: 16, July

©2025 Aluma, Drequito, Umeh : This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This paper investigates the customer satisfaction of e-banking users by employing the SERVQUAL model and the Theory of Planned Behavior (TPB) model, comprehensively analyzing customer perceptions and behaviors. A quantitative method utilizing a descriptive survey research design was employed to collect and analyze the respondents' e-banking level of satisfaction across SERVQUAL dimensions and TPB constructs. The study revealed that e-banking users expressed high customer satisfaction with e-banking services, as measured using the SERVQUAL dimension and TPB constructs. However, network issues and cyber threats emerge as critical problems that e-banking users encounter. The study provides valuable insights for banks to continuously improve their security features, interface design, and real-time assistance to reduce the anxiety users experience while transacting on e-banking platforms.

INTRODUCTION

The contemporary global landscape, marked by financial inclusion and sustainability, has instigated profound transformations in the business realm, altering communication dynamics between enterprises and their clientele. This shift empowers banks to operate efficiently, which signifies a strategic move that aligns with customers' evolving needs and preferences. This transformation urges banks to stay attuned to evolving consumer preferences and abreast with technological advancements to meet the dynamic demands of the financial landscape.

The COVID-19 pandemic expedited this trend and reinforced the indispensability of e-banking services, particularly as health experts' advice against cash transactions due to the potential longevity of the virus on banknotes (Pal & Bhadada, 2020). The obviation of physical presence increased the acceptance of e-banking, as it offers customers the convenience of performing transactions at any time and from any location using internet-connected devices. The demand for online payment systems like e-banking is growing, driven by the need to reduce in-person transactions.

E-banking emerges not just as a platform for executing financial transactions but also as a strategic tool for marketing, business expansion, innovation, and competitive advantage (Nazaritehrani & Mashali, 2020). E-banking helps bridge the gap between banked and unbanked populations, thereby unlocking new market potential for both financial institutions and their customers. Its widely acknowledged advantages, such as ease of access, convenience, dependability, cost efficiency, financial inclusion, and expanded reach, clearly position e-banking as mutually beneficial to banks and their customers (Sandhu & Arora, 2022). Notably, e-banking creates a beneficial relationship by helping banks reduce costs while providing customers with convenient and personalized services.

In a competitive banking industry characterized by technological advancement, evolving regulatory framework, and the emergence of new entrants like mobile phone companies offering e-wallets, banks have recognized e-banking services as essential for improving customer satisfaction and ensuring long-term profitability. S. Ahmad et al. (2020) established a significant association between the quality of e-banking services and increased customer confidence, leading to satisfaction.

Inegbedion et al. (2019) emphasize the importance of assessing key factors that influence customer satisfaction in e-banking. These include fairness in transaction Cost, privacy, speed, responsiveness, reliability, convenience, security, accessibility, and transaction processing time. When e-banking services align with these elements, they hold significant potential to improve customer satisfaction. For banks aiming to evaluate the effectiveness and service quality of their e-banking platforms, a comprehensive analysis of these variables is essential.

Customer satisfaction is a critical metric that reflects customer perceptions and experiences with a product or service (Rajput, 2019). The extent to which a product or service fulfils or exceeds the expectations of the customer is referred

to as Customer satisfaction. For banks to remain competitive in today's competitive environment, e-banking must align with and often surpass these expectations (Ahmed et al., 2020). According to Moraru and Duhnea (2018), improvements in e-banking services present an opportunity to enhance banks' financial performance. Thus, assessing customer satisfaction with e-banking services becomes essential.

E-banking has significantly improved banking services and customer satisfaction through 24/7 accessibility, streamlined transactions, and personalized services. According to Usman et al. (2020), these digital advancements foster convenience and efficiency, empowering customers with seamless financial experiences and ultimately bolstering their overall satisfaction and loyalty. The evolving landscape of global events, particularly the COVID-19 pandemic, financial inclusion, and sustainability, has hastened the rise and adoption of e-banking. Serving as a catalyst for change in the banking industry, e-banking has effectively responded to the challenges brought about by the pandemic while also addressing the security of cash-based transactions, geographic limitations, and positioning banks strategically for the future.

However, based on the literature review, technological advancements are not without flaws, and e-banking is no exception, as highlighted in various literature. E-banking services are vulnerable to various cybersecurity threats, including fraud, such as identity theft and unauthorized account access, which underscore the importance of strong authentication measures and protection of customer credentials (I. Ahmad et al., 2024; Cele & Kwenda, 2025). These persistent challenges demand attention because they significantly hinder customers from adopting e-banking (I. Ahmad et al., 2024; Cele & Kwenda, 2025), and customers' awareness of cybersecurity threats directly influences their satisfaction.

These issues affect multiple products and services delivered via the e-banking platform. Improving customer satisfaction depends on the bank's ability to effectively address and resolve performance-related challenges within its e-banking systems (Beyene, 2020). According to Balbin-Romero et al. (2022), many e-banking users experience discontent because e-banking platforms are difficult to use. Given that customer satisfaction is significantly related to service quality in financial operations. Assessing the challenges in e-banking is crucial for banks to not only survive but thrive in the dynamic and competitive financial landscape to retain users.

Previous studies on the adoption of e-banking often overlook the underlying psychological factors that influence customers' behavioral intentions (Liao et al., 2024). Ajzen (1991) explains that behavioral intention represents the motivational influences behind a specific behavior, reflecting the degree of effort an individual is prepared to invest in carrying it out. Given that the Theory of Planned Behavior (TPB) constructs are known to influence the promotion of e-banking adoption significantly (Liao et al., 2024; Nasri & Charfeddine, 2012), incorporating these psychological dimensions in the e-banking customer satisfaction study is essential for a more comprehensive understanding of customers' behavior (Sahi, 2024).

In Malaysia, e-banking adoption has been linked to ease of use and customer attitude, whereas perceived risk showed no significant impact on users' adoption decisions (Al-Gharaibah, 2020). In contrast, e-banking customers in Pakistan form their adoption decisions based on the platform's interactivity, with service quality playing a vital role in shaping their perceptions of e-banking services (Raza et al., 2020). These varied findings highlight the necessity for further research, particularly in developing nations where technological advancement remains limited.

In the Philippine context, studies have made strides in understanding customer satisfaction with e-banking, but gaps persist. For instance, Tan (2021) examination of e-banking service quality using the SERVQUAL model highlighted customer satisfaction nuances in privacy and system availability. However, the study did not delve into the assessment of e-banking satisfaction through the Theory of Planned Behavior (TPB) model, leaving a literature gap in understanding the role of subjective norms, behavioral beliefs, and perceived behavioral control in bringing desirable changes in customers' behavior (Jaiwani et al., 2022). Similarly, Depusoy et al. (2020) identified factors such as convenience, security, fees, and reliability as impactful. Still, they did not analyze e-banking adoption and customer satisfaction through the lens of the TPB model. This oversight creates a gap in the literature, as the TPB framework offers insights into how subjective norms and perceived behavioral control can influence satisfaction and adoption behavior, complementing previously studied factors.

These gaps highlight the need for this study, which applies the TPB model explicitly to comprehensively assess customer satisfaction with e-banking services, thereby providing a more holistic understanding of the factors influencing users' perceptions and behaviors in the e-banking landscape. This study examines the experiences and challenges of e-banking users to provide insights into the evolving e-banking landscape. As customers increasingly influence service delivery, understanding their needs is crucial. While supporting global efforts to enhance e-banking satisfaction, the study offers a unique perspective on the Philippine context.

Although the value of e-banking is widely recognized, awareness and understanding of the key drivers behind customer adoption and satisfaction remain limited (Agcaoili, 2020; Pearlpaaly, 2021). Investigating the impact of e-banking on customer satisfaction is essential to uncover the factors that enhance user experience and to identify challenges that may discourage continued use.

This study focuses on e-banking due to its potential to promote financial inclusion and extend banking services to remote areas where traditional banking infrastructure is limited. It also addresses changing trends in customer satisfaction in the digital banking sector. While technology adoption has been linked to increased e-banking use (Mulia et al., 2021), no recent study has examined satisfaction and challenges among e-banking users in Baguio City. Gaining insights into customer satisfaction is essential for banks to identify areas for service enhancement, reduce customer attrition, and strengthen trust and loyalty. The study addresses this gap by employing the SERVQUAL and the

Theory of Planned Behavior (TPB) models to comprehensively analyze customer perceptions and behaviors in the urban context of Baguio City, Philippines.

This study analyzed customer satisfaction with e-banking services among bank customers in Baguio City, Philippines, using the SERVQUAL dimensions and the Theory of Planned Behavior (TPB).

Specifically, the study provided answers to the following research questions:

1. What is the perceived level of customer satisfaction with e-banking services in terms of the following dimensions of service quality?
2. What is the perceived level of customer satisfaction with e-banking services in terms of TPB constructs?
3. What is the relationship between SERVQUAL dimensions and TPB constructs in shaping customer satisfaction within the context of e-banking services?
4. What problems do customers encounter when using e-banking services?

This study offers significant contributions by providing bank management with valuable insights to enhance e-banking services, customer satisfaction, and loyalty and promote the adoption and recommendation of e-banking. Furthermore, serves as a constructive contribution to the bank's ongoing efforts to refine and optimize its e-banking platform.

LITERATURE REVIEW

Theory of Planned Behavior

The theoretical underpinning of this study rests on the Theory of Planned Behavior (TPB) proposed by Ajzen (1991). According to TPB, an individual's intention to perform a specific behavior depends on the presence of both opportunities and necessary resources required for the desired behavior. TPB identifies three primary constructs that shape behavioral intention and actual behavior: attitude toward the behavior, subjective norms, and perceived behavioral control.

As outlined by Ajzen (1987), attitude toward the behavior refers to an individual's evaluation of the action, which can either support or hinder their intention to perform it. For instance, fears of financial loss from fraudsters who might access online accounts during security breaches may negatively influence a customer's thoughts and compromise their intention to use e-banking. Similarly, dissatisfaction with e-banking services can negatively impact customers' behavioral intentions to use the system in the future.

Subjective norm, as a form of social influence, shapes individual behavior based on what is deemed acceptable within a particular social group (Yeoh et al., 2024). It is typically understood as the collective influence of shared beliefs and the expectations of key social referents (Anser et al., 2020). In the context of e-banking, users can significantly influence non-users through their expressed satisfaction, often encouraging adoption via positive word-of-mouth. This reflects the principle of subjective norm, wherein individuals are motivated to adopt new technologies based on endorsements from peers who view the system as efficient, accessible, and dependable for managing online financial transactions.

Ajzen (2002) defines perceived behavioral control as the extent to which individuals believe they have control over performing a particular behavior. This control depends on personal beliefs about available resources and the likelihood that these resources will enable or obstruct the behavior (Aldammagh et al., 2021). Perceived behavioral control influences behavior directly through intention. For instance, dissatisfied users may discontinue e-banking due to insufficient knowledge, access to digital tools, or time (Teka, 2020). Even if banks improve services, security, privacy, and system performance, users may hesitate to engage if they lack the necessary resources despite having favorable attitudes and social support (Bashir et al., 2020). Intention, as defined by Abu-Taieh et al. (2022), reflects an individual's willingness and determination to perform a behavior and serves as the closest predictor of actual behavior. Pambudi et al. (2021) linked intention to perceived behavioral control, subjective norms, and attitudes, emphasizing the need to evaluate each factor within the context of the target population and behavior being studied.

Service Quality (SERVQUAL) Model

The Service quality (SERVQUAL) model, developed by Parasuraman et al. (1988), has been pivotal in identifying the key factors influencing customer satisfaction in e-banking. Recognized and widely applied across the service industry, SERVQUAL serves as a foundational tool for assessing service quality (Ko & Chou, 2020; Valenzo-Jiménez et al., 2019). Service quality is defined as the discrepancy between consumers' expectations and their actual perceptions of the service provided (Parasuraman et al., 1985). Since customers are the ultimate recipients of the service, their perceptions play a critical role in shaping service quality. Therefore, gaining insight into how customers perceive service delivery is the essential first step in providing a service that not only fulfills but exceeds their expectations (Bungatang & Reynel, 2021). Building on this notion, this study adopts the service quality model proposed by Parasuraman et al. (1985).

Organizations continually aspire to enhance and sustain service quality regardless of size or nature. Pursuing improved service quality enables banks to grow their market share, enhance competitiveness, and strengthen customer satisfaction and loyalty (Manju, 2020). The emphasis on service quality and customer satisfaction has gained considerable attention in academic and professional circles, as well as in marketing literature. Building a culture that prioritizes quality begins with leadership that values effective quality management systems and adopts customer-focused strategies. This approach creates an environment where organizational excellence and customer satisfaction thrive together (Pooya et al., 2020). As Pooya et al. (2020) note, management must ensure consistent service quality and implement robust quality control systems.

To measure customer perceptions of service quality, Parasuraman et al. (1988) initially identified ten dimensions, including competence, courtesy, reliability, tangibles, responsiveness, security, credibility, communication, access, and knowing the customer. subsequent refinement grouped these into five core SERVQUAL dimensions: tangibles, reliability, assurance, empathy, and

responsiveness (Parasuraman et al., 1985). This study applies these five SERVQUAL dimensions to evaluate customer satisfaction with e-banking services, in line with the research objectives and conceptual framework.

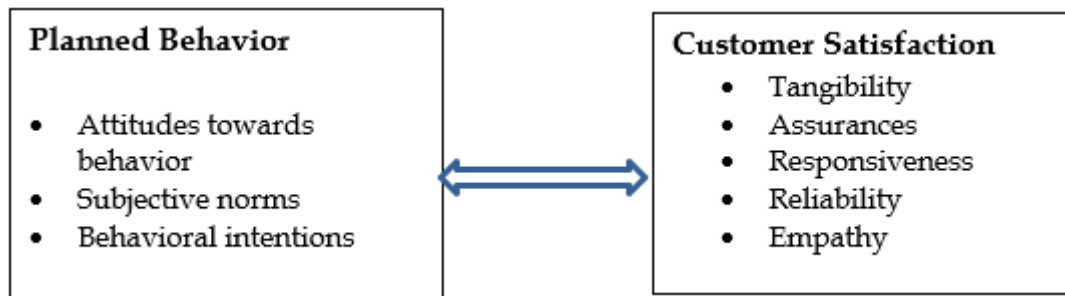


Figure 1. Conceptual Framework

METHODOLOGY

Research Design

This quantitative study employed a descriptive survey design to analyze the variables and the direction, strength, and nature of their relationships to achieve its objective.

Locale and Population

This study was conducted among bank customers who use e-banking to carry out their financial transactions in Baguio City, the Philippines. Based on the researcher's limited knowledge, there is no available data on the number of e-banking users in the city. According to Rieber (2020), it is not unusual for quantitative studies using a Likert scale questionnaire with an unknown population to use 300 or more samples as respondents, which is the case in this study. Although the computed sample size for the unknown population was estimated to be 384 (Cochran, 1977), assuming a 95% confidence level and a margin of error of 5%, the conservative estimate of $p = 0.5$, the sample size was increased to 450. The justification for increasing the sample was to compensate for a possible non-response rate of 17% (because the difference of 65 is around 17%), so the sample size was increased to 450. A purposive sampling technique was applied to ensure a deliberate and appropriate selection of participants relevant to the study objectives.

Data Gathering Tool

The study data were gathered through a self-made structured questionnaire after a review of the literature on service quality dimensions (Hammoud et al., 2018), three dimensions of the TPB model, and the problems encountered by e-banking users. The self-administered questionnaire was constructed to minimize researcher interference and social desirability bias and ensure that the instrument measures the research questions. The questionnaire underwent face and content validity by three experts. The validity result showed that the items in the questionnaire were consistent and appropriate to use in this study. The questionnaire was pretested to assess its clarity and applicability. The pretest data yield a ($\alpha=0.88$), interpreted as high reliability, indicating that the measure is reliable. The questionnaire consists of three parts.

Part I contains statements relating to the perceived level of customer satisfaction with e-banking services. This part consists of statements on the five service quality dimensions: tangibility, responsiveness, reliability, assurance, and empathy (Parasuraman et al., 1988). The indicators for the SERVQUAL dimensions comprise twenty-five (25) items, five items per dimension. The responses were recorded using a 4-point Likert scale varying from "strongly agree" to "strongly disagree."

Part II contains statements relating to the level of customer satisfaction with e-banking services in terms of TPB components. The three key determinants of the TPB model—attitude, subjective norm, and perceived behavioral control—were used to measure the planned behavior of customers towards e-banking services in this aspect. This part comprises twelve (12) items, four for each key component. The responses were recorded using a 4-point Likert scale varying from "strongly agree" to "strongly disagree."

Part III contained statements that assess the problems encountered by e-banking users. This part comprises ten (10) statements recorded using a 4-point Likert scale varying from "strongly agree" to "strongly disagree."

Procedure

Ethics approval was obtained from the Research Ethics Committee of the Saint Louis University Research and Innovation Center, Baguio City. The respondent's consent was sought through an informed consent form; they were assured anonymity and confidentiality of their voluntary participation. Respondents were informed that the exercise was purely for academic purposes. Data was gathered online through Google Forms.

Respondents' level of customer satisfaction with e-banking services across all five SERVQUAL dimensions and TPB constructs was analyzed using descriptive statistics such as frequency distributions, weighted mean, and standard deviation. Inferential statistical techniques, specifically Pearson correlation analysis, were applied to examine the relationships between the SERVQUAL dimensions and TPB components. Also, problems encountered by customers when using e-banking services were analyzed using the weighted mean.

RESEARCH RESULT

Table 1. Level of customer satisfaction with e-banking services in terms of the SERVQUAL dimensions

Respondents' mean score				Mean	SD	Min	Max
Result	Range	frequency	Percentage	3.63	0.59	1.00	4.00
	Scores						
Very Satisfied	3.26 - 4.00	343	76%				
Satisfied	2.51 - 3.25	79	18%				
Slightly Satisfied	1.76 - 2.50	24	5%				

Not Satisfied	1.00 - 1.75	6	1%
		452	100%

Table 2. Summary of the level of customer satisfaction with e-banking services in terms of TPB dimensions

Respondents' mean score				Mean	SD	Min	Max
Result	Range Scores	frequency	Percentage	3.68	0.55	1.00	4.08
Very Satisfied	3.26 - 4.00	349	77%				
Satisfied	2.51 - 3.25	78	17%				
Slightly Satisfied	1.76 - 2.50	16	4%				
Not Satisfied	1.00 - 1.75	8	2%				
		451	100%				

Table 3. Relationship between SERVQUAL dimensions and TPB constructs

	Tangibility	Responsiveness	Reliability	Assurance	Empathy
Attitude	0.55	0.57	0.58	0.58	0.52
Subjective Norms	0.68	0.68	0.71	0.76	0.72
Behavioral Intentions	0.72	0.73	0.76	0.77	0.74

Table 4. Problems encountered by customers in using e-banking services

Indicators	Mean	Descriptive Interpretation
E-banking services may not perform well because of network problems.	3.53	Problem consistently experienced
The e-banking system may not be accessible due to technological issues.	3.48	Problem consistently experienced
When transferring money through e-banking, there is a fear of losing money due to carelessness and mistakes.	3.47	Problem consistently experienced
Providing personal information over e-banking is risky.	3.44	Problem consistently experienced
Criminals can hack or steal from my bank account if my technological device is lost.	3.44	Problem consistently experienced
Identity theft.	2.13	Problem is minor
E-banking services perform payment processes incorrectly.	2.08	Problem is minor
E-banking is time-consuming.	1.59	Problem is not experienced
Money might get lost due to a transaction error.	1.51	Problem is not experienced

Money might get lost due to technological issues. 1.50 Problem is not experienced

Weighted Mean	2.61
---------------	-------------

Table 1 shows that the Level of customer satisfaction with e-banking services in terms of the SERVQUAL dimensions was very satisfied (Mean 3.63 ± 2.91), indicating a uniformity in the opinions. The study revealed that the tangibility dimension has the highest satisfaction score (3.70) among the SERVQUAL dimensions. E-banking users' emphasis was due to the technological advancements of banks' online platforms. At the same time, reliability is the lowest score (3.58) of satisfaction among the SERVQUAL dimensions.

The respondent demonstrated in Table 2 that they are very satisfied with e-banking services in terms of the three key constructs of TPB that influence an individual's behavior (Mean 3.68 ± 0.55). The study revealed that attitude is the highest among the three TPB constructs, with a mean score of 3.76. At the same time, subjective norm is the lowest, with a mean score of 3.62.

Table 3 revealed a positive and moderate-to-strong correlation between the SERVQUAL dimensions (Tangibility, Responsiveness, Reliability, Assurance, and Empathy) and the TPB components (Attitude, Subjective Norms, and Behavioral Intentions). Attitude shows moderate positive relationships across all service quality dimensions, with the highest influence coming from Reliability and Assurance (0.58), respectively. Subjective Norms are strongly associated with Assurance (0.76) and Empathy (0.72). Behavioral Intentions have the strongest correlations overall, particularly with Assurance (0.77) and Reliability (0.76).

Table 4 revealed the Problems e-banking users encountered using e-banking services, with an overall Weighted Mean of 2.61 and a moderate level of difficulties, revealing security and accessibility as significant areas of concern. Items with the highest mean scores are network problems (M = 3.53), technological inaccessibility (M = 3.48), and fear of money loss due to carelessness or mistakes (M = 3.47), which are problems consistently experienced by users. While problems such as identity theft (M = 2.13) and incorrect payment processing (M = 2.08) are only minor concerns, time consumption (M = 1.59), transaction errors (M = 1.51), and technology-related money loss (M = 1.50) are not generally experienced by most customers.

DISCUSSION

Customer satisfaction with e-banking services was measured through the Service Quality (SERVQUAL) dimensions. These are tangibility (M = 3.70), responsiveness (M = 3.64), assurance (M = 3.64), empathy (M = 3.61), and reliability (M = 3.58) dimensions of e-banking. This result suggests that e-banking delivers high customer satisfaction to e-banking users. The high level of customer satisfaction indicates that banks have consistently provided reliable e-banking services, responded quickly to customer needs, shown genuine concern, and made ongoing efforts to improve the visual design of their digital platforms. The

findings revealed that the quality of e-banking services significantly influences customer satisfaction and the adoption of e-banking platforms.

This study corroborates the results of Raza et al. (2020), who revealed that SERVQUAL positively and significantly influences e-banking customer satisfaction in Pakistan. Their study further demonstrated that higher service quality across the SERVQUAL dimensions leads to greater customer satisfaction and, in turn, increased customer loyalty. This implies that banks must continuously improve their e-banking service quality to enhance satisfaction and encourage more use of e-banking for frequent transactions. Making e-banking a competitive advantage for banks (Atyat et al., 2023). Likewise, Mohamud and Farah (2023) stated that e-banking has many advantages for banks. These are high consumer engagement and contentment, as well as automated processes. According to Sahut (2021), e-banking reduces operational costs with better quality of services, and it is efficient and convenient to perform transactions anytime.

The tangibility dimension of SERVQUAL is revealed to have the highest mean score, indicating that users are very satisfied and appreciate the physical aspects of e-banking platforms, such as user interface, appearance, and accessibility (Bashir et al., 2020). E-banking users emphasize technological advancements in online banking platforms as major contributors to their satisfaction. Philippine banks' substantial investment in enhancing the visual design of their platforms demonstrates their recognition that an attractive and user-friendly interface fosters positive user experiences and contributes to long-term customer satisfaction in e-banking adoption. Likewise, Raza et al. (2020) state that site organization significantly influences e-banking users, as a more attractive and well-structured platform enhances usability and increases customer satisfaction. The tangible dimension is crucial in improving customer satisfaction in e-banking as it contributes to shaping banking customers' overall service quality perceptions.

This study reveals that customers are highly satisfied with e-banking services, with their behavioral intentions, attitudes, and subjective norms being crucial in creating that satisfaction. TPB has been found to influence customer satisfaction with e-banking services positively. Results indicate that all three TPB constructs, subjective norm, attitude, and behavioral intention, significantly influence both satisfaction and the adoption of e-banking services. These findings contrast with those of Sahi (2024), who found that while attitude and social influence affected digital banking use in Iraq, perceived behavioral control had no significant effect.

The present study findings demonstrate that customers are more inclined to use e-banking services and that TPB constructs influence internet-based behavior in adopting e-banking. This study result affirms Jain et al. (2025) that the constructs of TPB influence customers' willingness to adopt green banking (e-banking), ultimately driving actual usage behavior. Likewise, according to Rodhiyatammardhiyah et al. (2023), TPB helps find the right strategy for retaining customers and maintaining customer loyalty. Having loyal customers enhances the bank's financial performance, underscoring the essence of

psychological and social components in creating positive user experiences with e-banking services. This implies that service quality alone is not sufficient to guarantee customer satisfaction. It is essential to incorporate psychological and social factors to influence how users perceive and interact with e-banking platforms, thus boosting customer experience. Also, improving user perception and fostering social acceptance through strategic design and marketing can significantly enhance customer satisfaction and loyalty.

The relationship between SERVQUAL dimensions and the Theory of Planned Behavior (TPB) constructs in the context of e-banking services shows a positive correlation. This suggests that improving SERVQUAL dimensions enhances customer satisfaction and reinforces positive psychological and social constructs that drive e-banking adoption and continuous usage. This result aligns with the principles of TPB. It resonates with contemporary research in e-banking that customers will continue to patronize e-banking services if their e-banking is beneficial to them (Rahma & Sofyani, 2024). Stimuli that reinforce behavior can support a person's continued behavior over time (Ajzen, 1991).

Although the respondents of this study demonstrated very satisfactory customer satisfaction with e-banking, they also identified problems they experienced while interfacing with the e-banking services. The most pressing concerns related to network issues, technological accessibility, and risks during financial transactions, including fears of loss due to mistakes and security concerns related to personal information and device theft, are consistently experienced problems.

These issues encountered by e-banking users serve as significant deterrents, which banks should improve on to enhance customer experience. The study's result corroborates Fang and Quintos (2023) statement that banks must improve their online banking service security measures. Considering Cele and Kwenda's (2025) assertion that cybersecurity threats pose a barrier to digital banking adoption. The enormous and continuous cybersecurity threats to e-banking systems contribute to users' anxiety and fear of e-banking services. Given that e-banking continues to evolve as the cornerstone of financial dealings. Bank customers rely strongly on banks to address the issues highlighted in this study concerning e-banking. To mitigate clients' fears and anxiety, banks must adopt proactive strategies to enhance users' trust. One such approach includes integrating well-structured, reassuring messages such as "Your data is protected" or "Your transaction is encrypted and secure" that appear during user interactions. These prompts help reduce cognitive overload and foster a sense of security throughout the digital banking experience.

The improvement required in the e-banking service cannot be overemphasized. Respondents of this study revealed that their highest concern relates to network instability, which impairs service performance and undermines customer confidence in the e-banking system's reliability. This affirms Hassan's (2025) findings that concerns like deficient digital infrastructure have been identified as a significant impediment to the widespread adoption of e-banking. Banks are to strengthen their network infrastructure to minimize downtime and service interruptions. Given that e-banking has become a

convenient means for customers to access financial services without visiting physical bank branches.

CONCLUSIONS AND RECOMMENDATIONS

This study analyzed customer satisfaction in e-banking services among bank customers, incorporating the SERVQUAL dimensions and the Theory of Planned Behavior (TPB). The respondent expressed high customer satisfaction with e-banking due to its service quality and positive social behavioral influence. The result highlighted that enhanced service quality influences e-banking user perceptions and social views in the continuous use of e-banking services. These findings underscore the enduring appeal and reliability of e-banking services, highlighting their significance in meeting customer needs and expectations in the digital banking landscape.

The high level of reliance exhibited in this study places a heavy responsibility on banks to secure all e-banking transactions and services. Given that e-banking users highlighted their fear about the security threat to e-banking transactions and personal data privacy. E-banking services face significant hurdles in the form of network problems and cyber threats, leaving customers susceptible to online threats like identity theft and the risk of fraudulent banking transactions. Customers expect robust security measures and digital infrastructure improvement to reduce barriers to the continuous usage and adoption of e-banking. These efforts will reinforce positive perceptions of e-banking services and foster continued customer engagement and trust.

ADVANCED RESEARCH

The study's restriction to Baguio City, Philippines, may not fully reflect the diversity of conditions and experiences that e-banking users encounter. The research provides meaningful contributions to the broader discourse on e-banking trends, suggesting that further study be conducted on a broader landscape of e-banking users.

ACKNOWLEDGMENT

The successful completion of this scholarly work would not have been possible without the support and contributions of several remarkable individuals. Deepest gratitude is extended to Dr. Asuncion G. Nazario, Dr. Jaime Andres T. Ballena IV, and Mr. Conrado B. Chan Jr., CPA, MBA, for their time, patience, and insightful comments and suggestions, which greatly enriched the quality of this study.

Sincere thanks are also extended to the Graduate Program Coordinator (GPC-SLU), Dr. Zenedith Monang, for her astute guidance and dedicated coordination, both of which were instrumental in bringing this research to fruition. Appreciation to the family of Aluma for their unwavering prayers and support.

REFERENCES

- Abu-Taieh, E. M., AlHadid, I., Abu-Tayeh, S., Masa'deh, R., Alkhawaldeh, R. S., Khwaldeh, S., & Alrowwad, A. (2022). Continued Intention to Use of M-Banking in Jordan by Integrating UTAUT, TPB, TAM and Service Quality with ML. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 120. <https://doi.org/10.3390/joitmc8030120>
- Agcaoili, L. (2020, July 17). 51.2 million Pinoys remain unbanked - BSP. Philstar.Com. <https://www.philstar.com/business/2020/07/17/2028480/512-million-pinoys-remain-unbanked-bsp>
- Ahmad, I., Khan, S., & Iqbal, S. (2024). Guardians of the vault: Unmasking online threats and fortifying e-banking security, a systematic review. *Journal of Financial Crime*, 31(6), 1485–1501. <https://doi.org/10.1108/JFC-11-2023-0302>
- Ahmad, S., Bhatti, S. H., & Hwang, Y. (2020). E-service quality and actual use of e-banking: Explanation through the Technology Acceptance Model. *Information Development*, 36(4), 503–519. <https://doi.org/10.1177/0266666919871611>
- Ahmed, R. R., Romeika, G., Kauliene, R., Streimikis, J., & Dapkus, R. (2020). ES-QUAL model and customer satisfaction in online banking: evidence from multivariate analysis techniques. *Oeconomia Copernicana*, 11(1), 59–93. <https://doi.org/10.24136/oc.2020.003>
- Ajzen, I. (1987). Attitudes, Traits, and Actions: Dispositional Prediction of Behavior in Personality and Social Psychology. In *Advances in Experimental Social Psychology* (Vol. 20, pp. 1–63). Elsevier. [https://doi.org/10.1016/S0065-2601\(08\)60411-6](https://doi.org/10.1016/S0065-2601(08)60411-6)
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior1. *Journal of Applied Social Psychology*, 32(4), 665–683. <https://doi.org/10.1111/j.1559-1816.2002.tb00236.x>
- Aldammagh, Z., Abdeljawad, R., & Obaid, T. (2021). Predicting Mobile Banking Adoption: An Integration of TAM and TPB with Trust and Perceived Risk. *Financial Internet Quarterly*, 17(3), 35–46. <https://doi.org/10.2478/fiqf-2021-0017>
- Al-Gharaibah, O. B. (2020). Predictors of E-banking Service Adoption in Malaysia Using an Extended Technology Acceptance Model. *Int. J. Contemp. Manag. Inf. Technol*, 1(1), 23–29.
- Anser, M. K., Zaigham, G. H. K., Imran Rasheed, M., Pitafi, A. H., Iqbal, J., & Luqman, A. (2020). Social media usage and individuals' intentions toward adopting Bitcoin: The role of the theory of planned behavior and perceived risk. *International Journal of Communication Systems*, 33(17), e4590. <https://doi.org/10.1002/dac.4590>

- Atyat, Z. A., Karaki, B. S. A., Maharmah, M. H., & Lozi, B. (2023). The Role of E-Banking Services in Achieving Competitive Advantage – Foreign Banks in Jordan. *WSEAS TRANSACTIONS ON COMPUTER RESEARCH*, 11, 362–375. <https://doi.org/10.37394/232018.2023.11.33>
- Balbin-Romero, G., Carrera-Mija, E., Serrato-Cherres, A., & Cordova-Buiza, F. (2022). Relationship between e-banking service quality based on the e-SERVQUAL model and customer satisfaction: a study in a Peruvian bank. *Banks and Bank Systems*, 17(4), 180-188. [http://dx.doi.org/10.21511/bbs.17\(4\).2022.15](http://dx.doi.org/10.21511/bbs.17(4).2022.15)
- Bashir, M. A., Ali, M. H., Wai, L. M., Hossain, M. I., & Rahaman, M. S. (2020). Mediating Effect of Customer Perceived Value on the Relationship between Service Quality and Customer Satisfaction of E-Banking in Bangladesh. *International Journal of Advanced Science and Technology*, 29(08), Article 08.
- Beyene, E. (2020). Adoption and Challenges of Mobile Banking Systems in Ethiopia: The Case of Cooperative Bank of Oromiya. *African Conference on Information Systems and Technology*. <https://digitalcommons.kennesaw.edu/acist/2020/allpapers/5>
- Bungatang, B., & Reynel, R. (2021). The Effect of Service Quality Elements on Customer Satisfaction. *Golden Ratio of Marketing and Applied Psychology of Business*, 1(2), 107–118. <https://doi.org/10.52970/grmapb.v1i2.102>
- Cele, N. N., & Kwenda, S. (2025). Do cybersecurity threats and risks have an impact on the adoption of digital banking? A systematic literature review. *Journal of Financial Crime*, 32(1), 31–48. <https://doi.org/10.1108/JFC-10-2023-0263>
- Cochran, W. G. (1977). Professor of Statistics, Emeritus Harvard University. *Johan Wiley & Sons Inc.*
- Depusoy, J. L., Romuar, F. B., & Nartea, M. A. (2020). E-Banking Facility Services in the Philippines. *International Journal of Disaster Recovery and Business Continuity*, 11(2), 166–178.
- 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. <https://doi.org/10.32996/jbms.2023.5.5.5>
- Hammoud, J., Bizri, R. M., & El Baba, I. (2018). The Impact of E-Banking Service Quality on Customer Satisfaction: Evidence from the Lebanese Banking Sector. *Sage Open*, 8(3), 2158244018790633. <https://doi.org/10.1177/2158244018790633>
- Hassan, R. (2025). Barriers to e-banking adoption in Egypt: An expert-based interpretive structural modeling analysis. *Digital Policy, Regulation and Governance*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/DPRG-09-2024-0232>
- Inegbedion, H., Inegbedion, E. E., Osifo, S. J., Eze, S. C., Ayeni, A., & Akintimehin, O. (2019). Exposure to and usage of e-banking channels: Implications for bank customers' awareness and attitude to e-banking in Nigeria. *Journal of*

- Science and Technology Policy Management, 11(2), 133–148.
<https://doi.org/10.1108/JSTPM-02-2019-0024>
- Jain, A., Behera, B., & Kochhar, K. (2025). Customer adoption of green banking: An extended theory of planned behavior. *Management Decision*.
<https://doi.org/10.1108/MD-06-2024-1438>
- Jaiwani, M., Gopalkrishnan, S., Mohanty, S. P., & Murthy, N. (2022). Understanding Service Quality, Customer Satisfaction and Banking Behaviour from an E-Banking Perspective: An Empirical Approach. 2022 International Conference on Sustainable Islamic Business and Finance (SIBF), 12–20. <https://doi.org/10.1109/SIBF56821.2022.9939858>
- Ko, C.-H., & Chou, C.-M. (2020). Apply the SERVQUAL Instrument to Measure Service Quality for the Adaptation of ICT Technologies: A Case Study of Nursing Homes in Taiwan. *Healthcare*, 8(2), 108.
<https://doi.org/10.3390/healthcare8020108>
- Liao, Y. K., Nguyen, H. L. T., Dao, T. C., Nguyen, P. T. T., & Sophea, H. (2024). The antecedents of customers' attitude and behavioral intention of using e-banking: the moderating roles of social influence and customers' traits. *Journal of Financial Services Marketing*, 29(3), 1037-1061.
<https://doi.org/10.1057/s41264-023-00254-4>
- Manju, S. (2020). CUSTOMERS' PERCEPTION TOWARDS RETAIL BANKING SERVICES OF THE COMMERCIAL BANKS IN MANDYA TOWN. 40(13).
- Mohamud, H. A., & Farah, M. A. (2023). The Impact of E-Banking on Commercial Banks: A Literature Review. *International Journal of Membrane Science and Technology*, 10(5), 504–512. <https://doi.org/10.15379/ijmst.v10i5.2535>
- 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), 003-009.
- Mulia, D., Usman, H., & Parwanto, N. B. (2021). The role of customer intimacy in increasing Islamic bank customer loyalty in using e-banking and m-banking. *Journal of Islamic Marketing*, 12(6), 1097–1123.
<https://doi.org/10.1108/JIMA-09-2019-0190>
- Nasri, W., & Charfeddine, L. (2012). Factors affecting the adoption of Internet banking in Tunisia: An integration theory of acceptance model and theory of planned behavior. *The journal of high technology management research*, 23(1), 1-14. <https://doi.org/10.1016/j.hitech.2012.03.001>
- Nazaritehrani, A., & Mashali, B. (2020). Development of E-banking channels and market share in developing countries. *Financial Innovation*, 6(1), 12.
<https://doi.org/10.1186/s40854-020-0171-z>
- Pal, R., & Bhadada, S. K. (2020). Cash, currency and COVID-19. *Postgraduate Medical Journal*, 96(1137), 427–428.
<https://doi.org/10.1136/postgradmedj-2020-138006>
- Pambudi, A., Widayanti, R., & Edastama, P. (2021). Trust and Acceptance of E-Banking Technology Effect of Mediation on Customer Relationship Management Performance. *ADI Journal on Recent Innovation (AJRI)*, 3(1), 87–96. <https://doi.org/10.34306/ajri.v3i1.538>

- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49(4), 41-50. <https://doi.org/10.1177/002224298504900403>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A Multiple-Item Scale for Measuring Consumer Perc - ProQuest. Parasuraman, A, Valarie A. Zeithaml, and Leonard L. Berry. "Servqual: A Multiple-Item Scale for Measuring Consumer Perc - ProQuest." Accessed April 19, 2025. <https://www.proquest.com/openview/7d007e04d78261295e5524f15bef6837/1?cbl=41988&pq-origsite=gscholar>.
- Pearlpaly. (2021, February 1). Why Filipinos Remain Unbanked: Addressing Banking Challenges in the Philippines. <https://pearlpaly.com/why-filipinos-remain-unbanked/>
- Pooya, A., Abed Khorasani, M., & Gholamian Ghouzhd, S. (2020). Investigating the effect of perceived quality of self-service banking on customer satisfaction. *International Journal of Islamic and Middle Eastern Finance and Management*, 13(2), 263-280. <https://doi.org/10.1108/IMEFM-12-2018-0440>
- Rahma, N., & Sofyani, H. (2024). The influence of islamic banking digital service quality on intention to continue using islamic banking: A case of Indonesia. *Journal of Accounting and Investment*, 25(1), 269-288. <https://doi.org/10.18196/jai.v25i1.18841>
- Rajput, S. S. K. (2019). The impact of online banking attributes on customer satisfaction: A study from the Irish retail banking customer perspective. National College of Ireland. Unpublished.
- Raza, S., Umer, A., Qureshi, M., & Dahri, A. (2020). Internet banking service quality, e-customer satisfaction and loyalty: the modified e-SERVQUAL model. *The TQM Journal*, 32 (6), 1443-1466. <https://doi.org/10.1108/tqm-02-2020-0019>.
- Rieber, L. P. (2020). Q methodology in learning, design, and technology: An introduction. *Educational Technology Research and Development*, 68(5), 2529-2549. <https://doi.org/10.1007/s11423-020-09777-2>
- Rodhiyatammardhiyah, K. P., Suhartato, D., & Sosianika, A. (2023). E-Banking services during COVID-19: Innovation for a TPB perspective. 030037. <https://doi.org/10.1063/5.0155380>
- Sahi, A. M. (2024). Predicting Iraqi Bank Customers Intentions to Use Digital Banking Services Through the Extended Theory of Planned Behavior (TPB). *Jurnal Ilmu Manajemen Saburai (JIMS)*, 10(2), 221-240. <https://doi.org/10.24967/jims.v10i2.3649>
- Sahut, J.-Michel. (2021). Advantages of E-banking – ProQuest. *Journal of Internet Banking and Commerce*, 26(5). <https://www.proquest.com/openview/9cff19d47e0759f99e60184e03dc30f9/1?cbl=39255&pq-origsite=gscholar>
- 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. <https://doi.org/10.1002/ijfe.2266>

- Tan, B. S. (2021). Assessing the Internet Banking Services of Selected Banks in the Philippines using E-SERVQUAL Model. *International Journal of Scientific and Research Publications (IJSRP)*, 11(3), 227–231. <https://doi.org/10.29322/IJSRP.11.03.2021.p11130>
- Teka, B. M. (2020). Factors affecting bank customers usage of electronic banking in Ethiopia: Application of structural equation modeling (SEM). *Cogent Economics & Finance*, 8(1), 1762285. <https://doi.org/10.1080/23322039.2020.1762285>
- Usman, O., Monoarfa, T. A., & Marsofiyati, M. (2020). E-Banking and mobile banking effects on customer satisfaction. *Accounting*, 1117–1128. <https://doi.org/10.5267/j.ac.2020.7.006>
- Valenzo-Jiménez, M. A., Lazaro-López, D. A., & Martínez- Arroyo, J. A. (2019). Application of the SERVQUAL model to evaluate the quality in the transportation service in Morelia, Mexico. *DYNA*, 86(211), 64–74. <https://doi.org/10.15446/dyna.v86n211.78368>
- Yeoh, R., Kim, H. K., Kang, H., Lin, Y. A., Ho, A. D., & Ho, K. F. (2024). What Determines Intentions to Use Mobile Fitness Apps? The Independent and Joint Influence of Social Norms. *International Journal of Human-Computer Interaction*, 40(2), 121–130. <https://doi.org/10.1080/10447318.2022.2111040>