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Examining Customer Satisfaction Drivers in Digital Banking Services for Young Adult Users

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ABSTRACT

The rapid expansion of digital banking has reshaped financial service delivery, particularly among young adults who rely heavily on mobile and online platforms for daily transactions. Understanding the determinants of customer satisfaction in this context is therefore essential for sustaining competitiveness and user retention. This study aims to examine the effects of digital banking service quality dimensions: reliability, security, responsiveness, and convenience, on customer satisfaction among young adult users. A quantitative research design was employed using an online survey distributed to 150 digital banking users aged 18–30 years. Data were analyzed using multiple regression analysis. The results indicate that the proposed model explains a substantial proportion of variance in customer satisfaction (R^2 = 0.867). Convenience shows the strongest positive and significant effect on customer satisfaction ($\beta = 0.592$, $p < 0.001$), followed by security ($\beta = 0.185$, $p < 0.05$). In contrast, reliability ($\beta = 0.145$, $p > 0.05$) and responsiveness ($\beta = 0.081$, $p > 0.05$) do not demonstrate significant effects. These findings suggest that experiential and risk-related attributes play a more prominent role in shaping satisfaction among digitally experienced users. The study provides practical implications for banks and fintech providers to prioritize convenience-driven features and visible security mechanisms to enhance customer satisfaction and long-term engagement.

Keywords: Convenience; Customer Satisfaction; Digital Banking; Security; Service Quality; Young Adults

INTRODUCTION

The rapid expansion of digital banking has fundamentally reshaped the contemporary financial landscape, particularly among young adults who increasingly rely on mobile applications and online platforms to manage their financial activities. Advances in digital technology have enabled banks to deliver faster, more accessible, and more efficient services, allowing users to conduct transactions, pay bills, and monitor spending patterns without the need for physical branch visits (Sarif & Ariyanti, 2024). As digital platforms progressively replace traditional service touchpoints, understanding customer satisfaction in digital banking has become critically important for financial institutions seeking to retain younger users and foster long-term customer loyalty in an increasingly competitive environment.

From a theoretical standpoint, customer satisfaction in digital banking can be explained through established service quality and consumer satisfaction frameworks. The SERVQUAL model conceptualizes service quality through core dimensions such as reliability and responsiveness, which have long been recognized as key antecedents of customer satisfaction and favorable behavioral outcomes (Parasuraman et al., 1988). In the context of digital banking, reliability refers to the accuracy, consistency, and dependable performance of banking systems, while responsiveness reflects the ability of digital platforms to provide prompt services and timely support. Complementing this perspective, Expectation–Confirmation Theory (ECT) explains satisfaction as the result of a comparison between users' prior expectations and their perceived performance of a system after use (Bhattacherjee, 2001). Within digital banking environments, users are more likely to experience higher satisfaction when system performance meets or exceeds their expectations related to security, convenience, and operational efficiency. Although SERVQUAL and ECT do not prescribe a fixed set of service attributes, together they provide a robust theoretical foundation for understanding how perceived service performance shapes customer satisfaction. Drawing on prior empirical studies, reliability, security, responsiveness, and convenience are therefore conceptualized as the principal dimensions of service performance in digital banking settings (Ronny, 2022).

These theoretical arguments are strongly supported by empirical evidence across diverse banking contexts. Numerous studies have identified reliability, responsiveness, security, and convenience as critical determinants of customer satisfaction in digital banking. Research conducted in Malaysia and other regions demonstrates that responsiveness and security significantly influence satisfaction with online banking services (Vijayanand, 2021). Similarly, Lim et al. (2023) report that reliability, system responsiveness, and convenience are positively associated with satisfaction in mobile banking usage. More recently, Daud et al. (2025) highlight that ease of application use, reliability, and perceived security rank among the most influential factors shaping user satisfaction in the Malaysian digital banking context. Collectively, these findings reinforce the view that consistent system performance, responsive service delivery, strong security perceptions, and convenience-oriented features form the core drivers of customer satisfaction in digital banking environments.

Despite these valuable contributions, several important gaps remain in the existing literature. First, prior empirical studies have often examined service quality dimensions, such as reliability, responsiveness, security, and convenience, either individually or in limited combinations. This fragmented approach restricts a comprehensive understanding of their joint influence on customer satisfaction within a unified analytical framework. As a result, the combined effects of these fundamental service performance dimensions remain underexplored. Second, young adults as a distinct user segment have received relatively limited empirical attention, as most studies focus on broader or

mixed demographic populations. From the perspective of ECT, young adults may form expectations and satisfaction judgments differently due to their higher levels of digital literacy, stronger expectations for efficiency and convenience, and heightened sensitivity to security and privacy risks. Consequently, findings derived from general user samples may not fully capture the satisfaction mechanisms that are particularly salient among digitally native young banking users.

In response to these gaps, this study aims to examine the joint effects of reliability, security, responsiveness, and convenience on customer satisfaction with digital banking services among young adult users. By adopting an integrated, theory-driven approach that combines service quality perspectives with ECT, this research seeks to provide a more holistic understanding of satisfaction formation in digital banking contexts. The study contributes empirically by offering focused evidence on young adult users, a segment that increasingly dominates digital financial activities. Practically, the findings are expected to provide valuable insights for financial institutions seeking to enhance service quality, optimize user experience, and strengthen long-term customer relationships. Overall, this study extends the existing body of knowledge on digital banking satisfaction by offering a more comprehensive and context-specific perspective on how key service performance dimensions jointly shape customer satisfaction.

LITERATURE REVIEW

Digital Banking Service Quality

Digital banking service quality has been widely recognized in the literature as a key determinant of customer satisfaction in the banking industry, particularly within technology-mediated service environments. As banking activities increasingly shift from physical branches to digital platforms, customers' evaluation of service quality is no longer limited to interpersonal interactions but extends to their experiences with technological systems, digital interfaces, and online service processes. Consequently, service quality in digital banking reflects customers' overall assessment of how effectively and efficiently digital banking services meet their needs and expectations (Mbama et al., 2018; Parasuraman et al., 1988).

Prior studies consistently report that superior digital service quality enhances customer satisfaction, strengthens competitive positioning, and fosters long-term customer relationships (Gunathilaka & Rupasingha, 2022; Kaur et al., 2021). In contrast to traditional service settings, digital banking service quality incorporates both system-related and service-related attributes, capturing the performance of technological infrastructure as well as the support mechanisms surrounding its use. Although the original SERVQUAL framework was developed for face-to-face service encounters, subsequent research demonstrates that several SERVQUAL dimensions remain applicable in digital contexts when adapted to technology-enabled environments (Mbama et al., 2018; Mwiya et al., 2022).

Building on this body of research, the present study conceptualizes digital banking service quality through four key dimensions: reliability, security, responsiveness, and convenience. These dimensions have been widely applied in e-service quality research and consistently identified as relevant indicators of service performance from the customer's perspective (Aafreen, 2024; Kaur et al., 2021). Focusing on these dimensions allows for a comprehensive assessment of both functional performance and experiential aspects of digital banking services.

Reliability

Reliability in digital banking refers to the extent to which banking systems consistently perform transactions accurately and without technical failures. In digital service environments, reliability is commonly associated with system availability, transaction accuracy, and stable performance under varying usage conditions (Mbama et al., 2018). Given the financial implications of banking activities, reliable system performance is widely regarded as a fundamental requirement for fostering trust and sustaining customer confidence.

Empirical studies consistently identify reliability as a core dimension of digital banking service quality that influences customer trust and satisfaction (Mir et al., 2023; Olowofela et al., 2024). System failures, transaction errors, or service interruptions can undermine customer confidence, potentially leading to dissatisfaction and service discontinuation. Prior research indicates that customers particularly value reliable performance when conducting routine financial transactions through digital platforms, as errors in such contexts may result in financial loss or inconvenience (Kaur et al., 2021). Supporting this view, Gazi et al. (2024) find that reliability contributes positively to customer satisfaction in mobile and internet banking services.

Piha and Avlonitis (2015) further argue that service reliability plays a crucial role in shaping satisfaction and repeat usage, as customers are increasingly sensitive to operational inconsistencies and service breakdowns. However, emerging research suggests that as digital banking systems mature, reliability may increasingly be perceived as a baseline expectation rather than a differentiating attribute. This evolving perspective provides an important context for examining the role of reliability in shaping customer satisfaction in contemporary digital banking environments.

Security

Security is widely acknowledged as one of the most critical dimensions of digital banking service quality, reflecting customers' perceptions of how well their personal and financial information is protected during online transactions. In digital banking contexts, security encompasses data privacy, authentication mechanisms, fraud prevention, and protection against cyber threats (Teoh et al., 2025). Due to the sensitive nature of financial transactions, customers' trust in a bank's security infrastructure plays a central role in shaping their overall service evaluations (Kassim & Mujinga, 2024).

Extensive empirical evidence confirms that perceived security significantly influences trust and satisfaction in digital banking services. Studies consistently show that higher levels of perceived security reduce uncertainty and perceived risk, thereby strengthening customer confidence in online banking platforms (Gunathilaka & Rupasingha, 2022). This relationship has become increasingly salient as digital financial transactions continue to expand, particularly during periods of heightened reliance on online services, such as during the COVID-19 pandemic.

Theoretical models and empirical findings further suggest that strong security measures enhance customer satisfaction by addressing users' concerns regarding information protection and financial safety (Gazi et al., 2024). In addition, research focusing on younger and female user groups indicates that prior digital experience contributes to heightened expectations regarding security standards (Zeffane, 2018). As awareness of cyber risks increases, security remains a salient evaluative criterion that directly shapes customers' perceptions of digital banking service quality.

Responsiveness

Responsiveness in digital banking refers to the ability of service providers to deliver timely assistance, address customer inquiries promptly, and resolve issues effectively through digital channels. Unlike traditional banking environments, responsiveness in digital contexts is often facilitated through automated systems, online support services, chat functions, and real-time system feedback (Mbama et al., 2018).

Prior research identifies responsiveness as an important dimension of e-service quality, positively influencing customer satisfaction and service evaluations (Ayinaddis et al., 2023). Inefficient query handling or delayed responses can lead to frustration and dissatisfaction, even when system functionality is otherwise adequate. Empirical findings from digital banking settings indicate that effective responsiveness strategies enhance user experiences and foster favorable attitudes toward online banking platforms (Mwiya et al., 2022).

However, as digital banking increasingly emphasizes self-service functionality, the role of responsiveness may be evolving. While responsiveness remains essential during service failures or exceptional situations, routine interactions may rely less on direct human support. This suggests that responsiveness may function as a conditional determinant of satisfaction, becoming particularly salient when service disruptions occur.

Convenience

Convenience represents a defining feature of digital banking services, referring to the extent to which customers can access and use banking services without constraints related to time or location. Key aspects of convenience include ease of access, time savings, simplicity of procedures, and reduced reliance on physical bank branches (Keisidou et al., 2013).

The literature consistently identifies convenience as a major advantage of digital banking offerings. Prior studies show that features such as mobile accessibility, simplified transaction processes, and seamless navigation positively influence customers' evaluations of digital banking services (Kaur et al., 2021). Research on internet and mobile banking adoption further demonstrates that perceived convenience strongly affects continued usage behavior and satisfaction (Juwaheer et al., 2012).

Evidence from the Malaysian banking context supports this relationship, indicating that convenience enhances trust and satisfaction among digital banking users (Lim et al., 2023). As digital banking becomes embedded in daily routines, customers increasingly prioritize frictionless experiences, positioning convenience as a central determinant of satisfaction and sustained engagement.

Customer Satisfaction

Customer satisfaction is a foundational concept in marketing and service research, commonly defined as customers' overall evaluation of service experiences based on a comparison between prior expectations and actual performance (Oliver, 2014). In digital banking environments, satisfaction reflects both cognitive evaluations of system performance and emotional responses to service encounters (Saputra et al., 2024).

ECT provides a useful theoretical framework for understanding satisfaction formation in digital banking contexts. According to ECT, satisfaction arises when perceived service performance meets or exceeds users' expectations (Bhattacherjee, 2001). In digital banking, service quality dimensions such as reliability, security, responsiveness, and convenience play critical roles in shaping users' perceptions and expectation confirmation processes (Gunathilaka & Rupasingha, 2022; Mbama et al., 2018). When

digital services perform consistently and align with customer expectations, satisfaction is more likely to occur.

Hypotheses Development

Drawing on service quality theory and ECT, this study proposes a conceptual framework linking digital banking service quality dimensions to customer satisfaction. Prior studies demonstrate that SERVQUAL-based dimensions adapted for digital contexts, namely reliability, security, responsiveness, and convenience, are positively associated with customer satisfaction across various banking settings (Lim et al., 2023).

Reliability and Customer Satisfaction

Reliable digital banking systems reduce uncertainty and enhance confidence in online transactions. Stable system performance and accurate transaction processing contribute to favorable service evaluations and higher satisfaction levels (Gunathilaka & Rupasingha, 2022; Kaur et al., 2021). Empirical evidence from Ethiopia further supports the role of reliability in shaping e-banking satisfaction (Ayinaddis et al., 2023).

H1: Reliability has a positive effect on customer satisfaction with digital banking services.

Security and Customer Satisfaction

Strong security practices mitigate perceived risk and foster trust in digital banking platforms. Prior research consistently shows that higher perceived security enhances service evaluations and customer satisfaction (Gunathilaka & Rupasingha, 2022; Lim et al., 2023).

H2: Security positively affects customer satisfaction in digital banking services.

Responsiveness and Customer Satisfaction

Timely assistance and effective problem resolution contribute to positive digital service experiences. Previous studies report that responsive digital service delivery positively influences perceived service quality and satisfaction (Ayinaddis et al., 2023; Mwiya et al., 2022).

H3: Responsiveness positively affects customer satisfaction.

Convenience and Customer Satisfaction

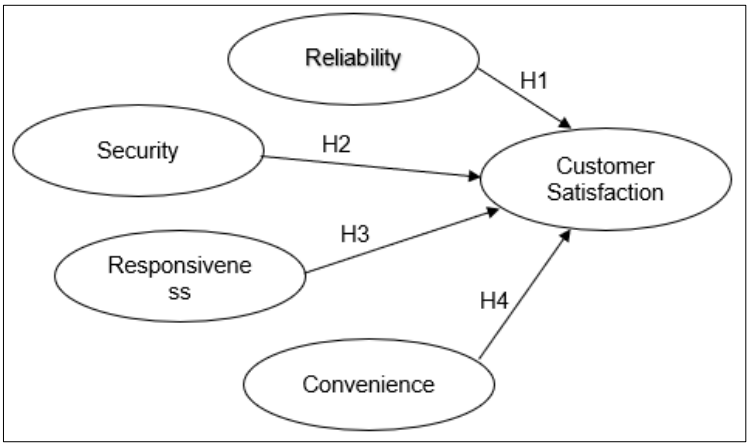
Digital banking convenience enables customers to conduct financial transactions efficiently without time or location constraints. Empirical findings demonstrate that greater perceived convenience leads to more favorable service evaluations and higher satisfaction (Juwaheer et al., 2012; Kaur et al., 2021; Lim et al., 2023).

H4: Convenience has a significant and positive impact on customer satisfaction with digital banking.

Conceptual Framework

Based on the preceding discussion, the conceptual framework illustrates the proposed relationships between digital banking service quality dimensions and customer satisfaction, as presented in Figure 1.

Figure 1. Research Framework



RESEARCH METHOD

Research Design and Data Collection

This study adopts a quantitative research design using a survey approach to examine the determinants of customer satisfaction with digital banking services among young adults. A structured questionnaire was administered online using Google Forms and distributed through social media platforms and instant messaging applications. This approach was selected to efficiently reach digitally active respondents who regularly use online and mobile banking services.

Data collection was conducted over a defined period, resulting in 150 completed and usable responses. All responses were screened for completeness before analysis. The collected data were coded and analyzed using Statistical Package for the Social Sciences (SPSS), which enabled both descriptive and inferential statistical analyses to test the proposed hypotheses.

Sample Characteristics

The target population of this study consisted of young adult users of digital banking services aged between 18 and 30 years. This age group was selected due to its high level of digital literacy and frequent engagement with mobile and online financial platforms. The sampling technique employed was non-probability convenience sampling, which is appropriate for exploratory studies focusing on specific user segments in digital service contexts. While this method limits generalizability, it provides valuable insights into the perceptions and satisfaction mechanisms of digitally native users.

Measurement Instruments

All constructs in this study were measured using a five-point Likert scale, ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”). The questionnaire comprised five main constructs: reliability, security, responsiveness, convenience, and customer satisfaction. Measurement items were adapted from established electronic banking and e-service quality studies, particularly Hammoud et al. (2018), with minor contextual adjustments to ensure relevance to digital banking services. For each construct, composite scores were computed by averaging the corresponding item responses.

Reliability

Reliability was measured using two items that assessed respondents’ perceptions of transaction accuracy and the consistency of digital banking system performance. An example item is: “I am satisfied with the accuracy of transactions conducted through digital banking services.” The reliability construct demonstrated strong internal

consistency, with a Cronbach's alpha value of 0.885, exceeding the recommended threshold of 0.70.

Security
Security was evaluated using two items capturing users' perceptions of data protection, confidentiality, and transaction safety in digital banking services. A sample item is: "Digital banking services provide secure transactions." The security construct exhibited high internal reliability, with a Cronbach's alpha of 0.887.

Responsiveness
Responsiveness was measured through two items assessing the ability of digital banking services to provide timely support and respond efficiently to customer inquiries. An example statement is: "Digital banking services respond promptly to customer requests." The construct showed strong internal consistency, with a Cronbach's alpha coefficient of 0.885.

Convenience
Convenience was assessed using two items related to perceived time savings, ease of use, and speed of service delivery. A representative item is: "Digital banking services enable fast and convenient transactions." The Cronbach's alpha value for this construct was 0.851, indicating good reliability.

Customer Satisfaction
Customer satisfaction was measured using two items reflecting overall satisfaction and users' confidence in their decision to use digital banking services. An example item is: "I believe I made the right decision by using digital banking services." This construct also demonstrated strong reliability, with a Cronbach's alpha of 0.876.

Table 1 presents a summary of the measurement items and reliability coefficients for all constructs.

Table 1. Summary of Questionnaire Measures and Reliability (Cronbach's Alpha) (N = 150)

Construct	No. of Items	Example Item	Cronbach's α
Reliability	5	"I have high confidence in the E-Banking services in the bank"; "E-Banking service is reliable and dependable."	0.885
Security	5	"E-Banking services do not allow others to access my accounts"; "E-Banking service provides high protection for my banking transactions."	0.887
Responsiveness	5	"E-Banking services do not allow others to access my accounts"; "E-Banking service provides high protection for my banking transactions."	0.885
Convenience	5	"E-Banking services do not allow others to access my accounts"; "E-Banking service provides high protection for my banking transactions."	0.851
Customer Satisfaction	5	"I am satisfied with the transaction processing via E-Banking services."; "Overall, E-Banking services is better than my expectations."	0.876

Data Analysis Techniques

Descriptive statistics were first employed to summarize respondent demographics and usage patterns. Pearson correlation analysis was then conducted to examine the relationships between the service quality dimensions and customer satisfaction. Multiple regression analysis was subsequently used to assess the relative influence of reliability, security, responsiveness, and convenience on customer satisfaction and to test the proposed hypotheses.

RESULTS

Table 2. Summary of Respondent's Demography (N=150)

Response	Frequency	Percentage
Gender		
Female	75	50.0
Male	75	50.0
Age		
18-20 years old	53	35.3
21-25 years old	90	60.0
26-30 years old	7	4.7
Occupation		
Student	120	80.0
Unemployed	2	1.3
Working Adult	28	18.7
Types of Digital Banking Service Used		
Alipay	1	0.7
Bank Islam (Islamic Bank)	5	3.3
CIMB Clicks	38	25.3
Hong Leong Connect	16	10.7
iRakyat	2	1.3
Maybank2U	26	17.3
Public Bank PB engage	19	12.7
RHB Now	38	25.3
Touch'n Go eWallet	5	3.3
Frequency of Using Digital Banking Services		
Daily (Almost every day)	45	30.0
Weekly (1-3 times per week)	72	48.0
Monthly (1-3 times per month)	28	18.7
Rarely (Less than once a month)	5	3.3
Features Utilized		
Bill payment	34	22.7
E-wallet top-up	30	20.0
Fund transfer	54	36.0
Investment	12	8.0
Online shopping payment	20	13.3

Table 2 presents the demographic profile of the respondents (N = 150). The gender distribution is evenly split, with 75 males (50.0%) and 75 females (50.0%). Most respondents fall within the 21–25 age group (60.0%), followed by those aged 18–20 years (35.3%), while only a small proportion are aged 26–30 years (4.7%). In terms of occupation, the majority of respondents are students (80.0%), with working adults accounting for 18.7% and unemployed individuals representing 1.3%.

Regarding digital banking services, CIMB Clicks and RHB Now are the most frequently used platforms (25.3% each), followed by Maybank2U (17.3%) and Public Bank PB engage (12.7%), whereas Alipay records the lowest usage rate (0.7%). Most respondents use digital banking services on a regular basis, with 48.0% reporting weekly usage and 30.0% indicating daily usage. In terms of features utilized, fund transfers are the most commonly used function (36.0%), followed by bill payments (22.7%) and e-wallet top-ups (20.0%), while investment-related features are the least utilized (8.0%).

Table 3. Descriptive Statistics, Cronbach's Coefficient Alpha, and Zero-Order Correlations for All Study Variables

Variable		1	2	3	4	5
1	Reliability	0.923				
2	Security	0.866**	0.929			
3	Responsiveness	0.721**	0.802**	0.938		
4	Convenience	0.718**	0.771**	0.870**	0.943	
5	Customer Satisfaction	0.788**	0.823**	0.846**	0.898**	0.959
Number of items		5	5	5	5	5
Mean		3.921	3.955	3.953	4.065	4.047
Standard Deviation		1.001	0.977	0.963	0.903	0.989

Note: N = 150; *p < 0.05, **p < 0.01, ***p < 0.001. The diagonal entries represent Cronbach's Coefficient Alpha.

Table 3 above presents the descriptive statistics, reliability measures, and zero-order correlations for all variables in this study. The descriptive results indicate that respondents generally hold positive perceptions of digital banking service quality. Reliability (M = 3.921, SD = 1.001), Security (M = 3.955, SD = 0.977), Responsiveness (M = 3.953, SD = 0.963), and Convenience (M = 4.065, SD = 0.903) all recorded relatively high mean scores, suggesting that users view digital banking services as dependable, secure, efficient, and easy to use. Customer Satisfaction also showed a high mean score (M = 4.047, SD = 0.989), reflecting overall favorable user experiences. The reliability coefficients (Cronbach's alpha), ranging from 0.923 to 0.959, demonstrate excellent internal consistency across all constructs. The correlation analysis further reveals strong positive relationships between the service quality dimensions and customer satisfaction. Convenience shows the strongest correlation with customer satisfaction (r = 0.898), followed by responsiveness (r = 0.846), security (r = 0.823), and reliability (r = 0.788). Overall, the findings highlight that digital banking features that are secure, responsive, reliable, and convenient are closely associated with higher levels of customer satisfaction.

Table 4. Regression Analysis

Variable		Customer Satisfaction
1	Reliability	0.145
2	Security	0.185*
3	Responsiveness	0.081
4	Convenience	0.592***
R^2		0.867
F value		169.89
Durbin- Waston Statistic		2.232

Note: N = 150; *p < 0.05, **p < 0.01, ***p < 0.001.

Table 4 presents the results of the multiple regression analysis examining the effects of reliability, security, responsiveness, and convenience on customer satisfaction with digital banking services. The model demonstrates strong explanatory power, with an R^2

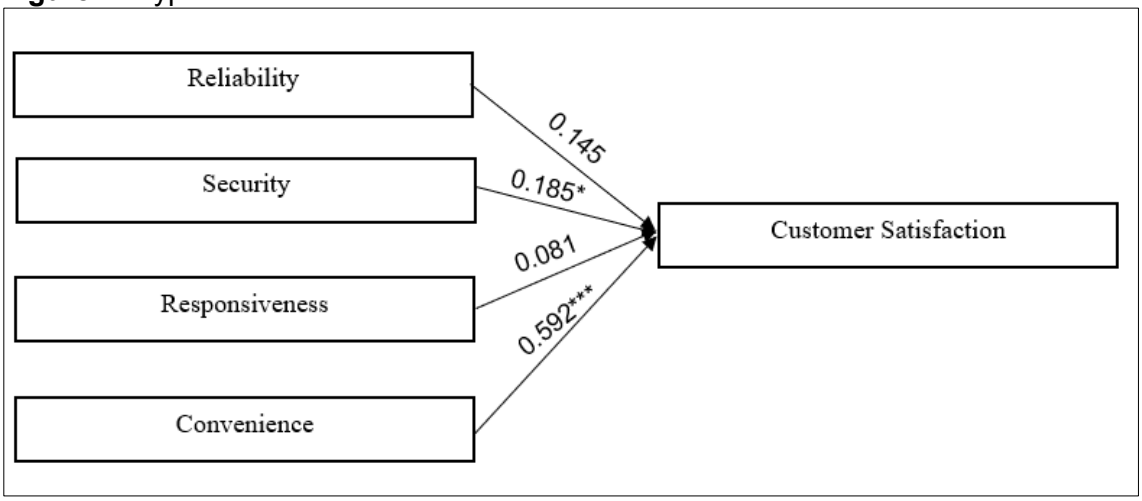
value of 0.867, indicating that 86.7% of the variance in customer satisfaction is explained by the four service quality dimensions. The overall model is statistically significant (F = 169.89), and the Durbin–Watson statistic of 2.232 suggests no serious autocorrelation issues.

The findings reveal that convenience has the strongest and most significant positive effect on customer satisfaction (β = 0.592, p < 0.001), providing strong support for H4. This indicates that ease of use, accessibility, and time efficiency are critical determinants of customer satisfaction in digital banking. Security also shows a positive and statistically significant effect on customer satisfaction (β = 0.185, p < 0.05), supporting H2 and highlighting the importance of safeguarding customer data and transactions.

In contrast, reliability (β = 0.145, p > 0.05) does not exhibit a statistically significant effect on customer satisfaction, leading to the rejection of H1. Similarly, responsiveness shows a positive but non-significant relationship with customer satisfaction (β = 0.081, p > 0.05), resulting in the rejection of H3. These results suggest that while reliability and responsiveness are valued attributes, they do not independently drive customer satisfaction in the presence of stronger factors such as convenience and security.

In summary, H2 and H4 are accepted, whereas H1 and H3 are rejected. The results emphasize that customer satisfaction in digital banking is primarily shaped by convenience and security rather than by reliability or responsiveness alone. The summarized output of the hypothesized model is illustrated in Figure 2.

Figure 2. Hypothesized Model



DISCUSSION

Reliability and Customer Satisfaction (H1)

The empirical results show that reliability does not significantly influence customer satisfaction in the digital banking context, resulting in the rejection of H1. This outcome diverges from several earlier studies that identified reliability as a key determinant of satisfaction, particularly through accurate transactions and consistent system performance (Ayinaddis et al., 2023; Gunathilaka & Rupasingha, 2022; Kaur et al., 2021). Much of the prior literature positions reliability as a central pillar of electronic service quality, assuming that dependable system operations directly translate into favorable customer evaluations.

The differing results observed in this study may reflect a shift in consumer expectations shaped by increasing exposure to digital technologies. As digital banking platforms

become more standardized and technologically advanced, users, especially those with high digital literacy, tend to regard reliable performance as an assumed condition rather than a distinctive service benefit. Melnyk (2024) characterizes reliability as a "hygiene factor," whereby system failures trigger dissatisfaction, but consistent performance does not actively enhance satisfaction. Under such conditions, reliability attracts attention only when disruptions occur, diminishing its role in differentiating service quality during routine interactions.

Accordingly, although reliability remains fundamental to sustaining functional service delivery and avoiding negative evaluations, its ability to independently elevate customer satisfaction appears limited when other dimensions, such as security and convenience, are incorporated into the service experience. This suggests that in digitally mature banking environments, customer satisfaction is increasingly shaped by attributes that enhance perceived value and reduce effort or risk, rather than by operational stability alone.

Security and Customer Satisfaction (H2)
The analysis demonstrates that security exerts a positive and statistically significant influence on customer satisfaction, thereby supporting H2. This outcome underscores the importance of security as a core determinant of user evaluations in digital banking, where financial activities and sensitive personal information are inherently vulnerable to technological and operational risks.

In line with previous research, a strong perception of security helps alleviate customer concerns and fosters trust, which subsequently contributes to higher satisfaction levels (Gunathilaka & Rupasingha, 2022; Lim et al., 2023). Ologun et al. (2025) further note that when users perceive digital banking platforms as secure, they are more inclined to engage confidently in online transactions and to form positive assessments of service quality. Likewise, Egala et al. (2021) highlight that effective security features, including authentication protocols, data encryption, and fraud detection systems, serve as critical safeguards that enhance users' sense of control and confidence during digital interactions.

The findings indicate that security continues to function as a prominent evaluative factor in digital banking, particularly amid increasing cyber risks and growing public awareness of data privacy issues. Unlike reliability, whose influence may diminish as it becomes an expected baseline, security remains impactful because it directly mitigates perceived risk, an enduring concern that strongly shapes consumer judgments and behavioral intentions in digital financial services.

Responsiveness and Customer Satisfaction (H3)
The findings indicate that responsiveness is positively related to customer satisfaction, yet the relationship is not statistically significant, resulting in the rejection of H3. This outcome contrasts with earlier empirical evidence that positioned responsiveness as a key driver of satisfaction in digital service settings (Ayinaddis et al., 2023; Mwiya et al., 2022). Prior studies often emphasize prompt assistance and timely problem resolution as essential components of perceived service quality.

A possible explanation for this inconsistency lies in the evolving nature of digital banking usage. Standard responsiveness features, such as automated notifications, transaction confirmations, and basic customer support, may now be viewed as routine elements of service delivery rather than as value-enhancing attributes. In technology-driven banking platforms, users typically rely on self-service processes, limiting direct interaction with service staff. Consequently, responsiveness tends to attract attention primarily during

atypical circumstances, such as system disruptions or transaction failures, rather than during regular usage.

Despite its lack of statistical significance, responsiveness remains operationally important. Effective and timely support during service breakdowns, disputes, or suspected security breaches plays a vital role in preserving customer confidence and preventing negative evaluations. This suggests that responsiveness functions as a complementary condition that safeguards satisfaction, rather than as a dominant factor shaping satisfaction levels in digitally advanced banking environments.

Convenience and Customer Satisfaction (H4)
Convenience is identified as the most influential factor affecting customer satisfaction, offering clear empirical support for H4. This result is consistent with earlier studies that recognize convenience as a defining strength of digital banking platforms (Juwaheer et al., 2012; Kaur et al., 2021). The prominence of convenience reflects users' preference for services that simplify financial activities and integrate smoothly into their daily routines.

In the context of digital banking, convenience encompasses ease of navigation, minimal procedural steps, and uninterrupted access regardless of time or location. When platforms enable transactions to be completed quickly and effortlessly, users perceive greater functional value in the service. From the perspective of ECT, satisfaction is enhanced when actual system performance meets or exceeds users' anticipations regarding usability and efficiency.

Supporting evidence from the Malaysian banking sector further reinforces this relationship. Lim et al. (2023) demonstrate that convenient digital interfaces not only facilitate usage but also strengthen trust and positive service evaluations. The relatively large effect observed in this study indicates that customers place greater emphasis on seamless experiences than on conventional service quality attributes. As digital banking becomes a routine aspect of everyday life, convenience increasingly serves as a primary determinant of satisfaction and sustained engagement.

Synthesis of Findings and Implications
The results demonstrate that customer satisfaction in digital banking is shaped more strongly by user experience and perceived risk management than by basic operational performance. Security and convenience emerge as the main drivers of satisfaction, indicating that customers place greater value on feeling protected and being able to complete transactions easily and efficiently. In contrast, reliability and responsiveness appear to serve a stabilizing role: their presence helps avoid negative evaluations, yet they do not independently enhance satisfaction when other service attributes are considered.

This pattern suggests a shift in consumer expectations within mature digital banking environments. Fundamental service features such as system stability and standard support are increasingly regarded as non-negotiable requirements rather than differentiating elements. Satisfaction is therefore more likely to be influenced by how well digital banking platforms simplify users' routines and address concerns related to data protection and financial safety.

From a managerial perspective, these findings imply that banks should prioritize investments in secure infrastructures and user-centered interface design to strengthen customer satisfaction. Enhancing cybersecurity measures, clearly communicating safety features, and reducing friction in transaction processes can yield tangible gains in user

evaluations. At the same time, maintaining reliable systems and responsive support remains essential to prevent dissatisfaction, particularly during service disruptions or exceptional cases. A strategic focus that balances foundational service quality with superior digital experiences is likely to be more effective in sustaining customer satisfaction and long-term engagement in competitive digital banking markets.

CONCLUSION

The study examined how young Malaysian adults evaluate digital banking services by analyzing the effects of reliability, security, responsiveness, and convenience on customer satisfaction. Descriptive results indicate generally favorable perceptions across all service quality dimensions, suggesting that digital banking has become an established and regularly used financial channel among this demographic. Correlation analysis further shows that all dimensions are positively associated with satisfaction, confirming their relevance within the service quality framework.

However, the regression results reveal a more differentiated pattern. Convenience emerges as the most influential determinant of customer satisfaction, followed by security, while reliability and responsiveness do not demonstrate significant direct effects when assessed alongside other variables. These findings indicate that young users place greater value on ease of use and perceived safety than on traditional operational attributes. Reliability and responsiveness appear to function as baseline expectations, essential for preventing dissatisfaction but insufficient to enhance satisfaction in digitally mature service environments.

This shift reflects changing consumer priorities among digital-native users, who increasingly evaluate banking services based on how seamlessly they integrate into daily routines and how effectively they mitigate perceived financial and data-related risks. From a managerial standpoint, digital banking providers should prioritize user-centered design and visible security mechanisms to sustain satisfaction and engagement. At the same time, maintaining stable system performance and responsive support remains necessary to uphold minimum service standards.

The study contributes to the digital banking literature by demonstrating that customer satisfaction in emerging markets is increasingly shaped by experiential and risk-related factors rather than by core service reliability alone, offering insights for both academic research and strategic service development.

LIMITATION

Although this study offers meaningful insights into customer satisfaction with digital banking services, several limitations should be considered when interpreting the findings. First, the analysis is based on a sample of 150 respondents from Malaysia, the majority of whom are young adults aged 18–30 and students. While this focus is consistent with the study's objective of examining young digital banking users, it restricts the broader applicability of the results to other age groups, working professionals, and users in different regional or regulatory contexts. Future investigations could improve external validity by employing larger and more heterogeneous samples, as well as conducting comparative studies across multiple countries.

Second, the research adopts a cross-sectional design and relies exclusively on self-reported survey responses. This approach may introduce response bias and limits the ability to observe changes in customer satisfaction over time. Given the rapid pace of digital banking innovation, longitudinal research designs that combine subjective

perceptions with objective usage data would provide a more dynamic understanding of how satisfaction evolves as technologies and user expectations change.

Finally, the study concentrates on four core dimensions of digital banking service quality: reliability, security, responsiveness, and convenience, to maintain model clarity and analytical focus. However, other relevant factors, such as user experience (UX) design, customer support effectiveness, and perceived trust, were not included. Incorporating these additional variables in future research could yield a more comprehensive framework and enhance understanding of customer satisfaction in increasingly complex digital banking environments.

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DECLARATION OF CONFLICTING INTERESTS
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