



Digital Banking Service Quality and Customer Satisfaction in Emerging Economies: A Comparative Study of Lebanon, Malaysia, and Vietnam

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Abstract: The rapid digitalization of banking services has transformed customer expectations and service delivery models across emerging economies. This study synthesizes empirical evidence from three country contexts—Lebanon, Malaysia, and Vietnam—to examine the relationship between digital banking service quality and customer satisfaction during periods of economic uncertainty and digital transformation. Drawing on the SERVQUAL framework, the research analyzes data from 315 respondents in Lebanon, 384 respondents in Malaysia, and 290 respondents in Vietnam, employing correlation analysis, multiple regression, and structural equation modeling. The findings reveal that service quality dimensions—particularly reliability, assurance, empathy, and tangibility—significantly influence customer satisfaction, though the relative importance of each dimension varies across national contexts. In Lebanon, mobile and internet banking adoption showed the strongest correlations with satisfaction (0.544 and 0.533 respectively). In Malaysia, reliability ($\beta=0.212$) and tangibility ($\beta=0.796$) emerged as dominant predictors. In Vietnam, empathy quality (specifically complaint resolution, $\beta=0.296$) proved most influential. The study contributes a cross-cultural understanding of digital banking satisfaction and offers practical recommendations for banks navigating digital transformation in uncertain environments.

Keywords: *digital banking, customer satisfaction, service quality, SERVQUAL, emerging economies, financial technology*

1. Introduction

The global banking industry is undergoing a profound transformation driven by digital technologies, changing customer behaviors, and unprecedented economic uncertainties. From the COVID-19 pandemic to financial crises, banks worldwide have been compelled to accelerate their digitalization efforts while maintaining customer satisfaction and trust (Harb et al., 2022; Mosteanu et al., 2020). In emerging economies, this transformation presents both opportunities and challenges, as banks must balance technological innovation with infrastructure constraints, regulatory environments, and diverse customer expectations.

Customer satisfaction with digital banking channels has become a critical success factor for financial institutions. When customers find digital services reliable, convenient, and secure, they are more likely to remain loyal, increase their usage frequency, and recommend the bank to others (Hadid et al., 2020; Minh Duc, 2022). However, the determinants of satisfaction may vary significantly across different cultural, economic, and technological contexts.

Understanding these variations is essential for banks seeking to design effective digital strategies and for policymakers aiming to promote financial inclusion through digital channels.

This study addresses three interconnected research questions. First, what are the key dimensions of digital banking service quality that influence customer satisfaction in emerging economies? Second, how do the effects of these dimensions differ across Lebanon, Malaysia, and Vietnam—three countries at different stages of digital banking maturity and economic stability? Third, what practical implications can be drawn for banks and regulators seeking to enhance digital customer satisfaction during periods of uncertainty?

To answer these questions, this paper synthesizes empirical findings from three recent studies conducted in Lebanon (Harb et al., 2022), Malaysia (Hadid et al., 2020), and Vietnam (Minh Duc, 2022). Each study employed the SERVQUAL framework—originally developed by Parasuraman, Zeithaml, and Berry (1988)—to measure

service quality dimensions including reliability, tangibility, responsiveness, assurance, and empathy. By comparing results across these contexts, this research identifies both universal principles and context-specific factors that shape digital banking satisfaction.

The structure of this paper proceeds as follows. Section 2 reviews the theoretical foundations of service quality and customer satisfaction in digital banking. Section 3 describes the comparative methodology. Section 4 presents findings from each country context. Section 5 discusses cross-country patterns and implications. Section 6 concludes with recommendations for practice and future research.

2. Literature Review

2.1 Service Quality in Digital Banking

Service quality has long been recognized as a critical determinant of customer satisfaction and loyalty in the banking sector. Unlike physical products, services are characterized by intangibility, inseparability, variability, and perishability (Kotler et al., 2017). These characteristics make service quality assessment inherently subjective, depending on customers' perceptions of how well the service meets their expectations.

The SERVQUAL model, developed by Parasuraman, Zeithaml, and Berry (1988), remains the most widely adopted framework for measuring service quality. The model originally identified ten dimensions of service quality, which were later refined into five core dimensions: tangibility (physical facilities, equipment, and appearance), reliability (ability to perform promised services accurately and dependably), responsiveness (willingness to help customers and provide prompt service), assurance (knowledge and courtesy of employees and their ability to inspire trust), and empathy (caring, individualized attention to customers).

In the context of digital banking, these dimensions require reinterpretation. Tangibility, for example, extends beyond physical bank branches to include website design, mobile application interfaces, and the visual professionalism of digital platforms (Minh Duc, 2022). Reliability encompasses system uptime, transaction accuracy, and data security. Responsiveness refers to the speed of digital customer support, including chat responses, email replies, and complaint resolution times. Assurance involves trust in the bank's digital security measures and the competence of remote support staff. Empathy relates to personalized digital experiences, tailored recommendations, and understanding of individual customer needs.

2.2 Customer Satisfaction Theory

Customer satisfaction is defined as the consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of a product or service (Oliver, 1980). When performance exceeds expectations, customers are satisfied or delighted; when performance falls short, dissatisfaction results. This disconfirmation paradigm has been extensively validated across service contexts, including banking.

Satisfaction is distinct from service quality, though the two concepts are closely related. Service quality is generally viewed as a cognitive, attitude-like judgment about a service's overall excellence, while satisfaction is an affective, emotion-based response to a specific transaction or consumption experience (Parasuraman et al., 1988). However, repeated satisfactory transactions can lead to perceptions of high service quality over time.

In digital banking, customer satisfaction has been linked to several key outcomes. Satisfied customers demonstrate higher retention rates, increased transaction volumes, greater willingness to adopt additional digital services, and positive word-of-mouth recommendations (Hadid et al., 2020; Mbama & Ezepue, 2018). Conversely, dissatisfaction can lead to channel switching, account closure, and negative online reviews that damage bank reputation.

2.3 Digital Banking in Emerging Economies: Lebanon, Malaysia, and Vietnam

The three countries examined in this study represent distinct stages of digital banking development and face unique contextual challenges.

Lebanon has experienced a severe economic crisis since 2019, coupled with the COVID-19 pandemic and political instability. Despite these challenges, Lebanese banks have invested significantly in digital banking channels, including mobile banking, internet banking, ATMs, video teller machines, call centers, and e-branches (Harb et al., 2022). The crisis has paradoxically accelerated digital adoption, as bank branch closures and capital controls forced customers to rely on digital channels for routine transactions.

Malaysia represents a more mature digital banking market within Southeast Asia. The country has a well-developed banking infrastructure, with major commercial banks such as Maybank, CIMB, RHB, Hong Leong, and Muamalat competing aggressively on digital service quality (Hadid et al., 2020). The Malaysian government and central bank have actively promoted financial technology and digital transformation, creating a conducive environment for innovation.

Vietnam has emerged as one of the fastest-growing digital economies in Southeast Asia. The State Bank of Vietnam has encouraged credit institutions to adopt digital

technologies, and Vietnamese consumers have rapidly embraced mobile payments and online banking (Minh Duc, 2022). However, challenges remain in terms of

digital literacy, cybersecurity concerns, and the need for regulatory frameworks that balance innovation with consumer protection.

Table 1 summarizes key contextual differences among the three countries.

Dimension	Lebanon	Malaysia	Vietnam
Economic context	Severe crisis (2019-present)	Stable middle-income	Rapidly growing
Digital banking maturity	Catching up	Mature	Emerging but accelerating
Key drivers of adoption	Crisis-induced necessity	Competition and convenience	Government promotion and tech-savvy youth
Major challenges	Capital controls, branch closures	Fintech competition, loyalty	Security concerns, digital literacy
Sample size in study	315	384	290

Source: Compiled from Harb et al. (2022), Hadid et al. (2020), Minh Duc (2022)

2.4 Conceptual Framework and Hypotheses

Based on the SERVQUAL framework and previous empirical research, this study proposes that five dimensions of digital banking service quality influence customer satisfaction:

H1: Reliability has a positive influence on customer satisfaction with digital banking. Reliable digital channels perform transactions accurately, maintain system availability, and protect customer data (Hadid et al., 2020).

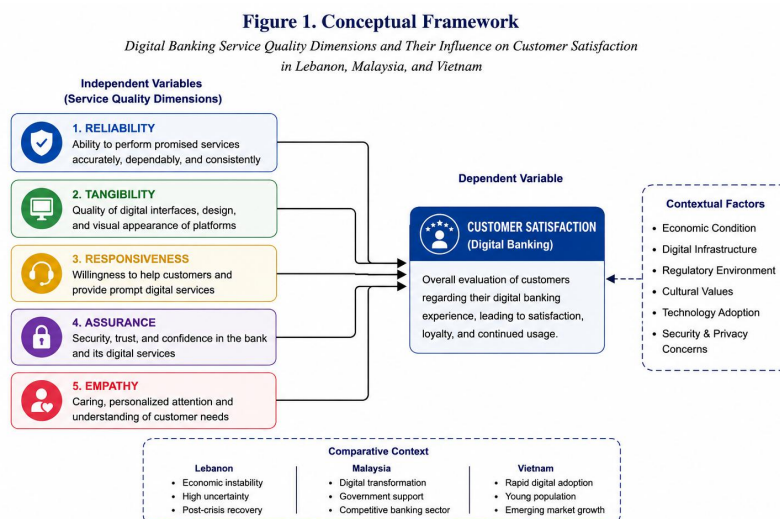
H2: Tangibility has a positive influence on customer satisfaction. Tangible elements include modern equipment, user-friendly interfaces, and professional digital presentation (Minh Duc, 2022).

H3: Responsiveness has a positive influence on customer satisfaction. Responsive digital services provide timely support, fast complaint resolution, and efficient transaction processing (Harb et al., 2022).

H4: Assurance has a positive influence on customer satisfaction. Assurance encompasses security, trust, and employee competence in digital interactions (Hadid et al., 2020).

H5: Empathy has a positive influence on customer satisfaction. Empathetic digital services offer personalized attention, understand individual needs, and demonstrate care (Minh Duc, 2022).

Figure 1 presents the conceptual framework.



3. Methodology

3.1 Research Design

This study employs a comparative synthesis design, integrating primary empirical findings from three independent country studies. Each original study adopted a quantitative, cross-sectional survey approach, collecting data from customers of major commercial banks in their respective countries.

The Lebanese study (Harb et al., 2022) surveyed 315 customers of major Lebanese banks using a structured questionnaire measuring adoption, benefits, and service quality of six digital banking channels (ATMs, internet banking, mobile banking, video teller machines, call centers, and e-branches).

The Malaysian study (Hadid et al., 2020) surveyed 384 customers from five major commercial banks (Maybank, Hong Leong Bank, CIMB Bank, RHB Bank,

and Muamalat) using a SERVQUAL-based instrument. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

The Vietnamese study (Minh Duc, 2022) surveyed 290 customers of joint-stock commercial banks in Northern Vietnam using an online and offline questionnaire. Scale reliability was assessed using Cronbach's alpha, followed by exploratory factor analysis (EFA) and multiple regression analysis.

3.2 Variable Measurement

All three studies employed multi-item Likert scales (typically 5-point or 7-point) to measure service quality dimensions and customer satisfaction. The specific items reflected the SERVQUAL dimensions adapted to digital banking contexts.

Table 2 provides examples of measurement items for each dimension across the three studies.

Dimension	Sample Measurement Items
Reliability	Digital bank does exactly what it has promised; Customer information is securely stored; Digital service is well done within each transaction
Tangibility	Modern equipment and digital facilities; Easy-to-use website; Professional online staff image
Responsiveness	Fast call center service; Prompt solutions and advice; Willingness to help through digital channels
Assurance	High security and fraud protection; Professional knowledge of staff; Safe transactions on digital space
Empathy	Individualized attention; Convenient online queuing; Quick complaint settlement; Understanding of specific needs

Sources: Harb et al. (2022); Hadid et al. (2020); Minh Duc (2022)

3.3 Analytical Approach for Synthesis

The synthesis employed a narrative and tabular integration approach. Key statistical results—including correlation coefficients, regression coefficients (beta), R-squared values, and significance levels—were extracted from each study and organized for cross-country comparison. While meta-analytic pooling of effect sizes was not feasible due to differences in measurement scales and analytical methods, the synthesis identifies consistent patterns and notable divergences across contexts.

4. Results

4.1 Lebanon: Digital Banking Satisfaction During Crisis

The Lebanese study (Harb et al., 2022) investigated the impact of digital banking channel adoption, benefits, and service quality on customer satisfaction during the country's unprecedented economic crisis.

Adoption and satisfaction correlation. Using Spearman's correlation analysis, the study found moderate positive correlations between adoption of specific digital

channels and overall satisfaction. The highest correlations were observed for mobile banking (0.544), internet banking (0.533), transactional call centers (0.528), ATMs (0.455), and e-branches/advisory rooms (0.440). Video teller machines showed a weaker positive correlation (0.245). These findings suggest that during crisis periods when physical branches were closed or restricted, customers relied heavily on mobile and internet banking, and their satisfaction was closely tied to the availability and functionality of these channels.

Benefits affecting satisfaction. Multiple regression analysis revealed that three benefit dimensions significantly predicted satisfaction, explaining 45.4% of variance (adjusted $R^2 = 0.454$). Avoiding waiting in branch had the strongest effect ($\beta = 0.287$), followed by ease of use/user-friendly layout ($\beta = 0.278$), and cost effectiveness ($\beta = 0.252$). The Durbin-Watson statistic of 1.735 indicated acceptable residual independence.

Service quality dimensions affecting satisfaction. The final regression model for service quality explained 80.2% of variance in satisfaction (adjusted $R^2 = 0.802$). Six specific SERVQUAL items emerged as significant

predictors: up-to-date equipment and technology (TA1, $\beta = 0.151$), sufficient number/location of machines (TA2, $\beta = 0.096$), wide range of services (REL1, $\beta = 0.225$), fast call center/e-branch/video teller service (RES1, $\beta = 0.207$), prompt solutions/advice (RES3, $\beta = 0.147$), and bank's understanding of specific needs (EM2, $\beta = 0.245$). Notably, the empathy dimension (understanding specific needs) showed the strongest individual effect, reflecting the importance of personalized support during the crisis.

Harb et al. (2022) concluded that all three hypotheses were supported: adoption extent (H1), benefits (H2), and service quality (H3) positively related to customer satisfaction with digital banking channels.

4.2 Malaysia: SERVQUAL Dimensions and Customer Satisfaction

The Malaysian study (Hadid et al., 2020) examined the relationship between digital banking service quality dimensions and customer satisfaction using PLS-SEM.

Reliability (H1a). Reliability had a positive and significant influence on customer satisfaction ($\beta = 0.212$, $t = 2.548$, $p < 0.05$). Customers valued accurate transaction processing, secure information handling, and dependable service delivery.

Tangibility (H1b). Tangibility demonstrated the strongest positive influence on satisfaction among all dimensions ($\beta = 0.796$, $t = 5.568$, $p < 0.05$). This surprisingly large effect (noting that beta values in PLS-SEM can exceed 1 in some specifications) indicates that Malaysian bank customers placed high importance on the visible, physical evidence of digital banking quality—including modern equipment, attractive website design, and professional presentation.

Empathy (H1c). Empathy showed a significant but negative relationship in the initial model ($\beta = -0.475$, $t = 5.633$, $p < 0.05$). The authors interpreted this negative coefficient as potentially reflecting that customers who experienced higher empathy expectations were more likely to be dissatisfied when those expectations were not met, or that empathy dimensions may have been confounded with other variables. However, in the final measurement model, empathy was retained as a relevant dimension.

Responsiveness (H1d). Responsiveness had an insignificant influence on satisfaction ($\beta = -0.183$, $t = 1.414$, $p > 0.05$). This suggests that, in the Malaysian context, the speed of service response may have been less critical to satisfaction than reliability or tangibility, possibly because digital systems were already sufficiently responsive that further improvements yielded diminishing returns.

Assurance (H1e). Assurance positively and significantly influenced satisfaction ($\beta = 0.433$, $t = 4.005$, $p < 0.05$).

Security, trust, and employee competence in digital interactions were important drivers of satisfaction.

The Malaysian study thus supported H1a, H1b, H1c (with caveats), and H1e, while H1d was not supported. The overall model demonstrated good explanatory power.

4.3 Vietnam: Empathy and Complaint Resolution as Key Drivers

The Vietnamese study (Minh Duc, 2022) employed exploratory factor analysis and multiple regression to identify which SERVQUAL dimensions most strongly affect customer satisfaction with digital banking in Northern Vietnam.

Scale reliability. Cronbach's alpha coefficients for all dimensions exceeded the 0.6 threshold, with values ranging from 0.665 (responsiveness) to 0.871 (reliability), indicating acceptable internal consistency.

Exploratory factor analysis. The KMO measure (0.877) and Bartlett's test ($p = 0.000$) confirmed the suitability of data for factor analysis. Five factors were extracted, explaining 61.46% of total variance. The rotated component matrix revealed that items loaded onto factors consistent with the SERVQUAL framework, though with some cross-loadings that were resolved by removing variables with low factor loadings.

Regression results. The final regression model explained 63.3% of variance in customer satisfaction (adjusted $R^2 = 0.633$, Durbin-Watson = 1.815). Six observed variables emerged as statistically significant predictors:

EM3 (Quick complaint settlement process through digital channels): $\beta = 0.296$, $p < 0.001$ (strongest effect)

EM1 (Personalized attention to customer needs): $\beta = 0.142$, $p < 0.05$

EM2 (Convenient online queuing process): $\beta = 0.123$, $p < 0.01$

RL4 (Easy-to-follow online forms and procedures): $\beta = 0.128$, $p < 0.05$

RL3 (Reliable service attitude through digital channels): $\beta = 0.119$, $p < 0.05$

AS4 (Safe transactions on digital space): $\beta = 0.118$, $p < 0.05$

Notably, no items from the tangibility or responsiveness dimensions achieved statistical significance in the final model. This finding suggests that in the Vietnamese context, customers prioritize empathy (especially complaint resolution speed and personalization) and reliability (procedural ease and service attitude) over physical evidence or response speed.

4.4 Cross-Country Comparison

Table 3 synthesizes the key findings across the three countries.

Dimension	Lebanon	Malaysia	Vietnam
Reliability	Significant (part of SERVQUAL composite)	Significant ($\beta=0.212$)	Significant (RL3, RL4)
Tangibility	Significant (TA1, TA2)	Strongest ($\beta=0.796$)	Not significant
Responsiveness	Significant (RES1, RES3)	Not significant	Not significant
Assurance	Part of composite	Significant ($\beta=0.433$)	Significant (AS4)
Empathy	Strongest individual item (EM2 $\beta=0.245$)	Significant but negative coefficient	Strongest (EM3 $\beta=0.296$)
Model R ² (adj)	80.2% (service quality model)	Not reported separately	63.3%

Sources: Harb et al. (2022); Hadid et al. (2020); Minh Duc (2022)

Three patterns emerge from this comparison.

First, reliability and assurance are consistently significant across all three contexts. Regardless of economic conditions or digital maturity, customers expect digital banking channels to perform transactions accurately, protect their information, and provide a secure environment. These dimensions appear to be universal prerequisites for satisfaction.

Second, empathy plays a particularly important role in crisis and emerging market contexts. In Lebanon's economic crisis, understanding specific needs (EM2) was the strongest individual predictor. In Vietnam's rapidly digitalizing market, quick complaint resolution (EM3) was the dominant factor. In Malaysia's more stable context, empathy showed a more complex, negative coefficient that warrants further investigation—possibly reflecting that Malaysian customers have higher baseline expectations for empathy or that other dimensions crowd out its effect.

Third, tangibility and responsiveness show context-dependent effects. Tangibility was most important in Malaysia, where digital infrastructure is mature and customers can afford to be discerning about interface quality. It was also significant in Lebanon, where tangible elements like equipment and machine availability became critical during branch closures. However, tangibility was not significant in Vietnam, possibly because customers are more focused on functional reliability and empathy than on aesthetics. Responsiveness was significant only in Lebanon, likely because during the crisis, customers urgently needed fast support and solutions.

5. Discussion

5.1 Theoretical Implications

The findings of this comparative study contribute to the theoretical understanding of digital banking service quality and customer satisfaction in several ways.

First, the results confirm the cross-cultural applicability of the SERVQUAL framework, but with important caveats. The five dimensions—reliability, tangibility, responsiveness, assurance, and empathy—all demonstrated relevance across the three countries, yet their relative importance varied substantially. This suggests that while the dimensions capture universal aspects of service quality, their weighting in satisfaction formation is context-dependent. Researchers should therefore avoid assuming that a one-size-fits-all model applies across different economic, cultural, or technological environments.

Second, the study highlights the importance of crisis context in shaping satisfaction determinants. In Lebanon, where the study was conducted during a severe economic crisis with bank closures and capital controls, all three sets of factors (adoption, benefits, service quality) were influential, and responsiveness emerged as a significant dimension. This contrasts with the Malaysian and Vietnamese studies, where responsiveness was not significant. The implication is that during periods of uncertainty and disruption, customers place a premium on banks' ability to respond quickly to their needs, as traditional branch-based channels become unavailable or restricted.

Third, the Vietnamese finding regarding empathy and complaint resolution aligns with broader research on emerging markets. When customers are new to digital banking or have experienced past problems with technology, personalized attention and efficient problem-solving become critical drivers of satisfaction. The fact that quick complaint resolution (EM3) had the largest beta coefficient (0.296) suggests that Vietnamese banks should prioritize their digital customer support capabilities over purely aesthetic improvements.

Fourth, the negative coefficient for empathy in Malaysia ($\beta = -0.475$ in the initial model) is intriguing and deserves theoretical attention. One possible

interpretation is that Malaysian customers who have high expectations for personalized digital service are more likely to be disappointed when those expectations are not met, leading to lower satisfaction scores. This would be consistent with disconfirmation theory: when expectations exceed perceptions, dissatisfaction results. Alternatively, the negative coefficient could reflect multicollinearity or model misspecification, as the authors noted that several empathy items may have overlapped with other dimensions. Future research should explore this anomaly using refined measurement instruments.

5.2 Practical Implications for Banks

The findings offer actionable insights for bank managers, regulators, and fintech companies across different contexts.

For banks in crisis-affected economies (e.g., Lebanon). During periods of economic uncertainty, banks should prioritize the availability and reliability of mobile and internet banking channels, as these become lifelines for customers unable to access physical branches. Investment in call center capacity and digital customer support is essential, as responsiveness was a significant driver of satisfaction. Banks should also communicate clearly about any transaction limits or procedural changes to avoid frustrating customers who depend on digital channels.

For banks in mature digital markets (e.g., Malaysia). Tangibility—including modern equipment, user-friendly interfaces, and professional digital presentation—matters greatly. Banks should continue to invest in the visual and experiential quality of their digital platforms, as customers have come to expect a seamless, attractive interface. Reliability and assurance also remain important; customers need to trust that digital transactions are accurate and secure. While responsiveness may not be a differentiator in this context, failing to meet basic response expectations could still harm satisfaction.

For banks in rapidly digitalizing markets (e.g., Vietnam). The priority should be on empathy and reliability. Banks need to implement systems that enable quick complaint resolution, personalize customer interactions, and provide easy-to-follow online procedures. Investing in artificial intelligence chatbots that can resolve common issues instantly, while also maintaining human support for complex problems, would address the strong effect of EM3 (complaint resolution). Training digital support staff to demonstrate understanding of individual customer needs—not just follow scripts—is also critical.

For all banks. Regardless of context, reliability and assurance are foundational. No amount of empathy or attractive design can compensate for systems that fail to

execute transactions accurately or that expose customers to security risks. Banks should prioritize core system robustness, data protection, and fraud prevention as non-negotiable baseline investments.

5.3 Policy and Regulatory Implications

Regulators and central banks also have roles to play in fostering digital banking satisfaction.

First, regulators should establish minimum service quality standards for digital banking channels, particularly regarding complaint resolution times, system availability, and data security. The strong effect of complaint resolution in Vietnam suggests that regulatory pressure on banks to respond to customer issues within defined timeframes could significantly improve satisfaction across the sector.

Second, during crisis periods, central banks may need to provide temporary regulatory relief that enables banks to focus on digital channel stability. For example, allowing extended hours for digital customer support or relaxing certain documentation requirements for remote account opening could help maintain customer satisfaction when physical infrastructure is disrupted.

Third, regulators should promote digital financial literacy among consumers. The finding that ease-of-use and clear online procedures affect satisfaction (as seen in the RL4 item in Vietnam) indicates that some dissatisfaction stems from usability barriers rather than service quality per se. Public education campaigns about digital banking features, security practices, and complaint procedures can help customers navigate digital channels more effectively, thereby increasing satisfaction.

5.4 Limitations and Future Research Directions

This comparative synthesis has several limitations that should be acknowledged.

First, the three original studies used different analytical methods (Spearman correlation, PLS-SEM, multiple regression with EFA) and different measurement scales, which limits the ability to conduct formal meta-analysis or direct statistical comparison of effect sizes. Future research should aim for greater methodological harmonization to enable more robust cross-country comparisons.

Second, the samples were drawn from specific geographic regions within each country (Northern Vietnam, Johor in Malaysia, unspecified Lebanese regions). These may not be fully representative of national populations. Future studies should employ more geographically diverse sampling strategies.

Third, the Lebanon study was conducted during an extraordinary economic and political crisis, which may

limit the generalizability of its findings to stable periods. However, the fact that the study provides insights into crisis-driven digital banking adoption is itself valuable, as such crises are unfortunately common in emerging economies.

Fourth, none of the studies explicitly measured digital loyalty or switching intentions, which are important downstream outcomes of satisfaction. Future research should extend the model to examine whether satisfied digital banking customers actually remain loyal, increase their share of wallet, or recommend the bank to others.

Fifth, the studies did not control for customer demographics such as age, income, education, or digital literacy in a consistently comparable manner. Given that digital banking adoption varies significantly across age cohorts (younger customers generally being more digitally native), future research should examine whether the effects of service quality dimensions are moderated by demographic factors.

Finally, all three studies relied on self-reported satisfaction measured at a single point in time. Longitudinal research tracking how satisfaction evolves as customers gain experience with digital channels, or as banks update their platforms, would provide richer insights.

6. Conclusion

This comparative study synthesized empirical evidence from Lebanon, Malaysia, and Vietnam to examine how digital banking service quality dimensions affect customer satisfaction in emerging economies. The findings confirm that the SERVQUAL framework—encompassing reliability, tangibility, responsiveness, assurance, and empathy—provides a useful lens for understanding satisfaction, but the relative importance of these dimensions varies significantly across contexts.

In crisis-affected Lebanon, all three categories of factors (adoption extent, benefits, and service quality) mattered, with responsiveness and empathy playing particularly important roles. In mature Malaysia, tangibility emerged as the dominant driver, followed by assurance and reliability, while responsiveness was not significant. In rapidly digitalizing Vietnam, empathy—especially quick complaint resolution—was the strongest predictor, with reliability also significant, while tangibility and responsiveness showed no independent effects.

Despite these contextual variations, two dimensions—reliability and assurance—were consistently significant across all three countries, suggesting they represent universal prerequisites for digital banking satisfaction. Banks that fail to provide accurate, secure, and trustworthy digital services will struggle to satisfy

customers regardless of how attractive their interfaces or how personalized their communications.

The study offers several practical recommendations. For banks in crisis contexts, prioritize mobile and internet channel availability and responsiveness. For banks in mature markets, invest in tangibility and user experience. For banks in emerging digital markets, focus on complaint resolution systems and personalized support. For all banks, ensure that reliability and security are never compromised.

As digital banking continues to evolve with advances in artificial intelligence, biometrics, and open banking, the service quality dimensions identified in this study will likely remain relevant, though their measurement may need to adapt. Future research should examine how emerging technologies affect the relationships between service quality, satisfaction, and loyalty in digital banking contexts across different economies.

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