

ĐO LƯỜNG SỰ HÀI LÒNG CỦA KHÁCH HÀNG VỀ DỊCH VỤ NGÂN HÀNG SỐ TẠI NGÂN HÀNG THƯƠNG MẠI CỔ PHẦN QUỐC TẾ VIỆT NAM CHI NHÁNH ĐỒNG NAI

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THÔNG TIN BÀI BÁO

Ngày nhận: 18/10/2025
Ngày hoàn thiện: 20/03/2026
Ngày chấp nhận: 25/04/2026
Ngày đăng: 26/09/2026

TỪ KHÓA

Sự hài lòng;
giá trị cảm nhận;
Tính dễ dàng sử dụng;
Cá nhân hóa dịch vụ.

TÓM TẮT

Nghiên cứu này nhằm đo lường mức độ hài lòng của khách hàng và xác định các yếu tố ảnh hưởng đến sự hài lòng đối với dịch vụ ngân hàng số tại Ngân hàng TMCP Quốc tế Việt Nam chi nhánh Đồng Nai. Trên cơ sở tổng hợp lý thuyết và các nghiên cứu trước, tác giả xây dựng mô hình gồm sáu yếu tố. Nghiên cứu được thực hiện bằng phương pháp hỗn hợp: định tính qua thảo luận với bảy cán bộ quản lý để hiệu chỉnh thang đo; định lượng qua khảo sát 500 khách hàng cá nhân, thu được 487 phiếu hợp lệ. Dữ liệu được xử lý bằng các công cụ thống kê như Cronbach's Alpha, EFA và hồi quy tuyến tính bội. Kết quả cho thấy cả sáu yếu tố đều tác động tích cực đến sự hài lòng, trong đó giá trị cảm nhận và tính dễ dàng sử dụng có ảnh hưởng mạnh nhất. Dựa trên kết quả này, tác giả đề xuất các hàm ý chính sách nhằm nâng cao giá trị cảm nhận, tăng tính thuận tiện, cải thiện khả năng phản hồi, duy trì chất lượng dịch vụ, củng cố bảo mật và cá nhân hóa trải nghiệm khách hàng. Nghiên cứu đóng góp cả về lý luận và thực tiễn, cung cấp bộ thang đo tin cậy cho lĩnh vực ngân hàng số trong tương lai.

MEASURING CUSTOMER SATISFACTION AND IDENTIFYING ACTORS INFLUENCING SATISFACTION WITH DIGITAL BANKING SERVICES AT THE VIETNAM INTERNATIONAL COMMERCIAL JOINT STOCK BANK AT DONG NAI BRANCH

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ARTICLE INFO

Received: Oct 18th, 2025
Revised: Mar 20th, 2026
Accepted: Apr 25th, 2026
Published: Sep 26th, 2026

KEYWORDS

Satisfaction;
Perceived value;
Ease of use;
Service personalization.

ABSTRACT

This study aims to measure customer satisfaction and identify factors influencing satisfaction with digital banking services at the Vietnam International Commercial Joint Stock Bank at Dong Nai Branch. Based on theoretical foundations and previous studies, the author developed a research model comprising six factors: service quality, responsiveness, perceived value, service personalization, transaction security & safety, and ease of use. A mixed-methods approach was employed: a qualitative phase of discussions with seven bank managers to refine measurement scales, followed by a quantitative survey of 500 individual customers (487 valid responses). Data were analyzed using statistical tools, including Cronbach's Alpha, Exploratory Factor Analysis (EFA), and multiple linear regression. Findings indicate that all six factors positively affect customer satisfaction, with perceived value and ease of use exerting the most decisive influence. Based on these results, the article proposes managerial implications to enhance perceived value, improve usability, increase responsiveness, maintain service quality, strengthen security, and personalize customer experiences. The study contributes both theoretically and practically by providing a reliable measurement framework applicable to the digital banking sector. It also suggests future research directions that involve broader samples, advanced analytical models, and the inclusion of new variables to enrich understanding of customer satisfaction in digital banking.

Doi: <https://doi.org/10.61591/jslhu.28.970>

Available online at: <https://lhj.vn>

1. INTRODUCTION

In recent years, the rapid development of information technology and the digital transformation of the financial sector have revolutionized the global banking industry [1]. The emergence of digital banking has reshaped traditional service models, enabling customers to conduct most financial transactions online and through mobile platforms without the need to visit physical branches [2]. In Vietnam, the digitalization of banking services has become an essential strategic direction for enhancing competitiveness, improving customer experience, and expanding financial inclusion. According to the State Bank of Vietnam's Digital Banking Development Plan, more than 80% of banking services are expected to be delivered through digital channels by 2030, signaling a strong national commitment to this transformation.

Vietnam International Commercial Joint Stock Bank (VIB) is among the pioneers in adopting digital banking technology, integrating artificial intelligence (AI), big data analytics, and user-friendly interfaces into its service ecosystem. The Dong Nai branch holds a strategic position as a financial hub, serving a fast-growing industrial province with a diverse customer base that ranges from young, tech-savvy users to older customers with limited digital literacy. This diversity presents both opportunities and challenges for maintaining consistent service quality and customer satisfaction.

Customer satisfaction has long been recognized as a critical determinant of business success and loyalty in the service industry. Within the digital banking context, satisfaction depends on multiple interrelated factors, including service quality, responsiveness, perceived value, personalization, transaction security, and ease of use. Previous international studies, particularly those based on the SERVQUAL model and the Technology Acceptance Model, have highlighted the importance of these dimensions in shaping users' perceptions and behavioral intentions [3, 4]. However, in Vietnam, empirical research on customer satisfaction with digital banking services remains limited, particularly at the branch level, where local characteristics can significantly influence the user experience.

This study aims to fill that gap by measuring customer satisfaction with digital banking services at VIB's Dong Nai Branch and identifying the key determinants that influence satisfaction. By applying a mixed-method approach that combines qualitative insights and quantitative analysis, the research develops a six-factor model encompassing service quality, responsiveness, perceived value, personalization, security & safety, and ease of use.

The findings are expected to provide both theoretical and practical contributions. Theoretically, the study enriches the literature on digital banking service quality and customer satisfaction in emerging economies. Practically, it offers managerial implications to help VIB enhance its service performance, strengthen customer trust, and improve its competitive advantage in the digital era.

2. LITERATURE REVIEW AND RESEARCH MODEL

2.1 Literature review

The idea of customer satisfaction, which refers to how well a service meets or exceeds a client's expectations, has been the subject of much research in the fields of marketing and service management. When the outcomes of a service are compared to the expectations that were previously set, the result is satisfaction [1-4]. Satisfaction, which happens when actual performance meets or exceeds expectations, increases client loyalty, retention, and good word of mouth.

The way consumers engage with banks has been drastically altered by the digital revolution. Automated, convenient, personalized, and available at all times, digital banking has become an essential component in client satisfaction. The SERVQUAL model identifies five components of service quality: tangibles, reliability, responsiveness, assurance, and empathy [1-5]. Features such as data security, system stability, and responsiveness through digital channels have replaced traditional dimensions in digital contexts, which have experienced substantial adaptations of this notion.

This is in addition to the study known as the Technology Acceptance Model (TAM), which posits that two key factors influencing how people perceive technology are its perceived benefits and ease of use. These factors have a direct impact on how satisfied customers are with digital banking and whether they continue to use it, and expanded TAM to include perceived value and trust as mediators of consumers' adoption behavior [5-6].

When assessing the quality of a service, customers weigh the pros and cons, including monetary, time, and effort expenses, according to the Perceived Value Theory [2-5]. According to research, when it comes to online services, perceived value is a major predictor of both satisfaction and repurchase intention. Furthermore, personalization has emerged as a key factor, with banks utilizing AI and big data analytics to customize digital experiences.

There has been a recent uptick in the importance of security and privacy concerns as determinants of trust and satisfaction with online banking. Customers' confidence in the security of online purchases has a significant impact on their propensity to use these kinds of services [10].

Service quality, responsiveness, perceived value, personalization, security, and the simplicity of use are the various factors linked to digital banking satisfaction, according to a prior study. This study's research approach, which seeks to quantify and explain Vietnamese customers' satisfaction with VIB's digital banking services, is based on these constructs.

The theoretical foundation of this study is built upon key frameworks in customer behavior and service quality, including Oliver's Satisfaction Theory, SERVQUAL, Perceived Value Theory, and the Technology Acceptance Model [1-4]. These theories explain how customers evaluate digital banking based on expectations, perceived performance, value, usability, responsiveness, personalization, and security.

The measurement scales used in the research model were adapted from these theoretical constructs and tailored to the digital banking context in Vietnam. However, existing studies reveal several gaps in the research. First, most prior

research focuses on national-level analyses or generalized digital banking environments, with limited attention to specific commercial banks or branch-level contexts. Second, the unique socioeconomic and technological characteristics of Dong Nai, an industrial province with a diverse customer base and varying levels of digital literacy, have not been adequately examined. Third, prior models often consider service quality, technology, and personalization separately rather than integrating them into a comprehensive framework. To address these gaps, the article draws on established theories while extending them into a six-factor model to predict customer satisfaction. The study introduces novelty by validating this integrated model at the Vietnam International Commercial Joint Stock Bank at Dong Nai Branch, thereby capturing local behavioral patterns, technological readiness, and customer expectations specific to this region.

2.2 Research model and hypothesis development

This study develops a conceptual model to examine the factors influencing customer satisfaction with digital banking services at Vietnam International Commercial Joint Stock Bank (VIB) - Dong Nai Branch, drawing on the theoretical foundations outlined in the literature review. Based on the hypothesis that these factors impact customer satisfaction, the suggested model incorporates six independent variables: service quality, responsiveness, perceived value, personalization, security and safety, and ease of use.

The model incorporates the SERVQUAL framework, the Technology Acceptance Model (TAM), and Perceived Value Theory, as proposed [1-2, 6]. These theories collectively capture the multidimensional nature of customer perceptions in digital service environments, where both functional performance and experiential aspects contribute to determining satisfaction levels. The integration of these models is justified by the unique characteristics of digital banking, where technology-driven efficiency, perceived trust, and emotional value coexist to shape the user experience.

2.2.1 Service quality (CL)

Service quality is widely recognized as a central factor influencing customer satisfaction in both traditional and digital banking contexts. The conceptualized service quality comprises five dimensions: tangibles, reliability, responsiveness, assurance, and empathy [1-7, 10]. However, in digital environments, these dimensions evolve into system-specific attributes, such as accuracy, availability, and interface design.

Service quality in digital banking reflects the bank's ability to provide seamless, error-free transactions and reliable system performance. When customers perceive that digital services are dependable and efficient, they are more likely to experience satisfaction and develop trust toward the bank. Conversely, poor system responsiveness or frequent technical failures can quickly erode user confidence.

Previous empirical research confirmed that service quality exerts a direct and positive influence on satisfaction in e-banking settings. In the Vietnamese context, the study

also found that service quality significantly affects overall satisfaction and the intention to continue using digital banking applications.

H1: Service quality has a positive impact on customer satisfaction with digital banking services.

2.2.2 Responsiveness (PH)

Responsiveness refers to the bank's ability to assist customers promptly through digital channels, such as live chat, chatbots, and online customer service. In digital service delivery, response time is a critical determinant of perceived quality and satisfaction [11, 12].

When customers encounter difficulties, such as login problems, delayed transactions, or unclear instructions, immediate and helpful responses can prevent dissatisfaction and strengthen the bank-customer relationship. Emphasize that efficient problem-solving and timely support play a significant role in enhancing user satisfaction in online banking.

In Vietnam, where digital literacy levels vary, responsiveness plays a particularly crucial role in alleviating user anxiety and enhancing perceived control over online transactions. Thus, the following hypothesis is proposed:

H2: Responsiveness positively influences customer satisfaction with digital banking services.

2.2.3 Perceived value (GT)

Perceived value is defined as the customer's overall assessment of the utility of a product or service, based on perceptions of what is received versus what is given [5-6]. In digital banking, perceived value encompasses convenience, time savings, cost efficiency, and accessibility.

Customers evaluate whether the digital platform provides meaningful benefits relative to traditional services. If digital banking allows users to complete transactions quickly, monitor accounts easily, and minimize costs, they are more likely to perceive high value and satisfaction.

Research demonstrated that perceived value is a strong predictor of customer satisfaction and loyalty in online service environments. Within the Vietnamese banking sector, another study found that perceived value mediates the relationship between service quality and satisfaction, underscoring its central role in customer evaluations.

H3: Perceived value has a positive effect on customer satisfaction with digital banking services.

2.2.4 Personalization (CN)

Personalization refers to the extent to which a bank tailors its digital services to meet the individual preferences, behaviors, or needs of its customers [6, 10]. With the rise of artificial intelligence (AI) and big data analytics, banks can now offer personalized experiences, including targeted promotions, spending summaries, and automated financial advice.

The personalization of digital services fosters a sense of recognition and relevance, enhancing emotional engagement and satisfaction. Personalized services improve user trust and perceived usefulness, particularly in mobile banking. Moreover, personalization fosters loyalty by establishing an emotional connection between customers and the bank.

In emerging economies like Vietnam, personalization can bridge the gap between technological innovation and user comfort by simplifying navigation and tailoring content to different customer groups. Hence, it is expected that higher personalization leads to higher satisfaction.

H4: Personalization has a positive impact on customer satisfaction with digital banking services.

2.2.5 Security and safety (BM)

Security and safety are among the most critical determinants of digital banking satisfaction. They encompass the protection of personal information, authentication processes, and fraud prevention mechanisms. Given the increasing frequency of cyberattacks and online fraud, customers' confidence in system security greatly influences their trust and satisfaction [11-15].

In the digital banking context, security extends beyond technical protection to encompass perceived safety, which refers to the level of confidence users feel when transacting online. Previous studies have shown that trust in security mechanisms significantly contributes to satisfaction and the intention to continue using them.

For Vietnamese users, many of whom are transitioning from traditional banking, security concerns remain a key barrier to adoption. Thus, banks that provide transparent, secure, and reliable platforms can enhance satisfaction and loyalty.

H5: Security and safety positively affect customer satisfaction with digital banking services.

2.2.6 Ease of use (DS)

Ease of use, as derived from the Technology Acceptance Model, refers to the extent to which customers perceive that using the digital banking system is effortless and intuitive. In practical terms, it includes straightforward navigation, fast loading speeds, simple procedures, and an accessible interface design.

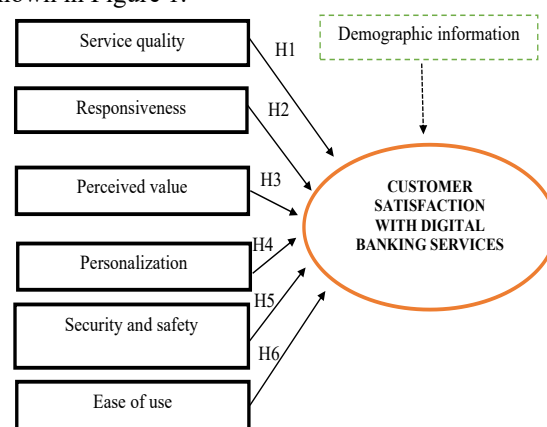
A system that is easy to use reduces the learning curve and enhances user enjoyment, resulting in higher satisfaction and increased adoption. In contrast, complicated logins or interface errors can discourage customers from using the service.

Empirical studies confirm that ease of use is a dominant factor influencing satisfaction and behavioral intention in e-banking. In Vietnam, young users are increasingly digital-oriented, but older customers may face usability challenges. Therefore, banks must design inclusive interfaces to enhance satisfaction across all demographics.

H6: Ease of use has a positive impact on customer satisfaction with digital banking services.

Customer satisfaction represents the dependent variable in this research model. It is defined as the degree to which customers' expectations are met or exceeded by the performance of digital banking services. Satisfaction serves as an essential mediator between service quality and behavioral outcomes such as loyalty and word-of-mouth recommendation. Within digital banking, satisfaction reflects customers' overall assessment of the convenience, reliability, and enjoyment of using the service. It is influenced not only by functional aspects but also by emotional factors, such as trust and comfort. Measuring satisfaction enables banks to evaluate the success of their

digital transformation strategies and pinpoint areas for improvement. The model can be illustrated graphically as shown in Figure 1.



(Source: compiled by the authors)

Figure 1. Research model for six key factors affecting customer satisfaction with digital banking services

Figure 1 presents a study methodology that provides a comprehensive framework for assessing the impact of these six factors on the satisfaction of VIB - Dong Nai Branch customers with digital banking services. In addition to facilitating empirical testing, this paradigm helps shed light on the evolving financial technology ecosystem in Vietnam and its impact on customers' experiences.

3. RESEARCH METHODS

3.1 Qualitative research

To fine-tune the research model and ensure the validity and reliability of the measurement scales, a qualitative phase was conducted before the quantitative analysis [8]. The purpose of this stage was to investigate how consumers and bank employees at the Dong Nai Branch of Vietnam International Commercial Joint Stock Bank (VIB) view and interact with digital banking services.

The researcher employed semi-structured in-depth interviews with a purposive sample of seven experts, including branch managers, digital banking officers, and customer service staff. Participants were selected based on their extensive experience in managing or delivering digital banking services. Each interview lasted approximately 45–60 minutes and focused on clarifying the meanings of constructs such as service quality, responsiveness, perceived value, personalization, security and safety, and ease of use.

All interviews were recorded (with consent), transcribed, and analyzed using content analysis techniques. Responses were grouped by theme to identify recurring patterns and validate whether the theoretical constructs were appropriate for the Vietnamese context. The analysis confirmed that the six proposed factors were relevant and meaningful, but minor linguistic adjustments were made to ensure clarity and cultural alignment in the measurement items.

The qualitative findings provided essential insights for refining questionnaire wording, ensuring contextual fit, and reinforcing the conceptual framework. Consequently, the qualitative phase served as a foundation for designing the

survey instrument used in the subsequent quantitative stage.

3.2 Quantitative research

Following the qualitative phase, a quantitative study was designed to empirically test the proposed research model and hypotheses regarding customer satisfaction with digital banking services at VIB's Dong Nai Branch. This phase aimed to measure the relationships among six independent variables: Service Quality, Responsiveness, Perceived Value, Personalization, Security & Safety, and Ease of Use, and the dependent variable, Customer Satisfaction.

3.2.1 Research design and sampling

The quantitative research employed a survey design using a structured questionnaire. The questionnaire was developed based on refined measurement items from the qualitative phase and adapted from established scales in prior studies. Each item was measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

The target population consisted of individual customers who had used VIB's digital banking services, such as mobile banking, Internet banking, or other online transaction platforms, for at least six months. A non-probability convenience sampling method was applied due to accessibility and time constraints. According to Hair et al. (2010), the minimum sample size should be at least five times the number of observed variables. With 30 observed variables, a minimum of 150 respondents was required. To enhance reliability, the researcher distributed 500 questionnaires and obtained 487 valid responses, representing a high effective rate of 97.4%.

3.2.2 Data collection procedure

Data were collected between March and May 2025 through both online and in-person channels. Online surveys were distributed via VIB's customer email database, while paper-based forms were made available at the branch for walk-in clients. All respondents were informed of the study's academic purpose, assured of confidentiality, and provided consent before participation.

3.2.3 Data analysis methods

The collected data were coded and analyzed using SPSS software (version 20.0). A multi-step analytical procedure was conducted as follows:

Reliability Analysis: Cronbach's Alpha was computed to assess the internal consistency of the measurement scales. Variables with item-total correlations below 0.3 or alpha values below 0.7 were excluded.

To guarantee convergent and discriminant validity, as well as to uncover the underlying factor structure, exploratory factor analysis is the next stage. The requirements were factor loadings greater than 0.5, KMO greater than 0.6, and a significance level of less than 0.05 in Bartlett's Test of Sphericity [8-9]. The linear relationships among the variables were examined using Pearson's correlation coefficients in the correlation analysis. Analysis using Multiple Linear Regression: At last, we ran the numbers through regression analysis to see how each of the six independent variables affected customer happiness. At $p < 0.05$, the level of significance was established.

The quantitative method shed light on the relative importance of each satisfaction determinant and allowed for the empirical confirmation of the conceptual model. This study thoroughly examined the level of satisfaction that customers at VIB's Dong Nai Branch had with their digital banking services. It achieved this by integrating qualitative and quantitative methodologies, which strengthened the theory and made it more applicable to the real world.

4. RESEARCH RESULTS

After the data collection process, a total of 500 questionnaires were distributed to individual customers who had used VIB's digital banking services for at least six months. Out of these, 487 questionnaires were returned and deemed valid, accounting for a 97.4% effective response rate. Thirteen responses were excluded due to incomplete or inconsistent answers. The final dataset was considered adequate for quantitative analysis based on [8-9], which recommends a minimum sample size of at least five times the number of observed variables.

The demographic characteristics of respondents reflected a diverse customer base of VIB – Dong Nai Branch. In terms of gender, 54.4% of the participants were female, and 45.6% were male. Regarding age distribution, the majority (42.1%) were between 26 and 35 years old, followed by 31.8% aged 36–45, 15.0% aged 18–25, and 11.1% aged 45 years or older. This distribution demonstrates that most digital banking users belong to the young and middle-aged working groups, who are generally familiar with technology.

Concerning education, 63.5% held a university degree, 22.8% had a college diploma, and 13.7% possessed postgraduate qualifications. In terms of occupation, 47.2% were office employees, 23.0% were business owners, 16.4% were students, and 13.4% were in other occupations (e.g., freelancers or retirees).

Overall, the respondent profile accurately represents the typical composition of digital banking users in an industrially dynamic province like Dong Nai, ensuring the suitability and generalizability of subsequent analytical results.

Table 1. Summary of Cronbach's Alpha results of factors

No.	Variables	Initial variable number	Number of remaining variables	Cronbach's Alpha
1	CL	5	5	0.912
2	PH	4	4	0.914
3	GT	3	3	0.922
4	CN	3	3	0.854
5	BM	3	3	0.882
6	DS	4	4	0.919
7	HL	4	4	0.913
8	KMO and Bartlett's Test			0.746
9	Eigenvalues			1.484
10	Extraction Sums of Squared			80.659

(Source: the authors processed from SPSS 20.0)

Table 1 presents Cronbach's Alpha results of the factors. To ensure the accuracy and internal consistency of the measurement scales used in the research model, the

collected data from 487 valid responses were analyzed using Cronbach's Alpha and Exploratory Factor Analysis (EFA). These tests were conducted in SPSS version 20.0, following the standard criteria recommended [8-9].

The Cronbach's Alpha coefficients were computed for all seven constructs, including six independent variables and one dependent variable. The results indicated that all scales achieved satisfactory reliability, with alpha values ranging from 0.882 to 0.922, exceeding the threshold value of 0.7.

Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis with Varimax rotation. The Kaiser-Meyer-Olkin (KMO) measure reached 0.746, indicating sampling adequacy, and Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 5,486.217$, $p < 0.001$), confirming that the correlation matrix was suitable for factor extraction.

Seven factors were retained based on Kaiser's criterion (Eigenvalue > 1), with the lowest retained eigenvalue equal to 1.484. The extracted factors explained a cumulative 80.659% of the total variance, exceeding the recommended threshold for social science research. All factor loadings were above 0.5, showing strong convergent validity, and no cross-loadings were found, ensuring discriminant validity.

The reliability and validity tests conducted for this study's scales showed that they were a good indicator of how satisfied customers were with their digital banking experiences. Next, we can lay the groundwork for further analyses, such as regression and correlation tests, thanks to the high level of internal consistency and clearly stated factors. Customers' views and experiences with VIB's online banking services are faithfully reflected in the validated measurement model, allowing for thorough testing of the hypotheses presented below.

Table 2. Results of multiple linear regression analysis

Factors	Unstandardized Coefficients		Standardized Coefficients	Sig.	VIF
	B	Std. Error	Beta		
(C)	0.592	0.100		0.000	
CL-X1	0.101	0.018	0.161	0.000	1.122
DS-X2	0.251	0.018	0.415	0.000	1.224
PH-X3	0.134	0.012	0.324	0.000	1.126
GT-X4	0.217	0.014	0.431	0.000	1.161
BM-X5	0.066	0.013	0.152	0.000	1.205
CN-X6	0.078	0.016	0.147	0.000	1.268
	R	R Square (R ²)	Adjusted R ²	Std. error of Estimate	Durbin-Watson
Model	0.815	0.665	0.661	0.307	1.733

(Source: Authors processed from SPSS 20.0)

The multiple linear regression results indicate that the model is statistically significant (Sig. = 0.000) and demonstrates a high explanatory power, with $R^2 = 0.665$ and Adjusted $R^2 = 0.661$. This implies that the six independent variables jointly explain approximately 66.1% of the variance in customer satisfaction toward digital banking services at VIB – Dong Nai Branch. The Durbin-Watson value of 1.733 confirms that no autocorrelation problem exists, while VIF values below 2 indicate the absence of multicollinearity among predictors.

All independent variables have positive and statistically significant effects on customer satisfaction ($p < 0.05$). Among them, Perceived Value (GT-X4) has the most decisive influence ($\beta = 0.431$), followed by Ease of Use (DS-X2, $\beta = 0.415$) and Responsiveness (PH-X3, $\beta = 0.324$). These results point to the importance of customers' views of value, usability, and prompt support in determining satisfaction. Additionally, although to a lesser degree, Service Quality ($\beta = 0.161$), Security & Safety ($\beta = 0.152$), and Personalization ($\beta = 0.147$) all make beneficial contributions. All six hypotheses (H1-H6) are accepted according to the regression analysis. Based on the findings, VIB should prioritize making its digital services more user-friendly and valuable while keeping them responsive, reliable, and secure if it wants to boost customer satisfaction.

Discussion of findings

Research at the Dong Nai Branch of Vietnam International Commercial Joint Stock Bank (VIB) has shown that there are a number of elements that affect customers' happiness with the digital banking services they receive. Customer satisfaction is positively impacted by service quality, responsiveness, perceived value, personalization, security & safety, and simplicity of use, as all six assumptions put forward in the conceptual model were found to be true. This is in line with earlier theoretical and empirical research that has shown that happiness in the digital banking environment has multiple dimensions.

Perceived Value ($\beta = 0.431$) is found to be the strongest predictor of satisfaction, according to the study. It appears that customers mostly evaluate their satisfaction by comparing the benefits they obtain with the time, effort, and prices associated with digital services. The findings are in accordance with those of [1-5, 7], who highlighted the importance of customers' perceived value in determining their level of happiness and loyalty while shopping online. Offering cost transparency, superior transaction speed, and exclusive digital rewards are some ways that VIB can enhance perceived value. This will reinforce users' sense of worth and benefit.

System design and real-time customer assistance play a crucial role in creating pleasant experiences, as shown by the second and third most influential factors, which are Ease of Use ($\beta = 0.415$) and Responsiveness ($\beta = 0.324$). Perceived ease of use is a critical predictor of satisfaction and continuing system adoption [2, 15-19], according to the Technology Acceptance Model, which is supported by the data. In reality, people like stable, aesthetically pleasing, and easy-to-navigate interfaces. Similarly, when users are able to get their questions answered quickly through chatbots, hotlines, and online messaging systems, particularly in the event of technical difficulties, user trust is greatly enhanced.

This research shows that VIB has to keep pouring money into user-friendly digital communication channels and user-centered design. To further enhance happiness and long-term involvement, it would be beneficial to improve the app's responsiveness, reduce transaction errors, and provide 24/7 assistance.

Although the remaining factors, such as Service Quality ($\beta = 0.161$), Security & Safety ($\beta = 0.152$), and

Personalization ($\beta = 0.147$) have comparatively smaller coefficients, their effects remain statistically significant. Service quality remains a fundamental expectation, encompassing system stability, transaction accuracy, and reliability. This result resonates with Parasuraman et al. (1988), who identified service quality as a key antecedent to satisfaction in both traditional and digital contexts.

Security and safety also play a crucial role, as confirmed [12-14], who found that perceived security has a strong influence on satisfaction and trust in e-banking. As digital threats increase, users demand transparent privacy policies, two-factor authentication, and fraud prevention features. Finally, personalization, while the least influential variable, remains important in strengthening emotional attachment and engagement. The ability to offer customized financial insights, spending recommendations, and targeted promotions can help VIB foster customer loyalty and differentiate its digital brand.

Theoretically, the findings validate the integration of SERVQUAL, TAM, and Perceived Value Theory within a single framework applicable to Vietnam's digital banking sector [2, 14]. The model provides a comprehensive view of satisfaction formation, highlighting both functional (ease of use, security, and responsiveness) and psychological (value perception and personalization) dimensions.

From a managerial perspective, VIB should prioritize improving perceived value and usability through continuous system innovation, simplified processes, and personalized experiences. Training frontline staff to respond promptly and empathetically to digital inquiries will further reinforce customer trust. In addition, to remain satisfied in a digital ecosystem that is becoming more competitive, continual investment in cybersecurity and interface improvement is essential. The survey highlights the need to provide customers with an integrated experience that values simplicity, reliability, and overall value in digital banking. With these findings in hand, VIB and other Vietnamese banks can enhance the effectiveness of their digital transformation efforts and foster greater customer loyalty.

Following the standardized betas, perceived value remains the most influential factor ($\beta = 0.431$), followed by Ease of Use ($\beta = 0.415$) and Responsiveness ($\beta = 0.324$). Although statistically significant, the remaining drivers' service quality, security, and personalization have relatively low influence. Discussion and managerial implications should therefore prioritize the three strongest predictors.

5. CONCLUSIONS AND MANAGERIAL RECOMMENDATIONS

5.1 Conclusions

At the Dong Nai Branch of Vietnam International Commercial Joint Stock Bank, we wanted to find out how happy our customers were with our digital banking services and what factors were most important in making them happy. A research framework was created and put to the test with data obtained from 487 valid respondents. The framework is based on the integration of SERVQUAL, TAM, and PVT, and it comprises six factors: Service

Quality, Responsiveness, Perceived Value, Personalization, Security & Safety, and Ease of Use.

According to the findings of the multiple linear regression analysis, each of the six criteria significantly and positively affects customer satisfaction. From this group, the top two predictors were perceived value and ease of use, followed by responsiveness, service quality, security and safety, and personalization. The results show that digital banking services' functional efficiency isn't the only factor that matters to customers' pleasure; perceived value, convenience, and trust in the system also play important roles. Results show that customers are generally pleased with VIB's digital banking services, which is a reflection of how happy they are with the bank's use of current technology. By offering insights that financial institutions can use to improve digital service quality, user experience, and competitive advantage in the era of digital transformation, as well as by providing a validated model for assessing satisfaction in Vietnam's digital banking context, the study contributes to both theory and practice.

5.2 Managerial recommendations

Based on the empirical findings, all six factors: Perceived Value ($\beta = 0.431$), Ease of Use ($\beta = 0.415$), Responsiveness ($\beta = 0.324$), Service Quality ($\beta = 0.161$), Security & Safety ($\beta = 0.152$), and Personalization ($\beta = 0.147$) positively and significantly influence customer satisfaction with digital banking services at Vietnam International Commercial Joint Stock Bank at Dong Nai Branch. To improve satisfaction and strengthen competitive advantage, the following managerial recommendations are proposed, prioritized according to their relative importance.

(1) Enhancing perceived value ($\beta = 0.431$) showed that perceived value is the strongest determinant of satisfaction, representing how customers weigh the benefits of digital services against the costs, time, and effort involved. Therefore, VIB needs to make sure that consumers get the most out of their digital experiences, both in terms of the physical and intangible benefits. To maintain competition, VIB should routinely assess transaction costs, service fees, and interest rate differentials. Customers' trust and perception of fairness will be strengthened by transparent disclosure of pricing policies via digital media. If you want your online and mobile banking transactions processed quickly and reliably, you need to make sure your apps are stable and speedy. Customers will like the convenience of new features, including biometric authentication, automatic bill scheduling, and "one-touch" payments. Make digital payments more attractive by instituting loyalty programs, online savings campaigns, or cashback offers. These bonuses make using the digital platform more enjoyable and valuable, which in turn encourages users to stick around. Promote VIB's platforms through targeted digital marketing efforts that highlight the platform's security, ease of use, and ownership over one's own finances. To help clients better grasp the digital benefits and boost their perception of value, educational content like tutorials, webinars, or short videos can be provided.

(2) Improving ease of use ($\beta = 0.415$) showed that ease of use is the second most influential factor and a key determinant of digital adoption and satisfaction. A simple,

intuitive, and visually appealing interface directly contributes to customers' positive experiences. To maintain user comfort and ease, VIB should update its digital interfaces regularly with modern design elements, such as adaptive color schemes, minimalist layouts, and clear icons. Reducing the number of clicks required for critical transactions necessitates optimizing navigation pathways. Lengthy or complicated purchasing procedures often deter customers. The use of auto-fill options and guided procedures can significantly enhance the usability of tasks such as account opening, credit card application, or loan registration. There is a need for performance, compatibility, and accessibility optimization of VIB's mobile app, given the prevalence of smartphones. The use of voice commands or virtual assistants driven by artificial intelligence can also help clients who aren't as comfortable with technology. Identify areas where people are experiencing difficulty navigating digital spaces by conducting regular user tests and surveys for feedback. Updates that incorporate user feedback are more likely to satisfy users and maintain high levels of satisfaction.

(3) Strengthening responsiveness ($\beta = 0.324$) showed that responsiveness measures how promptly and effectively the bank assists customers through digital channels. It reflects the human dimension of technology-based service, significantly influencing satisfaction and trust. Integrate online chat, hotline, and email systems into a unified communication platform to ensure seamless interaction. Automated chatbots can handle basic inquiries instantly, while complex issues are escalated to human agents. Establish around-the-clock digital customer support, particularly for urgent problems such as failed transfers or security concerns. Time-sensitive responses reduce frustration and enhance trust. Provide regular training for customer service teams on new system updates, troubleshooting, and soft skills in online communication. Well-trained staff can deliver accurate, empathetic, and fast support across all digital channels. Integrate feedback buttons or short satisfaction surveys at the end of digital transactions. This enables VIB to monitor service responsiveness and make timely improvements based on customer suggestions.

(4) Maintaining and upgrading service quality ($\beta = 0.161$) showed that service quality ranks fourth in influence; it remains a foundational element of customer satisfaction. Consistent service delivery and reliability form the basis of trust in digital banking. VIB should continuously invest in server infrastructure and backup systems to prevent downtime. A stable and uninterrupted service fosters customer confidence and satisfaction. Implement robust error detection mechanisms and transaction confirmation notifications to minimize technical mistakes and disputes. Ensuring high transaction precision enhances perceived professionalism. Develop a unified digital service manual outlining best practices for customer interactions and complaint resolution. Consistency across all touchpoints from mobile apps to web portals reinforces the bank's brand image. Establish clear Key Performance Indicators (KPIs) for service quality, such as system uptime, response times, and

resolution rates, and review them regularly to ensure continuous improvement.

(5) Enhancing security and safety ($\beta = 0.152$) showed that security concerns have a direct impact on customers' trust in and use of online banking services. Despite its lowly position in terms of influence, it is an essential premise for happiness and devotion. Secure your data with state-of-the-art encryption, firewall, and fraud detection systems. Preventing vulnerabilities requires regular system audits and penetration tests. Develop awareness programs that educate individuals on how to stay safe online by instructing them to use strong passwords, avoid phishing scams, and utilize secure devices. User trust and collective security responsibilities are fostered through proactive communication. Make privacy policies clear and get people's permission before using their data. Consumers are more at ease and risk-averse when dealing with data when there is transparency. Establish a system to respond promptly in the event of suspected fraud or security breaches. Customers are safeguarded, and the bank's reputation is preserved through prompt communication and resolution of security issues.

(6) Expanding personalization ($\beta = 0.147$) showed that personalization shows the smallest coefficient; it remains strategically crucial in creating emotional connections and long-term customer loyalty. Personalization enables digital banking to evolve beyond transactions into tailored financial experiences. Leverage customer data analytics to identify spending habits, preferences, and behavioral patterns. Use predictive models to recommend personalized savings plans, credit options, or investment products. Classify customers based on demographic and behavioral factors to tailor marketing campaigns, promotions, and communication styles to each segment's needs. Allow users to personalize their dashboard layouts, color themes, or notification settings. Empowering users to design their digital experience enhances engagement and satisfaction. Introduce digital relationship managers or personalized advisory chatbots to provide real-time financial guidance. Personalized follow-up messages after significant transactions (e.g., loans, savings milestones) can increase emotional connection and loyalty.

Limitations and future research

Although this study provides meaningful insights into the determinants of customer satisfaction with digital banking services at VIB Dong Nai Branch, several limitations should be acknowledged. First, the research sample was limited to a single branch, which may restrict the generalizability of the findings to other regions or banking institutions. Second, the study employed a cross-sectional design; thus, it captures customer perceptions at a specific point in time rather than long-term behavioral changes. Third, the analysis focused on quantitative data, while qualitative insights from customers' lived experiences could further enrich the understanding of satisfaction dynamics.

Future studies should expand the sample across multiple branches and banking networks, apply longitudinal or mixed-method approaches, and explore additional constructs such as customer trust, digital literacy, and perceived risk to provide a more comprehensive

understanding of digital banking satisfaction in Vietnam's evolving financial landscape.

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APPENDIX: THE QUESTIONNAIRE

Code	Item Content	Scale				
1. Service Quality (CL)						
1.1	Digital banking transactions at VIB are accurate and error-free.	①	②	③	④	⑤
1.2	Information provided on digital banking platforms is complete, clear, and easy to understand.	①	②	③	④	⑤
1.3	System functions operate stably and continuously.	①	②	③	④	⑤
1.4	Digital banking services are diverse and meet your needs.	①	②	③	④	⑤
1.5	You are satisfied with the overall quality of VIB’s digital banking services.	①	②	③	④	⑤
2. Responsiveness (PH)						
2.1	The bank responds quickly when you submit a request or inquiry.	①	②	③	④	⑤
2.2	Transaction issues are supported promptly via hotline/chat/email.	①	②	③	④	⑤
2.3	Staff proactively contact you to resolve issues.	①	②	③	④	⑤
2.4	The processing time for your requests is faster than expected.	①	②	③	④	⑤
3. Perceived Value (GT)						
3.1	Service fees are reasonable compared with the value received.	①	②	③	④	⑤
3.2	Digital banking helps you save time and costs.	①	②	③	④	⑤
3.3	You feel that the benefits you receive from the service are worthwhile.	①	②	③	④	⑤
4. Service Personalization (CN)						
4.1	Product/service recommendations match your needs.	①	②	③	④	⑤
4.2	The interface/features can be customized to your preferences.	①	②	③	④	⑤
4.3	You receive personalized notifications/offers based on your transaction history.	①	②	③	④	⑤
5. Security & Transaction Safety (BM)						
5.1	You trust the security system of VIB’s digital banking.	①	②	③	④	⑤
5.2	Your personal and transaction information is securely protected.	①	②	③	④	⑤
5.3	Authentication methods (OTP, biometrics, etc.) make you feel safe when transacting.					
6. Ease of Use (DS)						
6.1	The interface is visually clear and user-friendly.	①	②	③	④	⑤
6.2	Transaction steps are simple and easy to perform.	①	②	③	④	⑤
6.3	It is easy to find the functions you need.	①	②	③	④	⑤
6.4	You can use digital banking without requiring extensive instructions.	①	②	③	④	⑤
7. Customer Satisfaction (HL)						
7.1	You are satisfied with your overall experience using digital banking.	①	②	③	④	⑤
7.2	The service meets your expectations.	①	②	③	④	⑤
7.3	You intend to continue using VIB’s digital banking services.	①	②	③	④	⑤
7.4	You are willing to recommend VIB’s digital banking to others.	①	②	③	④	⑤

Please indicate your level of agreement with the following statements by marking "X" in the box that best reflects your opinion. This survey uses a 5-point Likert scale from 1 to 5, where: 1 = Strongly disagree and 5 = Strongly agree.