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DRIVERS OF DIGITAL BANKING ADOPTION IN VIETNAM: THE CASE OF A LEADING COMMERCIAL BANK

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ABSTRACT

This study investigates the key factors influencing individual customers' adoption of digital banking services at the Vietnam Prosperity Joint Stock Commercial Bank (VPBank), a leading commercial bank in Vietnam's rapidly evolving digital landscape. Utilizing a quantitative approach with survey data from 315 VPBank customers in Hanoi, this research employs a model integrating constructs from established technology acceptance theories to identify and assess the drivers of digital banking usage. The findings reveal that Security and Privacy are the most significant determinant, followed by Technology Competence, Customer Attitude, Perceived Usefulness, Customer Trust, Perceived Ease of Use, and Social Influence, all of which positively and significantly impact DBS adoption. The model explains 52.4% of the variance in usage decisions. These results provide valuable empirical insights for the studied bank and Vietnamese commercial banks to formulate effective strategies aimed at enhancing digital banking adoption, thereby improving competitiveness and contributing to the nation's digital economy.

KEYWORDS: - Digital Banking Services; Customer Behavior; Technology Acceptance; Commercial Banking; Vietnam.

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1.0 INTRODUCTION

The unceasing development of information technology and digital techniques has encouraged revolutionary changes across numerous socio-economic sectors globally, with the financial services industry, particularly banking, undergoing a robust digital transformation. Commercial banks (CMBs) worldwide, as well as in Vietnam, increasingly recognize the pivotal role of developing digital banking services (DBS) as a decisive factor for competitive capacity, the ability to meet diverse customer demands, and optimizing operational efficiency in the digital era.

In Vietnam, the 4th Industrial Revolution is currently fostering an environment where CMBs are significantly focusing on investment and the application of advanced technological achievements to simplify processes, diversify products, and enhance customer experience. Although considered to be in the initial stages of digital transformation, many Vietnamese CMBs have proactively formulated digitalization strategies and oriented their development towards digital banking in line with the directives of the Government and the State Bank of Vietnam (SBV), viewing this as a mission critical for survival. Evidence indicates that by the end of 2024, an estimated over 80% of banking institutions in Vietnam had established plans and were actively implementing digital transformation activities, with many fundamental operations fully digitized and the proportion of transactions conducted via digital channels at numerous banks exceeding 90%.

Against this backdrop, Vietnam Prosperity Joint Stock Commercial Bank (VPBank) has emerged as one of the pioneering financial institutions, achieving considerable success in DBS development. With a strategy centered on sustainable development and technological innovation, VPBank has strived to build and refine digital banking products and services to cater to the increasingly varied needs of its customers. The bank has invested heavily in its technological platform, successfully launching the VPBank NEO digital banking application, which has attracted a large user base and achieved a high rate of digital transactions, significantly contributing to enhanced operational efficiency and market share expansion.

However, for the development of DBS at VPBank specifically, and among Vietnamese CMBs generally, to yield optimal and sustainable effectiveness, there is an urgent need to deeply understand the factors genuinely motivating customers to adopt and utilize these services. Clearly identifying these factors is not only scientifically significant but also offers immense practical value, enabling banks to devise suitable product, marketing, and customer care strategies. In this regard, the primary research question is: What factors influence the decisions of individual customers towards using DBS at VPBank, and what is the extent of their influence?

With this objective, this paper focuses on identifying and measuring the impact of various factors - including perceived ease of use, perceived usefulness, customer trust, security and privacy, technology competence, social influence, and customer attitude - on the DBS usage decisions of individual customers at VPBank. The research scope is on individual customers currently using the bank's DBS. The study is, theoretically, expected to contribute to the validation and potential extension of technology acceptance models within the specific context of DBS in an emerging market like Vietnam. Practically, the research findings provide crucial scientific evidence to assist VPBank and other CMBs in Vietnam in formulating effective strategies and solutions to attract and retain DBS users, thereby enhancing competitiveness and positively contributing to the overall development of the national digital economy and the financial system.

2. LITERATURE REVIEW

2.1. Theoretical background

In the context of the significant digital transformation of the financial industry, a clear understanding of the foundational concepts of digital banking (DB) and digital banking services (DBS) is essential.

DB is defined as an operational model based on a technology platform, where banking products and services are provided and customers (C) can access them anytime, anywhere via the internet and digital devices, without needing to visit a physical branch. This encompasses innovation in financial services, revolving around mobile, digital, artificial intelligence (AI), and payment strategies, as well as regtech, data, blockchain, API, and distribution channel technologies.

Accordingly, DBS refers to banking services and activities delivered through electronic or digital channels, enabling customers to independently conduct transactions, manage accounts, and access other financial services. The development of DBS is not merely about expanding scale but is also a continuous process of improving service quality, optimizing user experience, ensuring security, and building customer trust.

Given the rapid development of DBS, exploring customers' decisions to adopt and use these services is important. First, research findings help banks gain a deeper understanding of customer needs and expectations, thereby enabling them to improve existing products and services and develop new, more suitable solutions, thus creating a competitive advantage in the market. Second, identifying the barriers and drivers in the DBS adoption process allows banks to recognize their system's strengths and weaknesses; for example, enhancing security measures if this is a primary customer concern, or simplifying user interfaces to increase ease of use. Third, these insights form a crucial basis for banks to develop more effective marketing, communication, and customer care strategies, targeting the factors that most strongly influence customer decisions. Lastly, studying DBS adoption factors not only contributes to the operational efficiency and sustainable development of individual banks but also supports the broader goals of promoting financial inclusion and advancing the digital economy in Vietnam.

To explain users' adoption and usage of new technologies, including DBS, numerous theories and models have been developed and empirically tested by scholars. These theories provide a robust framework for identifying the underlying psychological and social factors behind an individual's decisions.

The Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1967) has introduced that behavioral intention is determined by attitude toward the behavior and subjective norms. Subsequently, Ajzen (1991) extended TRA into the Theory of Planned Behavior (TPB) by incorporating Perceived Behavioral Control, emphasizing the role of an individual's perception of their ability to perform the behavior. In the field of information technology, the Technology Acceptance Model (TAM), proposed by Davis (1985, 1989), has gained widespread acceptance, focusing on two core cognitive constructs - Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) - as key determinants of usage intention.

Later models, the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003), have attempted to integrate elements from multiple preceding theories (including TRA, TPB, TAM, and others) to offer a more comprehensive view, capturing all observable and potential key factors like performance expectancy, effort expectancy, social influence, and facilitating conditions, while also considering the role of moderating variables. The evolution of these theories

reflects an ongoing quest for a more holistic explanation of the complex factors shaping human technology adoption, ranging from individual and cognitive elements to influences from the social environment and supporting conditions.

2.2. Empirical Studies

Empirical studies both internationally and in Vietnam have identified numerous factors influencing customers' adoption of digital banking's services. Internationally, Bashir and Madhavaiah (2015) & Samartha et al. (2022) in India, Alnemer (2022) in Saudi Arabia, and Hough and Chan (2018) in South Africa have all highlighted the roles of perceived usefulness, ease of use, trust, and perceived risk in different economies and financial markets. Particularly, Bashir and Madhavaiah (2015) indicated that perceived usefulness, perceived ease of use, trust, and enjoyment are direct determinants of customer attitude while attitude, perceived risk, enjoyment, technology competence, and trust determine behavioral intention. Samartha et al. (2022) emphasized the role of social influence and trust in motivating Indian users to use mobile banking applications.

In Vietnam, studies have also discovered similar factors driving customers' adoption of digital banking services. Pham (2024) found that bank's brand reputation, customer relationship quality, social influence, and technological factors (utility, friendliness, and security of applications) positively influence the intention to use digital banking, with technological factors having the strongest impact. Nguyen et al. (2020), based on the TAM model, affirmed that perceived usefulness and perceived ease of use are the two most crucial factors, while security risk is a barrier. Le&Dao (2019) identified six main factors affecting the decision to use e-banking services including: performance expectancy, transaction risk, perceived ease of use, perceived usefulness, social influence, and bank brand. Nguyen et al. (2020) using the UTAUT2 model, and Tran et al. (2022) reached similar conclusions regarding factors such as performance expectancy, effort expectancy, hedonic motivation, habit, trust, attitude, and perceived risk.

Overall, both international and domestic studies consistently reveals a set of factors, encompassing cognitive aspects (usefulness, ease of use), psychological aspects (trust, attitude, risk), social aspects (influence from peers), and individual capabilities (technology competence), which play a significant role in shaping customers' decisions to adopt and use DBS.

2.3. Research Model Construction and Hypotheses

Building upon aforementioned foundational theories of TRA, TAM, UTAUT, and adopting research findings of Bashir and Madhavaiah (2015), Hough and Chan (2018), and Ni (2020), this study's proposed research model, as depicted in Figure 1, covers key potential and observable drivers of clients' adoption towards commercial banks' DBS (DBS Usage Decision – UDE).

- **Perceived Ease of Use (ESP):** Defined as 'the degree to which a person believes that using a particular system would be free of effort' (Davis, 1989). In the digital banking context, perceived ease of use refers to users' perceptions of the ease of using banking systems, processes, and services. Celik (2008), Al-Somali et al. (2009), Baptista and Oliveira (2015), Bashir & Madhavaiah (2015), Ni (2020), and Borges et al. (2021) have all consistently found a positive relationship

between perceived ease of use and the intention to use online banking. Therefore, the hypothesis is as follows:

H1: Perceived Ease of Use positively impacts the DBS Usage Decision of individual customers

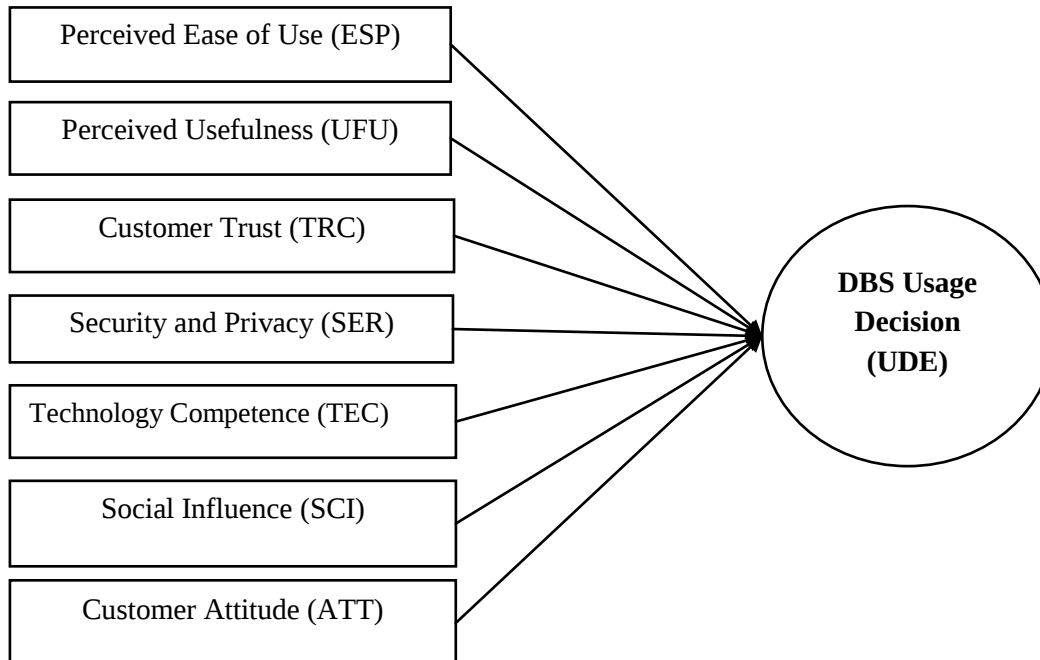
- **Perceived Usefulness (UFU):** Defined as 'the degree to which a person believes that using a particular system would enhance his or her job performance' (Davis, 1989). In the digital banking context, this relates to users' perceptions of whether using a banking system will increase their productivity. Numerous studies (Tan et al., 2010; Amin, 2009; Bashir and Madhavaiah, 2015; Celik, 2008; Yoon and Steege, 2013, etc.) have confirmed the positive impact of perceived usefulness on DBS usage decision.

H2: Perceived Usefulness positively impacts the DBS Usage Decision of individual customers

- **Customer Trust (TRC):** Defined by Gefen (2000) as 'the confidence a person has in his or her expectations of what the other party will do, based on their previous interactions, even though the expected behavior of the other party is not guaranteed'. Trust, a critical factor in the digital banking environment due to inherent security risks, has been proved to be positively associated with the clients' adoption intention of online banking services (Alsajjan and Dennis, 2010; Al-Somali et al., 2009; Chong et al., 2010; Hough and Chan, 2018; Kusumawati and Rinaldi, 2020)

H3: Customer Trust positively impacts the DBS Usage Decision of individual customers

Figure 1. Research model



- **Security and Privacy (SER):** Perceived risk is the uncertainty that consumers may incur financial, performance, social, and/or privacy losses when they cannot anticipate the consequences of using DBS. In the online environment, the perception of security and privacy is a significant factor influencing consumer technology adoption (Celik, 2008; Lee, 2009). Users will effectively

use mobile banking services when they believe their transactions are secure, and their personal and financial information are protected (Bhatiasevi, 2016; Hanafizadeh et al., 2014).

H4: Security and Privacy positively impact the DBS Usage Decision of individual customers

- **Technology Competence (TEC):** Consumers with good technology adaptability can easily use online banking services if they are user-friendly (Cheng et al., 2006; Lee, 2009). Technological proficiency helps users feel more at ease with operations (Chiou and Shen, 2012; Mukhopadhyay, 2021).

H5: Technology Competence positively impacts the DBS Usage Decision of individual customers

- **Social Influence (SCI):** Defined as the degree to which an individual perceives that important others (relatives, friends, colleagues) believe he or she should use or adopt an innovation (Park et al., 2019; Venkatesh et al., 2003). To be accepted in their social environment, customers often conform to group norms (Osatuyi and Turel, 2019). Social influence is a key factor in technology usage decisions (Talukder et al., 2014; Kunz and Santomier, 2020).

H6: Social Influence positively impacts the DBS Usage Decision of individual customers

- **Customer Attitude (ATT):** Defined by Fishbein and Ajzen (1975) as "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object". Attitude positively influences an individual's intentions (Davis, 1989, Lai and Li, 2005; Lee, 2009; Bashir and Madhavaiah, 2015)

H7: Customer Attitude positively impacts the DBS Usage Decision of individual customers

3. RESEARCH DATA AND METHOD

3.1. Research Data

To test the research model and hypotheses, an online survey is conducted targeting individual customers currently using Digital Banking Services (DBS) of VPBank in Vietnam. Data were collected through popular social networks from May to October 2024. After eliminating invalid responses, a total of 315 complete survey questionnaires are utilized for the final analysis. This sample size is considered adequate for applying complex statistical analysis techniques such as factor analysis and regression modeling, based on Bollen's (1989) recommendation of a ratio of 5 observations per estimated variable (with 34 observed variables in this research model, the minimum required sample size is 170). The collected dataset is coded and processed with SPSS 22.

3.2. Research Method

Initially, descriptive statistics analysis is employed to outline the demographic characteristics of the research sample. Subsequently, the reliability of the measurement scales is assessed using Cronbach's Alpha coefficients. Items with an item-total correlation coefficient below 0.3 are excluded from further analysis. Following this, Exploratory Factor Analysis (EFA) is performed to identify the underlying factor structure and evaluate the unidimensionality of the scales. Criteria such as the Kaiser-Meyer-Olkin (KMO) measure, Bartlett's test of sphericity, total variance explained (TVE > 50%), and factor loadings (> 0.5) are carefully considered.

After confirming the reliability and validity of the measurement scales, Pearson correlation analysis is conducted to examine the linear relationships between the study variables, while also checking for multicollinearity using the Variance Inflation Factor (VIF). Finally, Multiple Regression Analysis is utilized to test the research hypotheses, determining the direction and magnitude of the impact of the independent variables (Perceived Ease of Use, Perceived Usefulness, Customer Trust, Security and Privacy, Technology Competence, Social Influence, Customer Attitude) on the dependent variable (DBS Usage Decision). Tests for the appropriateness of the regression model (R-squared, F-statistic), and assumptions of the model such as the normality of residuals, independence of residuals (Durbin-Watson), and homoscedasticity are also performed to ensure the robustness of the regression results.

As for detailed constructions of variables used in the research model, the measurement scales are developed by adapting and modifying those from reputable prior research in the fields of technology adoption and consumer behavior, primarily drawing from Bashir and Madhavaiah (2015), Hough and Chan (2018), and Ni (2020), with further refinements to suit the DBS context in Vietnam and the characteristics of clients of the studied commercial bank in Vietnam – VPBank (Vietnam Prosperity Joint-Stock Commercial Bank). The research model comprises seven independent factors and one dependent factor. Specifically:

- **Perceived Ease of Use (ESP):** Measures the degree to which users feel that using VPBank's DBS is effortless. This scale consists of 05 observed variables.
- **Perceived Usefulness (UFU):** Assesses the extent to which users believe that using VPBank's DBS will enhance their performance or provide them with benefits. This scale includes 05 observed variables.
- **Customer Trust (TRC):** Reflects customers' confidence in VPBank's reliability, competence, and integrity in providing DBS. This scale has 05 observed variables.
- **Security and Privacy (SER):** Measures customers' perceptions of the safety and protection of personal and financial information when using VPBank's DBS. This scale comprises 05 observed variables.
- **Technology Competence (TEC):** Evaluates customers' confidence and skills in using technological devices to access and conduct DBS transactions. This scale features 05 observed variables.
- **Social Influence (SCI):** Measures the extent to which the opinions of significant others (family, friends, colleagues) affect a customer's decision to use DBS. This scale includes 04 observed variables.
- **Customer Attitude (ATT):** Reflects customers' overall positive or negative evaluations towards using VPBank's DBS. This scale consists of 04 observed variables.

- **DBS Usage Decision (UDE):** The dependent variable, measuring the intention to continue using and the willingness to pay for VPBank's DBS. This scale has 04 observed variables.

All observed variables were measured using a 5-point Likert scale, with responses ranging from (1) "Strongly Disagree" to (5) "Strongly Agree ". Prior to the main survey, the questionnaire and measurement scales underwent a preliminary qualitative research phase, including in-depth expert interviews and a pilot test with a small group, to ensure the clarity, comprehensibility, and appropriateness of the items.

4. RESULTS AND DISCUSSION

4.1. Results

This section presents the main findings from the quantitative data analysis, including descriptive statistics of the survey sample, assessment of the reliability and validity of the measurement scales, correlation analysis, and finally, the results of the regression model.

4.1.1. Sample Statistics and Scales Validation

The research sample consisted of 315 individual customers of VPBank. Demographic profile of respondents (Table 1) shows a relatively balanced gender distribution, with the majority belonging to younger age groups (80% under 40 years old). Most participants hold a college degree or higher, and their income levels are predominantly in the upper-middle range. The occupations of the respondents were diverse, with office workers and government officers/civil servants forming significant proportions.

Table 1. Demographic Profile of Respondents (N=315)

Characteristic	Category	N = 315	%
Gender	Male	163	51.75
	Female	152	48.25
Age	< 30	152	48.25
	30 - 40	100	31.75
	40 - 50	44	13.97
	> 50	19	06.03
Education	High school or lower	43	13.65
	Vocational	60	19.05
	College	55	17.46
	University	137	43.49
	Postgraduate	20	6.35
Monthly Income	< 10 million VND	59	18.73
	10 - 15 million VND	113	35.87
	15 - 20 million VND	99	31.43
	> 20 million VND	44	13.97

Characteristic	Category	N = 315	%
Occupation	Office worker	103	32.70
	Government officer/Civil servant	74	23.49
	Small business owner/Trader	41	13.02
	Worker/Laborer	34	10.79
	Business manager/Executive	20	6.35
	Retired	13	4.13
	Freelancer/Self-employed	30	9.52

Source: Authors' estimates

All measurement scales for the seven independent variables (Perceived Ease of Use, Perceived Usefulness, Security and Privacy, Social Influence, Technology Competence, Customer Trust, and Customer Attitude, after adjustment) and the one dependent variable (DBS Usage Decision) demonstrate good reliability. Cronbach's Alpha coefficients exceed the 0.7 threshold for all scales, with the highest being 0.902 for Security and Privacy, and all item-total correlations meet the required criteria. Exploratory Factor Analysis (EFA) confirms the convergent and discriminant validity of the scales. The EFA results indicate that seven factors extracted from the independent variables explain 65.301% of the total variance, with a KMO value of 0.787 and a significant Bartlett's test. All observed variables have factor loadings greater than 0.5 and converge appropriately onto their theoretically anticipated factors. The DBS Usage Decision scale also demonstrates clear unidimensionality through EFA.

4.1.2. Regression Results

Pearson correlation analysis reveals that the dependent variable (DBS Usage Decision) has a positive and statistically significant correlation with all seven independent variables (Table 2). The Variance Inflation Factor (VIF) test for multicollinearity producing values of less than 2 confirms that multicollinearity is not an issue in the research model.

Table 2. Pearson's Correlation Matrix

	UDE	ESP	UFU	TRC	SER	TEC	SCI	ATT
UDE	1							
ESP	.384	1						
UFU	.401	.173	1					
TRC	.414	.136	.247	1				
SER	.482	.209	.286	.313	1			
TEC	.400	.242	.060	.249	.158	1		
SCI	.373	.258	.146	.194	.219	.168	1	
ATT	.274	.100	.192	.065	.009	.026	.132	1

Source: Authors' estimates.

The results of the regression analysis (Table 3) indicate that the research model is appropriate, with an adjusted R² of 0.524. This means that the seven independent variables explain 52.4% of the

variance in customers' DBS Usage Decision. The Durbin-Watson value was 2.035, suggesting no first-order autocorrelation among the residuals.

All seven independent variables have a positive and significant impact ($p < 0.001$) on DBS Usage Decision. Based on the standardized Beta coefficients, the factors are ranked by their impact magnitude as follows: Security and Privacy ($\beta=0.274$), Technology Competence ($\beta=0.237$), Customer Attitude ($\beta=0.184$), Perceived Usefulness ($\beta=0.183$), Customer Trust ($\beta=0.162$), Perceived Ease of Use ($\beta=0.159$), and Social Influence ($\beta=0.150$). These results support all hypotheses from H1-7.

Table 3. Regression results

Variable	Standardized β	Std.Dev	T-stat	P-value
ESP	0.159	0.035	3.791	***
UFU	0.183	0.036	4.338	***
TRC	0.162	0.042	3.779	***
SER	0.274	0.037	6.359	***
TEC	0.237	0.036	5.716	***
SCI	0.150	0.040	3.594	***
ATT	0.184	0.036	4.583	***

Note: *** $p < 0.01$

Source: Authors' estimates

4.2. Discussion

The quantitative analysis results have provided significant empirical evidence regarding the factors influencing the Digital Banking Service (DBS) usage decisions of individual customers at VPBank. This section will further elaborate on the implications of these findings.

First, Security and Privacy (SER) is identified as the most influential factor impacting VPBank customers' DBS usage decisions ($\beta=0.274$, $p < 0.001$). This result aligns strongly with findings of Zhou (2012), Hanafizadeh et al. (2014), Bhatiasavi (2016), and Borges et al. (2021) which all affirm that when customers trust in the security of transactions and information protection, their service usage tends to increase. Given the increasing prevalence of cyber security threats and online fraud, it is understandable that customers place a high premium on safety and the protection of personal information. This underscores the critical importance of VPBank's ongoing efforts to ensure the security of its DBS, which should be continuously enhanced and improved.

Second, customers' Technology Competence (TEC) also emerges as a significant influencing factor ($\beta=0.237$, $p < 0.001$). This supports the views of Cheng et al. (2006) and Lee (2009), arguing that customers who are more adaptable and confident with technology are more likely to accept and use DBS. When users feel comfortable and capable of resolving basic technical issues, the barriers to service adoption are considerably lowered. This finding is also consistent with Tan et al. (2010), Chiou and Shen (2012), Bashir and Madhavaiah (2015), and Mukhopadhyay (2021), highlighting that as users' technological proficiency increases, banks must innovate their technology to attract and retain customers.

Third, Customer Attitude (ATT) towards using DBS shows a positive and significant relationship with usage decisions ($\beta=0.184$, $p < 0.001$). This finding is consistent with foundational theories such as the Theory of Reasoned Action (TRA) and the Technology Acceptance Model (TAM), where attitude is considered a prerequisite for behavioral intention. Lee (2009), Hough and Chan (2018), and Kiliari and Koesrindartoto (2019) have also confirmed that a positive customer attitude leads to a higher DBS usage decision.

Fourth, the Perceived Usefulness (UFU) of DBS also demonstrates a significant positive impact ($\beta=0.183$, $p < 0.001$). When customers perceive that using DBS helps them save time and costs, conduct transactions conveniently anytime and anywhere, and manage their finances more effectively, their motivation to use the service strengthens. This result reinforces findings within the TAM framework and studies by Baptista and Oliveira (2015), Hough and Chan (2018), and Borges et al. (2021). This implies a need for VPBank to continuously communicate and highlight the tangible benefits that DBS offers to its customers.

Fifth, Customer Trust (TRC) in the bank and its DBS system positively influence usage decisions ($\beta=0.162$, $p < 0.001$). This aligns with Parasuraman et al. (1988) proving that when customers perceive services as reliable, accurate, and fulfilling commitments, they will be satisfied and continue to use. Similarly, Hough and Chan (2018) and Kusumawati and Rinaldi (2020) also indicates that reliability is a cornerstone for customer loyalty to DBS. VPBank's maintenance of operational stability, transparency in fee policies, and timely customer support has likely contributed to reinforcing this trust.

Sixth, Perceived Ease of Use (ESP) also serves as a crucial driver ($\beta=0.159$, $p < 0.001$). When customers find accessing, understanding, and conducting transactions on VPBank's DB applications to be simple, quick, and requiring minimal effort, they are more inclined to use them. This result is consistent with TAM and findings of Lee (2009), Laukkanen (2016), and Ni (2020). Although VPBank offers a relatively diverse and user-friendly range of DBS, continuous improvement of user interfaces and process simplification remains essential, especially considering rising customer expectations and varying levels of technological familiarity.

Finally, Social Influence (SCI) also positively impacts DBS usage decisions ($\beta=0.150$, $p < 0.001$), sharing similar views with Talukder et al. (2019), Kunz and Santomier (2020), and Windasari et al. (2022), asserting the importance of social relationships in communicating and diffusing the use of DBS. This linkage is incorporated into the UTAUT theory, where an individual's perception that significant others believe they should use a technology influences their decision.

In brief, these research findings not only reaffirm discoveries from previous studies globally and in Vietnam but also provide a specific picture of the primary drivers for DBS adoption within the context of a specific commercial bank, VPBank. The strong impact of Security and Privacy, followed by Technology Competence and Customer Attitude, indicates that beyond providing useful and easy-to-use services, ensuring safety and fostering a positive attitude through excellent user experience and customer technological capability are paramount.

5. CONCLUSION AND IMPLICATIONS

This study successfully identifies and evaluates the key factors influencing the Digital Banking Service (DBS) usage decisions of individual customers at VPBank, Vietnam, thereby providing profound insights and significant implications. The quantitative analysis results confirm that seven factors, namely Perceived Ease of Use, Perceived Usefulness, Customer Trust, Security and Privacy, Technology Competence, Social Influence, and Customer Attitude, all exert a positive and statistically significant impact on the DBS Usage Decision. Notably, Security and Privacy are identified as the most influential factor, followed by Technology Competence and Customer Attitude. The research model explains 52.4% of the variance in DBS usage decisions, indicating its good fit and explanatory power. These findings not only reinforce foundational technology acceptance theories such as TAM and UTAUT within the DBS context of an emerging market but also offer specific, valuable empirical evidence for VPBank in particular and the Vietnamese banking sector in general.

Based on the research findings, several key managerial implications are proposed for VPBank and other commercial banks in Vietnam to foster the adoption and utilization of DBS:

First, the first priority should be to enhance Security and Privacy. Accordingly, banks must continuously invest in advanced security technologies; regularly update systems and processes to counter increasingly sophisticated cybersecurity threats. Transparent communication regarding security measures, providing customers with detailed guidance on self-protection, and timely, effective handling of any incidents will be crucial in building and maintaining user trust.

Second, it is essential to elevate the user experience by improving Perceived Usefulness and Perceived Ease of Use. Banks should focus on designing intuitive and user-friendly DBS interfaces, with simple, easy-to-understand transaction processes that genuinely deliver tangible benefits (e.g., time and cost savings, effective financial management). Regularly collecting customer feedback for continuous feature enhancement and simplification of operations is vital.

Third, solutions are needed to support and enhance customers' Technology Competence. Besides developing easy-to-use services, banks should provide instructional programs, visual aids, and multi-channel, prompt technical support to help customers, especially those less familiar with technology, feel more confident and comfortable when interacting with DBS.

Fourth, building and reinforcing Customer Trust is fundamental for sustainable relationships. This requires transparency in all policies (e.g., fees, terms, etc.), a commitment to service quality, ensuring the stability and performance of the DBS system, and a professional and dedicated service attitude from staff across all interaction channels.

Lastly, banks need to cultivate a positive Customer Attitude towards DBS. This can be achieved through continuous service quality improvements, delivering superior and personalized experiences. Effective communication campaigns emphasizing the values and benefits of DBS, along with attractive incentive programs, can encourage customers to form and maintain a positive attitude towards using these services.

Although this study has achieved significant results, certain limitations are acknowledged, which concurrently open avenues for future research. The current survey sample is confined to VPBank's customers in Hanoi; thus, expanding research to other geographical areas and different banks would enhance the generalizability of the findings. Furthermore, employing a mixed-methods approach, combining quantitative analysis with in-depth interviews or focus groups, could provide deeper insights into complex behavioral aspects. Future studies could also explore the impact of emerging factors such as the role of artificial intelligence (AI) in personalizing experiences, the influence of Open Banking, or differences in DBS adoption across diverse customer segments (e.g., by generation, technological literacy).

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(2), 130-141.
- Alnemer, H. A. (2022). Determinants of Digital Banking Adoption in the Kingdom of Saudi Arabia: A Technology Acceptance Model Approach. *Digital Business*, 2(2), 100037.
- Amin, H. (2009). An analysis of online banking usage intentions: An extension of the technology acceptance model. *International Journal of Business and Society*, 10(1), 27.
- Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, 50, 418-430.
- Bashir, I., & Madhavaiah, C. (2015). Consumer attitude and behavioural intention towards Internet banking adoption in India. *Journal of Indian Business Research*, 7(1), 67-102.
- Bhatiasevi, V. (2016). An Extended UTAUT Model to Explain the Adoption of Mobile Banking. *Information Development*, 32, 799-814.
- Bollen, K. A. (1989). *Structural Equations with Latent Variables*. John Wiley & Sons.
- Borges, L, Paulo, F., Passos, F.U., & Santos, E.M (2020). Determinant factors of market acceptance of the digital banking technology in the brazilian context. *Marketing & Tourism Review*, 6 (2), 2-36.
- Celik, H. (2008). What determines Turkish customers' acceptance of internet banking?. *International journal of bank marketing*, 26(5), 353-370.
- Cheng, T. C. E., Lam, D. Y. C., & Yeung, A. C. L. (2006). Adoption of internet banking: An empirical study in Hong Kong. *Decision Support Systems*, 42(3), 1558-1572.
- Chiou, J. S., & Shen, C. C. (2012). The antecedents of online financial service adoption: the impact of physical banking services on Internet banking acceptance. *Behaviour & Information Technology*, 31(9), 859-871.
- Chong, A. Y. L., Ooi, K. B., Lin, B., & Tan, B. I. (2010). Online banking adoption: an empirical analysis. *International Journal of Bank Marketing*, 28(4), 267-287.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology. *MIS quarterly*, 13(3), 319-340.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research*. Addison-Wesley.
- Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega*, 28(6), 725-737.

- Hanafizadeh, P., Keating, B. W., & Khedmatgozar, H. R. (2014). A systematic review of Internet banking adoption. *Telematics and informatics*, 31(3), 492-510.
- Hough, J., & Chan, K. (2018). Factors influencing the acceptance of digital banking: an empirical study in South Africa based on the enhanced technology acceptance model. *International Association for Management of Technology*, 1-21.
- Kiliari, G & Koesrindartoto, D.P. (2019). Factors influencing the adoption of digital banking in indonesia. *Proceeding Book of The 4th ICMEM 2019 and The 11th IICIES 2019*, 7-9 August 2019, Bali.
- Kunz, R. E., & Santomier, J. P. (2020). Sport content and virtual reality technology acceptance. *Sport, Business and Management: An International Journal*, 10(1), 83-103.
- Kusumawati, N., & Rinaldi, A.A. (2020). Trust Role in Acceptance of Digital Banking in Indonesia. *International Journal of Trade, Economics and Finance*, 11 (1), 13-18.
- Lai, V. S., & Li, H. (2005). Technology acceptance model for internet banking: an invariance analysis. *Information & management*, 42(2), 373-386.
- Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking. *Journal of Business Research*, 69(7), 2432-2439.
- Lee, M. C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic commerce research and applications*, 8(3), 130-141.
- Mukhopadhyay, J. P. (2021). Determinants of digital technology adoption and financial inclusion in India: Some empirical evidence. *Economic and Political Weekly*, 56(26), 70-76.
- Nguyen, T. O., Nguyen, T. K. C., & Nguyen, T. D. (2020). Factors influencing the intention to use digital banking in Vietnam - An approach based on the TAM model. *Journal of Banking Technology*, (141), 24-32.
- Ni, T.W (2020). Factors influencing behavioural intention towards adoption of digital banking services in Malaysia. *International Journal of Asian Social Science*, 10 (8), 450-457.
- Osatuyi, B., & Turel, O. (2019). Is it all about the first use? A study of the drivers of continued use of hedonic information systems. *Internet Research*, 29(4), 753-778.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of retailing*, 64(1), 12-40.
- Park, E., Kim, K. J., & Kwon, S. J. (2019). Understanding the role of attachment in the use of social networking services. *Telematics and Informatics*, 39, 12-24.
- Pham, T. H. (2024). Factors influencing the behavior of using digital banking services at Vietnamese commercial banks. Doctoral Dissertation in Economics, Banking Academy of Vietnam, Hanoi.
- Le, C. P., & Dao, D. H. (2019). Factors affecting the decision to use electronic banking services by individual customers at Agribank - Can Tho branch. *Journal of Industry and Trade*, 17(9), 240-249.
- Samartha, V., Shenoy Basthikar, S., Hawaldar, I. T., Spulbar, C., Birau, R., & Filip, R. D. (2022). A Study on the Acceptance of Mobile-Banking Applications in India - UTAUT Model. *Sustainability*, 14(21), 14506.
- Talukder, M., Quazi, A., & Sathye, M. (2014). Mobile phone banking usage behaviour: an Australian perspective. *Australasian Accounting, Business and Finance Journal*, 8(4), 83-104.

- Tan, G. W. H., Chong, C. K., Ooi, K. B., & Chong, A. Y. L. (2010). The adoption of online banking in Malaysia: An empirical analysis. *International Journal of Business and Management Science*, 3(2), 169-193.
- Tran, T. T., Le, D. L., Ngo, T. N. H., Pham, T. H. (2022). A study on the factors influencing the intention to use digital banking services at commercial bank branches in Bac Ninh province. *Banking Science & Training Review*, 240, 67-79.
- Nguyen, T. T., Nguyen, H. T., Mai, H. T., Tram, T. M. T (2020). Determinants of Digital Banking Services in Vietnam: Applying UTAUT2 Model. *Asian Economic and Financial Review*, 10(6), 680-697.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Windasari, N.A., Kusumawati, N., Larasati N., Amelia, R.P. (2022). Digital-only banking experience: Insights from gen Y and gen Z. *Journal of Innovation & Knowledge*, 7 (2), 100170.
- Yoon, H. S., & Steege, L. M. B. (2013). Development of a quantitative model of the impact of customers' personality and perceptions on Internet banking use. *Computers in Human Behavior*, 29(3), 1133-1141.
- Zhou, T. (2012). Understanding users' initial trust in mobile banking: An elaboration likelihood model perspective. *Computers in Human Behavior*, 28(4), 1518-1525.