


FACTORS INFLUENCING CUSTOMERS' PERCEPTION OF DIGITAL BANKING SERVICE QUALITY IN VIETNAM

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 14 April 2023</p> <p>Accepted 13 July 2023</p>	<p>Purpose: This paper examines the impacts of gender, education, and age on consumer's perception of digital banking service quality in the case of a branch of Bank for Investment and Development of Vietnam.</p> <p>Theoretical framework: Inspired by Parasuraman's five dimensions of service quality, this research defined four criteria measured digital banking service quality including the security, the ability, the convenience, and the supported policies for customers. Among different factors influencing consumers' perception, the authors selected to analyzed impacts of education, gender, and age of consumers.</p> <p>Design/Methodology/Approach: Primary data was collected from 200 customers who were randomly selected, then analyzed by descriptive statistics. The T-test, Cronbach Alpha, and ANOVA were used to test the differences of consumers' perception of digital banking service quality by their gender, age, and education.</p> <p>Findings: The analysis showed that consumers' perception of digital banking service quality clearly differed by their gender and age. Nevertheless, there was not a clear correlation between educational levels and their perception of security, convenience, and promotion policies of digital banking services.</p> <p>Research, Practical & Social implications: The findings imply that Vietnamese commercial banks need to improve the quality of digital banking services by: cooperating with Fintech companies to increase security, improving human resource quality, innovating technology and promoting communication activities.</p> <p>Originality/Value: This study indicated the differences of consumers' perception of digital banking service quality by their age, gender, and education. All the respondents of the survey are digital banking service users.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i7.2861</p>
<p>Keywords:</p> <p>Digital Banking; Consumer; Perception; Factor; Influence.</p> <div data-bbox="172 987 480 1234">  </div>	

FATORES QUE INFLUENCIAM A PERCEPÇÃO DOS CLIENTES SOBRE A QUALIDADE DOS SERVIÇOS BANCÁRIOS DIGITAIS NO VIETNÃ

RESUMO

Propósito: Este documento examina os impactos do gênero, da educação e da idade na percepção do consumidor sobre a qualidade dos serviços bancários digitais no caso de uma filial do Banco de Investimento e Desenvolvimento do Vietnã.

Estrutura teórica: Inspirada nas cinco dimensões de qualidade de serviço do Parasuraman, esta pesquisa definiu quatro critérios de medição da qualidade de serviço bancário digital, incluindo a segurança, a capacidade, a conveniência e as políticas suportadas para os clientes. Entre os diferentes fatores que influenciam a percepção dos consumidores, os autores optaram por analisar os impactos da educação, gênero e idade dos consumidores.

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Projeto/Metodologia/Abordagem: Foram coletados dados primários de 200 clientes que foram selecionados aleatoriamente e depois analisados por estatísticas descritivas. O teste T, Cronbach Alpha e ANOVA foram usados para testar as diferenças de percepção dos consumidores sobre a qualidade dos serviços bancários digitais por gênero, idade e educação.

Constatações: A análise mostrou que a percepção dos consumidores sobre a qualidade dos serviços bancários digitais é claramente diferente em função do gênero e da idade. No entanto, não houve uma correlação clara entre os níveis educacionais e a sua percepção de segurança, conveniência e políticas de promoção de serviços bancários digitais.

Investigação, implicações práticas e sociais: As conclusões implicam que os bancos comerciais vietnamitas precisam de melhorar a qualidade dos serviços bancários digitais através da cooperação com as empresas Fintech para aumentar a segurança, melhorar a qualidade dos recursos humanos, inovar a tecnologia e promover atividades de comunicação.

Originalidade/Valor: Esse estudo indicou as diferenças de percepção dos consumidores sobre a qualidade dos serviços bancários digitais por idade, gênero e educação. Todos os inquiridos são utilizadores de serviços bancários digitais.

Palavras-chave: Banco Digital, Consumidor, Percepção, Fator, Influência.

FACTORES QUE INFLUYEN EN LA PERCEPCIÓN DE LOS CLIENTES DE LOS SERVICIOS BANCARIOS DIGITALES EN VIETNAM

RESUMEN

Propósito: Este documento examina el impacto del género, la educación y la edad en la percepción del consumidor sobre la calidad de los servicios de banca digital en el caso de una filial del Banco de Inversiones y Desarrollo de Vietnam.

Estructura teórica: Inspirada en las cinco dimensiones de la calidad del servicio de Partesaman, esta encuesta definió cuatro criterios para medir la calidad del servicio de banca digital, incluyendo seguridad, capacidad, comodidad y políticas respaldadas por los clientes. Entre los diferentes factores que influyen en la percepción de los consumidores, los autores optaron por analizar los efectos de la educación, el género y la edad de los consumidores.

Proyecto/Metodología/Enfoque: Se recopilaron datos primarios de 200 clientes que fueron seleccionados al azar y luego analizados mediante estadísticas descriptivas. La prueba T, Cronbach Alpha y ANOVA se utilizaron para probar las diferencias en la percepción de los consumidores sobre la calidad de los servicios bancarios digitales por género, edad y educación.

Hallazgos: El análisis mostró que la percepción de los consumidores sobre la calidad de los servicios bancarios digitales es claramente diferente según el género y la edad. Sin embargo, no había una clara correlación entre los niveles educativos y su percepción de la seguridad, conveniencia y políticas para promover los servicios de banca digital.

Investigación, implicaciones prácticas y sociales: Las conclusiones implican que los bancos comerciales vietnamitas deben mejorar la calidad de los servicios bancarios digitales a través de la cooperación con las empresas Fintech para aumentar la seguridad, mejorar la calidad de los recursos humanos, innovar la tecnología y promover las actividades de comunicación.

Originalidad/Valor: Este estudio indicó las diferencias en la percepción de los consumidores sobre la calidad de los servicios bancarios digitales por edad, género y educación. Todos los encuestados son usuarios de banca digital.

Palabras clave: Banco Digital, Consumidor, Percepción, Factor, Influencia.

INTRODUCTION

With the development of the internet, a variety of gadgets, such as laptops, tablets, and smartphones have been widely adopted by organizations for their business operations (Dasgupta & Gupta, 2019). To survive in this changing landscape, business, especially commercial banks must adapt to this reality (Gobble, 2018). In Vietnam, a strong wave of

digital transformation has taken place in banking system in recent years, with most Vietnamese commercial banks either implementing or in the process of developing their digital transformation strategies (Minh Son Ha & Thuy Linh Nguyen, 2022).

In the digital era, traditional banking services no longer meet the changing consumer behavior. Customers increasingly prefer the simplicity and convenience of products and services, easily accessible through mobile devices and tablets. Recognizing the value of the digital revolution, commercial banks are moving away from the traditional model of operating through physical branches (Thuy Thu Nguyen et al., 2020). A number of researches indicated that digital transformation has a positive effect on banks' financial performance, as measured by return on assets and return on equity (Theiri & Hadoussa, 2023; Sreekanth & Kiran, 2022). However, the findings of Xin & Choudhary (2018) and Beccalli (2007) suggested that increased IT investment in banking services does not always lead to increased profits.

Digital transformation is considered as a factor that promotes to reshape the traditional interaction between customers and banks (Taiminen & Karjaluoto, 2015). Customers now have the ability to access multiple communication channels to interact with the banks and other customers easily through online customer care services (Verhoef et al., 2019). Most importantly, digital transformation enables banks to serve a large number of customers simultaneously and improves their business performance. Even though, the major obstacle for commercial banks is convincing customers to adopt digital banking services as an alternative for traditional ones (Laukkanen et al., 2007).

In the past decade, online banking has become popular in Vietnam, with a significant increase in the number of customers conducting banking transactions via smartphones. According to statistics from the State Bank of Vietnam, non-cash payment activities in 2021 experienced high growth rates, particularly through internet channels, with a 48.8% increase in quantity and a 32.6% increase in value. Mobile phone transactions increased by 76.2% and 87.5%, and payments via QR codes increased by 200% compared to 2020. The proportion of cash withdrawal transactions via ATMs out of total transactions processed through the NAPAS system dropped sharply from 26% in 2020 to 12% (Phan Thi Le Thuy, 2022). However, not all digital banking services can meet the increasing needs and expectations of customers (Le Thanh Hai, 2022). This is due to the lack of digital technology development in Vietnam (Phan Thanh Tam & Le Thu Thuy, 2023). Customers are not homogeneous, and their perceptions, expectations, and satisfaction regarding digital banking service quality vary. Therefore, it is essential to address the question of which factors, particularly those related to demographic

characteristics, influence consumers' perception of digital banking service quality. This understanding will help in planning, developing, and providing digital banking services that meet their expectations.

This paper examines the impact of gender, education, and age on consumer's perception of digital banking service quality in the case of a branch of Bank for Investment and Development of Vietnam.

THEORETICAL FRAMEWORK

Digital Banking Service Quality

Digital transformation refers to the integration of digital technology into all aspects of life, production, and business. This revolution has transformed the ways in which producers, traders and business deliver value to their customers. The advent of digital technologies has significantly impacted customer expectations, satisfaction, and perception. Today, more consumers have ability to connect and understand the possibilities offered by technology (Rupeika-Apoga & Wendt 2022; Laidroo et al., 2021). Mobile devices, apps, machine learning, automation, and other advancements enables customers to get what they desire almost instantly (Thuy Thu Nguyen et al., 2020).

In the banking sector, digital transformation is expected to drive banks towards more modern business models. It has the potential to allow banks to gather vast amount of data from various sources and utilize this data more efficiently for business decision making. Further, it could also enable banks to reduce costs, enhance operational efficiency and boost revenue through innovation in products, services and distribution channels (Diener & Spacek, 2021).

Digital banking involves digitizing services and operations. In other words, all traditional services such as withdrawals, money transfers, term deposits, demand deposits, saving and funding account management are all digitized and integrated into a single digital banking application. Customers only need to have internet connection to manage and carry out transactions (Skinner, 2014). Physical visits to the bank are no longer necessary, as customers can complete transactions digitally, and vice versa. Essentially, digital banking provides a technology platform for exchanging information and conducting transactions and services between banks and customers (Wewege & Thomsett, 2020).

The concept of service quality emerged in the 1980s as marketers realized that maintaining a competitive advantage required ensuring quality (Wal et al., 2002). Bolton and Drew (1991) defined service quality as the gap between actual service performance and

customers' expectations. Additionally, Parasuraman et al. (1988) considered service quality as the extent and direction of the gap between customers' perceptions and expectations. In the banking sector, Parasuraman et al. (1985) highlighted that customers' perception of quality is influenced by various gaps which lead to shortfalls in service quality. They argued that perceived quality is the result of the difference between customers' expectations and their actual perceptions of the service received.

The service quality of digital banking can be understood as customers' satisfaction with banking products and services, encompassing the various components and the disparity between expectations and satisfaction (Le Thanh Hai, 2020). A variety of researches have investigated relationship between digital banking service quality and customer's satisfaction (Kaur et al., 2021; Rahmatina et al., 2021; Thuy Thu Nguyen et al., 2020; Nadarajah Rajeshwaran, 2020). Almost all these authors adopted the five dimensions suggested by Parasuraman et al. (1988) as shown in the Table 1.

Table 1. Five dimensions of service quality

Dimension	Definition
Tangibles	Appearance of physical facilities, equipment, personnel and written materials.
Reliability	Ability to perform the promised service dependably and accurately.
Responsiveness	Willingness to help customers and provide prompt service.
Assurance	Employees' knowledge and courtesy and their ability to inspire trust and confidence.
Empathy	Caring, easy access, good communication, customer understanding and individualized attention given to customers.

Source: Adapted from Zeithaml et al. (1990)

Inspired from five dimensions of service quality suggested by Parasuraman et al. (1988), criteria used for evaluating digital banking service quality from customers' lenses in the present research include: the security of digital banking services, the ability to meet customers' needs of digital banking services, the convenience of using digital banking services and the bank's preferential policies for customers.

Impacts of Education, Gender and Age on Consumer Perception of Service Quality

Customer perception is shaped by their experiences and how they perceive the services what they are offered and ultimately by whether they actually are satisfied with their experiences or not. For small businesses, one way to gain a competitive edge is by providing genuine customer service and service quality (Wilson et al., 2016). Based on the dimensions of service quality, customers' perception of service quality can generally be divided into the perception of reliability, responsiveness, assurance, empathy and tangibles.

Demographic characteristics of customers are known as factors that influence their interest in specific services and their perception of service quality. Gupta and Bansal (2011) suggested that customers' gender, age, occupation, education level and income impacted their evaluation of bank service quality dimensions. In terms of age, Rajshekhar et al. (1991) found that older customers prioritized personal service and financial advice as important attributes of bank services. Similarly, Mattila et al. (2003) identified the elderly as a major barrier to internet banking adoption.

Education plays a significant role in the adoption of new technologies, as educated individuals tend to be more likely to adopt innovations (Donthu & Garcia, 1999). Internet users have been found to have above-average levels of education (Donthu & Garcia, 1999; Hoffman et al., 1996). In addition, Kotler (2010) suggested that an increase in educated individuals leads to a higher demand for service quality. Therefore, customers with higher educational levels may perceive service quality differently compared to those with lower education levels.

Gender is another factor that impacts consumers' perception of banking service quality. Stafford (1996) suggests service quality may be more important to women than to men when conducting business with banks. It was also noted within the research, that there are differences between men and women in terms of the degree of importance attached to service quality (Stafford, 1996). For example, a study conducted in Greece by Spathis et al. (2004) found that male clients have a more positive perception of service quality what they receive than do female ones. Also, there are several other examples in marketing literature indicating that female customers tend to rate service quality lower when compared to male customers (Lin, 2001; Tan, 2004; Juwaheer, 2011). In terms of internet usage, Dholakia et al. (2004) noted that the gender gap in internet adoption and use has been steadily declining as more women join the online community. Other researchers also suggested that although men and women are equally likely to use the internet for business and personal purposes, men are more likely to purchase products online (Van Slyke et al., 2002; Van den Poel & Buckinx, 2005).

RESEARCH METHODS

Bank for Investment and Development of Vietnam (BIDV) has been ranked as a pioneer in supplying digital banking services in Vietnam. Therefore, it was selected as a site to conduct this research. Secondary information was collected from a BIDV's branch located Hanoi capital. Primary data was collected by face-to-face at bank interviews office based on a semi-

structured questionnaire for 200 individual customers in 2022. The respondents were randomly selected based on the sampling formula of Yamane (1967) with a significant level of 5%.

The data was mainly analyzed based on descriptive statistics, in which Likert scale was applied as a crucial tool. Respondents in the survey were asked to state their level of agreement with those given statements from strongly agree to strongly disagree. In present study, the survey customers were asked to choose from a range of possible responses to a particular question or statement based on 5 levels of agreements which are applied from a similar research of Hyun Ju et al. (2007) including "strongly agree", "agree", "neutral", "disagree" and "totally disagree". Using the mean values displayed in the questionnaires, we assigned the following values to each scale point descriptor before performing any statistical analyses: 1.00 – 1.80 is "strongly disagree"; 1.81-2.60 is "disagree"; 2.61-3.40 is "no opinion" or "neutral"; 3.41-4.20 is "agree" and 4.20-5.00 is "strongly agree". The SPSS 20.0 for Windows was employed for the data analysis to answer the research objectives for the study.

As mentioned above, this study applies four factors for evaluating digital banking service quality. Each factor consists of many variables, so the exploratory factor analysis is used together with the Cronbach's alpha to reduce a set of many interdependent observed variables into a smaller set of variables (factors). The exploratory factor analysis creates more significant factors but still keeps most of the information content of the initial set of variables (Hair et al., 2010). In addition, t-test and analysis of variance (ANOVA) are applied to test the mean between groups of gender, ages, and education.

RESULTS AND DISCUSSION

Overview of the Respondents

The sample consisted of a total of 200 respondents, with 74.5 percent being female and 25.5 percent being male. This proportion is surprising because according to common belief in Vietnam, men are expected to adopt digital technology more quickly than women (Le Thanh Hai, 2020). The age range of the respondents varied from 20 to 53 years, with a mean age of 34.8 years. This age group is typically associated with individuals who have stable employment and a relatively steady income in Vietnam (Thuy Thu Nguyen et al., 2020). Regarding education, 7.0 percent of the respondents held a graduate degree, 39 percent had a bachelor's degree, 26.0 percent had a college degree, and 28 percent had a high school education or lower (Table 2).

Table 2. Statistical frequencies of gender, age and education

Variables	Frequency
1. Gender	
Male	25.5
Female	74.5
2. Age	
20-29	30.5
30-39	39.5
40-49	22.0
50 and more	8.0
3. Education	
Graduate	7.0
Bachelor	39.0
College	26.0
High school and lower	28.0

Source: Calculated from survey data

Factors Affecting Customers' Perception of Digital Banking Service Quality

To identify the significant variables that strongly describe customers' perception of digital banking service quality, an exploratory factor analysis with factor loading and the Cronbach's alpha was conducted and the results are presented in Table 3.

The perceived importance of attributes in digital banking services was determined through a principle component factor analysis with varimax rotation. The factor loadings represent the relationships between the factors and the observed variables. Higher absolute values of factor loadings indicate stronger relationships between the observed variables and the factors. In this study, a factor loading with an absolute value greater than or equal to 0.4 was considered significant, given a total sample size of 200. The results of the factor loadings analysis indicated that all observed variables were able to explain the relevant factors effectively.

Table 3. Importance of attributes in digital banking service quality

Variables	Factor loading	Cronbach's alpha
Factor 1. Security		.699
Personal transaction information is kept secret when using digital banking services	.524	
Digital transactions are as safe as over-the-counter	.658	
Digital banking can keep my personal financial information secure	.600	
Digital banking services are very reliable for any financial transaction	.438	
I am worried that I may lose the money in my account when digital banking services are faulty	.482	
Using digital banking services, my account might be stolen and used by bad guys	.743	
I am worried that if I lose my cell phone, my money in bank account will also be lost	.877	
Factor 2. Ability		.882

Transaction processing speed of services is fast	.634	
Duration for transaction processing of services is short	.742	
Transactions are very accurate	.862	
Factor 3. Convenience		.711
Digital banking is much easier than doing at the counter	.735	
The instructions for digital banking services are very clear and easy to understand	.631	
It's possible to do digital banking services any time (24/7)	.539	
It's possible to do digital banking services anywhere	.520	
Digital banking services are relevant to different devices	.805	
The website is stable and few errors happen	.877	
The website is an user-friendly design	.842	
Factor 4. Promotion policies		.801
The bank has regular promotions	.690	
The bank has great promotions	.569	
Appropriate approaches of promotions	.709	
Good communication	.810	

Source: Calculated from survey data

The relatively high Cronbach's alpha values indicated that the responses for each items within a set of questions were consistent, suggesting good reliability of the measurements. Particularly, when customers rated one item positively (e.g., short duration for transaction processing), they were likely to provide high ratings for other items as well (e.g., transaction accuracy). This consistency indicated that the items measure the same characteristic, enhancing the reliability of the measurements. The analysis identified four dimensions of digital banking service quality attributes, along with their respective Cronbach's alpha values: 1. The security of digital banking services ($\alpha = 0.699$); 2. The ability to meet customers' needs ($\alpha = 0.882$); 3. The convenience of using digital banking services ($\alpha = 0.711$); and 4. The bank's promotion policies for customers ($\alpha = 0.801$).

To examine the differences across four dimensions of digital banking service quality between male and female respondents, T-test were conducted (as shown in Table 4). Across all service quality dimensions, the mean scores of male respondents were higher than those of female ones, and these differences were statistically significant for security ($p < 0.001$), ability ($p < 0.001$), convenience ($p < 0.05$), and promotion policies ($p < 0.01$).

For analysis of age and education differences across the four dimensions of digital banking service quality, ANOVA was employed. The results revealed significant age group differences in two dimensions: security ($p < 0.01$) and promotion policies ($p < 0.05$). Specifically, the oldest age group rated the "security" factor lower compared to the younger age groups.

Table 4. Mean differences of consumers' perception toward digital banking service quality

Variables	Security	Ability	Convenience	Promotion policies
Gender				
Woman	3.51	3.96	4.04	2.53
Man	3.72	4.11	4.12	2.66
<i>T</i>	3.52***	4.25***	1.68*	2.78**
Ages				
20-29	3.54	3.99	4.04	2.51
30-39	3.52	4.00	4.09	2.59
40-49	3.75	4.02	4.05	2.61
50 and more	3.44	3.93	4.10	2.53
<i>F</i>	4.57**	0.68	0.66	1.43*
Education				
Graduate	3.74	4.00	4.09	2.71
Bachelor	3.47	3.99	4.02	2.54
College	3.60	4.00	4.13	2.57
High school and lower	3.64	4.01	4.06	2.57
<i>F</i>	3.65**	0.98	1.54*	1.34*

Note: * $p < 0.01$; ** $p < 0.05$; *** $p < 0.001$

Source: Calculated from survey data

Unsimilar to age, the significant differences in means were observed among groups of consumers with different educational levels across three dimensions of service quality, namely security ($p < 0.01$), convenience ($p < 0.05$), and promotion policies ($p < 0.05$). Nevertheless, there is no clear correlation between educational levels and their perception of security, convenience, and promotion policies of digital banking services.

In summary, the findings of this study align with the research conducted by Phuong Thanh Thi Tran et al. (2023), highlighting the importance of “security” and “accurate transactions” as crucial attributes influencing consumers' decision to use digital banking services. While there is limited research on the impact of demographic characteristics on consumers' perception of digital banking service quality, previous studies by Gupta and Bansal (2011), Donthu and Garcia (1999), Dholakia et al. (2004) and Kamal et al. (2023) have also indicated the influence of age, gender, educational level, and other demographic factors on clients' perception and expectation of service quality.

CONCLUSION

As digital banking services continue to gain popularity worldwide, it is crucial for banks to understand how consumers perceive the quality of these services and identify the factors that influence their perception. This research focused on examining the impact of gender, age, and educational level on consumers' perception of digital banking service quality in Vietnam.

The findings indicated that customers value an easy-to-use website and prefer digital banking services that provide a secure online system. The assurance of secure transactions and

protection of personal information emerged as key priorities for customers. Overall, the study revealed that consumers' perception of digital banking service quality varied based on their gender, age, and education, although some comparisons did not show significant differences. These findings suggest that Vietnamese commercial banks should revamp their strategies by placing greater emphasis on customer-centric approaches and improving the quality of their digital banking services. This may involve collaborating with Fintech companies to enhance security measures, enhancing the skills and expertise of their human resources, adopting innovative technologies, and implementing effective communication strategies to promote digital banking services.

However, it is important to acknowledge the limitations of this study. Firstly, the sample size was relatively small, with only 200 customers, which may not represent the entire customer base of commercial banks in Vietnam. Secondly, the survey was conducted at a single branch of the Bank for Investment and Development of Vietnam, limiting the generalizability of the conclusions. Lastly, certain demographic characteristics of consumers, such as occupation, income, and marital status, were not taken into account. These limitations highlight areas for further research and exploration in understanding consumers' perception of digital banking service quality.

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