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## International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies

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# Improving the Quality of E-Banking Services of Commercial Banks post Covid-19 Pandemic in Vietnam

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Paper ID: 14A1B

Volume 14 Issue 1

Received July 25, 2022

Received in revised from 17  
November 2022

Accepted November 27,  
2022

Available online 06  
December 2022

### Keywords:

E-banking; Commercial  
bank; Price; Tangible;  
Responsiveness;  
Empathy; Reliability;  
Service capacity; Policy  
and implications.

### Abstract

Developing e-banking services is an inevitable development trend in the context of the current industrial revolution 4.0. E-banking, with its notable features, is winning great affection from customers. It makes people's lives more convenient and transactions much more uncomplicated. So the benefits of using e-banking are many services. Therefore, the study has determined the importance of factors affecting the quality of e-banking services at commercial banks. With research data using survey data, 400 customers are using e-banking services at commercial banks, and the result is 365 votes; the rate is 91.25%. The research results show that evaluating the scale's reliability through Cronbach's Alpha coefficient, exploratory factor analysis - EFA, and drawing out six factors affecting the quality of e-banking services. The following factors are suggested, respectively, of policy implications for the price, tangible means, responsiveness, empathy, reliability, and service capacity.

**Discipline:** E-banking & Commercial bank.

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### Cite This Article:

Chung, H. T. T; Hung, N. V. (2022). Improving the Quality of e-Banking Services of Commercial Banks post Covid-19 Pandemic in Vietnam. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 14(1), 14A1B, 1-10. <http://TUENGR.COM/V14/14A1B.pdf> DOI: 10.14456/ITJEMAST.2022.254

## 1 Introduction

In the trend of global economic integration, Vietnam is gradually asserting its position in the world. Integration brings opportunities and challenges to the Vietnamese economy and banking industry. To survive and develop and simultaneously create their position in the competition, banks need to expand the scale of operation of traditional banking services, thereby developing and improving the quality of modern banking services. In Vietnam, banking services still have many interpretations, and the regulations on banking services are still inadequate. However, banking

services are understood broadly as all banking activities. Banking services provided by commercial banks to the economy are called banking services.

Electronic banking services seem indispensable in the current banking services that banks provide to customers. E-banking services bring the bank great benefits thanks to their convenience, accuracy, speed, and security, helping to attract a large number of customers, demonstrating its prestige, affirming its brand and position, and improving the bank's competitiveness. Developing e-banking services is an inevitable trend in the context of international economic integration. Not since the Covid-19 pandemic occurred did digital payments extend, but for a long time, in many countries around the world, not using cash has become a strongly promoted payment trend. With the problems analyzed above, the authors choose the topic of policy implications for improving the quality of e-banking services of commercial banks post Covid-19 Pandemic in Vietnam.

## 2 Literature Review

### 2.1 E-Banking Service

E-banking, also known as an international term, is E-Banking, which has been widely used in almost all banks in recent years. Currently, there are many different interpretations of the concept of e-banking services. E-banking is one of many modern technology applications of banks with the ability to process information online. E-banking services provide online payment and inquiry services for all customers, personal and business goods. E-banking is a bank service that allows customers to access remotely to: collect information, perform payment and financial transactions based on deposits at the bank, and register to use new services.

Thus, an E-banking service is a service the bank provides customers with new and traditional products and services through interactive electronic distribution channels such as the internet, telephone, and specialized online payment devices. Using e-banking services, customers can meet their banking service needs without going to the counter to meet a banker. In addition, performing e-banking service activities allows banks to quickly adapt to market changes and promptly adjust fees, interest rates, and exchange rates in line with market developments. Limiting risks caused by market price fluctuations brings economic benefits to banks and customers using e-banking services. This is an outstanding benefit compared to traditional banking.

### 2.2 Components of E-banking Service at Commercial Banks

Reliability (REL): Reliability refers to providing accurate, on-time, and reputable services. This requires consistency in service performance and honoring customer commitments and promises (Parasuraman et al., 1998; Darwish and Lakhtaria, 2020; Sundas et al., 2019). Besides, reliability is the ability to perform services as committed to customers and keep information and certain assets for customers through electronic transactions. Reliability has a positive relationship with e-banking services.

**Table 1:** Descriptive statistics from elements of Reliability (REL)

Contents	Code	N	Min	Max	Mean	Std. Deviation
Do you feel secure when using e-banking services?	REL1	365	1	5	2.88	0.922
The bank executes the transaction correctly, without errors	REL2	365	1	5	2.90	0.886
The bank keeps good customer information	REL3	365	1	5	2.88	0.873
Banks deliver services at the time they promised	REL4	365	1	5	2.89	0.890
The bank has a high reputation in the hearts of customers	REL5	365	1	5	2.90	0.861

Table 1 shows that the elements of reliability (REL) with the lowest answer is 1.0 and the highest is 5.0. The mean between the variables is around 3.0. The standard deviation of the data is approximately 1.0. This is scientifically evident in improving reliability (REL).

Empathy (EMP): Empathy is the care, considerate customer care, giving customers the best thoughtful treatment that can help customers feel that they are the "highest customer" of the bank and are always warmly welcomed post anytime, anywhere. The human factor is at the core of this success, and the more the bank cares about its customers, the more empathy will increase (Cronin & Taylor, 1992; Parasuraman et al., 1985; Spreng et al., 1996). That empathy is the care and concern for the customers of the staff. Besides, the bank staff are friendly and enthusiastic and treat all customers fairly. Empathy has a positive relationship with e-banking services.

**Table 2: Descriptive statistics from Empathy (EMP)**

Contents	Code	N	Min	Max	Mean	Std. Deviation
Bank staff always try to build good relationships and pay attention to each customer's needs	EMP1	365	1	5	3.02	1.360
Bank staff are enthusiastic and friendly to customers	EMP2	365	1	5	3.00	1.287
Bank employees serve all customers fairly	EMP3	365	1	5	3.08	1.383
The bank always asks, congratulates, and gives gifts to customers every holiday or personal event (Birthday, wedding, etc.)	EMP4	365	1	5	2.98	1.395

Table 2 shows empathy (EMP), with the mean between the variables being around 3.0. The standard deviation is nearly 1.0. This is scientifically evident in improving empathy (EMP).

Responsiveness (RES): This criterion measures the ability to solve problems quickly, effectively handle complaints, and be ready to help customers and respond to customer requests. Responsiveness is the desire and willingness of employees to provide timely service to customers. In other words, responsiveness is the response from service providers to what customers want (Yaghubi & Seyedin, 2015; Yousafzai & Yani-De-Soriano, 2012; Zeithaml et al., 1988). Responsiveness has a positive relationship with e-banking services.

Table 3 shows that the number of responsiveness (RES) with the lowest answer is 1.0, and the highest is 5.0. The mean between the variables is around 3.0 and is less than 1.0 apart. The standard deviation of the data is approximately 1.0, which is scientifically evident for improving responsiveness (RES).

**Table 3:** Descriptive statistics from Responsiveness (RES)

Contents	Code	N	Min	Max	Mean	Std. Deviation
The bank always satisfactorily solves all difficulties, questions, and complaints for customers	RES1	365	1	5	2.69	1.417
Customer waiting time for electronic transactions is short (1-2 minutes) at the Bank	RES2	365	1	5	2.98	1.360
Simple procedures for making electronic transactions at the Bank	RES3	365	1	5	2.73	1.313
The bank has a hotline for 24/7 service	RES4	365	1	5	2.81	1.314

Competence (COM): This is the factor that creates trust. Trust for customers is felt through professional service, good professional knowledge, polite demeanor, and good communication ability, so Customers feel secure every time they use the bank's services. Service capacity is expressed through professional qualifications to perform services (Zhou, 2012; Zeithaml & Bitner, 2000; Oliver et al., 1985). The ability to serve manifests when employees interact with customers, employees directly perform services, and the ability to research to capture relevant information necessary for serving customers. Competence has a positive relationship with e-banking services.

**Table 4:** Descriptive statistics from Competence (COM)

Contents	Code	N	Min	Max	Mean	Std. Deviation
Employees handle the business correctly, quickly, and efficiently	COM1	365	1	5	3.50	1.031
Bank staff have sufficient knowledge and professional capacity to advise and answer customers' inquiries	COM2	365	1	5	3.41	1.067
Bank staff are always polite, considerate, and welcoming to customers	COM4	365	1	5	3.39	1.075

Table 4 shows that the number of competence (COM) with the lowest answer is 1.0, and the highest is 5.0. The mean between the variables is around 3.0 and less than 1.0; this is scientific evidence for improving competence (COM).

Tangibles (TAN): This element is the external image of the facility, the attitude of the staff, documents, manuals, and the bank's communication system. Tangible means are reflected in the appearance, costumes of service staff, and facilities and equipment serving the service. In general, everything that the customer can see directly with the eyes and senses can affect this factor. Tangibles have a positive relationship with e-banking services (Yousafzai et al., 2010; Yiu et al., 2007; Gronroos, 1984).

Table 5 shows that the number of elements of the tangibles (TAN) with the lowest answer is 1.0, and the highest is 5.0. The mean between the variables is around 3.0 and is less than 1.0 apart. The standard deviation of the data is approximately 1.0, which is scientifically evident for improving the tangibles (TAN). Price (PRI): The price factor shows that when deposit rates are high, transaction fees are reasonable, and services are diversified, it will strongly impact service quality. When good service quality benefits customers, customers come to banks (Parasuraman et al., 1998; Darwish and Lakhtaria, 2020; Yaseen & El Qirem, 2018). The above research results confirm that

price is essential to service quality. Price or transaction costs have a positive relationship with e-banking services.

**Table 5:** Descriptive statistics from elements of the Tangibles (TAN)

Contents	Code	N	Min	Max	Mean	Std. Deviation
The bank has a spacious and convenient office for customers	TAN1	365	1	5	3.11	0.993
The bank has modern equipment and machinery	TAN2	365	1	5	3.15	1.018
Papers, forms, and vouchers used in the bank's transactions are designed to be simple and clear	TAN3	365	1	5	3.27	0.985
Bank staff have a very professional manner and dress neatly and politely when communicating with customers	TAN4	365	1	5	3.10	0.946
The bank has a reasonable and convenient arrangement of transaction counters for customers	TAN5	365	1	5	3.20	0.972

**Table 6:** Descriptive statistics from characteristics of the Price (PRI)

Contents	Code	N	Min	Max	Mean	Std. Deviation
Banks with competitive interest rates	PRI1	365	2	5	4.07	0.942
Flexibility to withdraw capital at the Bank	PRI2	365	1	5	3.49	1.081
Reasonable transaction fees at the Bank	PRI3		2	5	3.80	1.275
The bank has a variety of online products and services	PRI4	365	1	5	3.51	1.315

Table 6 shows that the price (PRI) is from 1.0 to the highest is 5.0. The mean between the variables is around 3.0, and the standard deviation of the data is approximately 1.0. and this is scientifically evident in improving the price (PRI).

### 3 Method

The research is carried out quantitatively based on previous studies, articles, and other documents on the quality of e-banking services. Theoretical analysis, categorization, systematization, and generalization of theories from which to draw scientific conclusions are the theoretical basis for the topic.

Conduct survey: The article is expected to distribute 400 survey questionnaires to individual customers at commercial banks. Surveys are sent directly to customers. Conduct the study in 2 months, from April to May 2022. Summary of survey questionnaires. Based on the obtained survey questionnaires, the article synthesizes the questionnaires, removes invalid votes, and uses valid votes to conduct multiple regression analysis.

In addition, the authors collect data that will be processed through SPSS 20.0 software with descriptive statistics tools, scale testing with Cronbach's Alpha, exploratory factor analysis (EFA), and linear regression analysis. Multiplication and ANOVA analysis (Hair et al., 2021).

Phase 1: Qualitative research by a hand-to-hand discussion with 5 experts in the field of e-banking (n = 5) to calibrate the scales of observed variables and build a survey questionnaire.

Phase 2: Quantitative research to conduct sampling, a survey by questionnaire with a sample of 400 customers using e-banking services ( $n = 400$ ). The data collected from the survey questionnaire was processed using Excel for raw data and then analyzed with SPSS 20.0 software.

After encryption and cleaning, the data will go through the following analysis steps:

Step 1: Evaluate the reliability of the scales: The reliability analysis of the scales is evaluated by Cronbach's Alpha coefficient, through which the inappropriate variables will be removed if the correlation coefficient - total correlation is less than 0.3 and the scale is less than 0.3. acceptable in terms of reliability if Cronbach's Alpha coefficient is more significant than 0.6.

Step 2: Factor analysis: Exploratory factor analysis to test the convergent and discriminant values of the component variables. Variables with factor loading less than 0.5 will be excluded. The scale will be accepted when the total variance extracted is greater than or equal to 50% and the Eigenvalue is greater than 1 (Hair et al., 2021).

Step 3: Test hypotheses: Analyze and test the model's ideas and overall fit to get a multivariable linear regression model, and the model is tested at a 5% significance level.

## 4 Result and Discussion

Improve the quality of customer service, and improve each bank's efficiency, reputation, and sustainable development. Developing e-banking services is always invested by commercial banks, applying digital technology, new technology, high technology, information, telecommunications, and technical infrastructure into products to enhance customer satisfaction. For those topics, sample descriptive statistics according to individual customer characteristics are used to describe the essential elements of the data collected from the study. In the research paper, the authors surveyed 400 commercial bank customers. Thus, the data being processed is only 365 votes, respectively 365 customers, due to the lack of information about 35 invalid votes. The following shows the results of some customer information.

In the early stages of the Covid-19 epidemic, in 2021, the number of digital payments skyrocketed. The Internet payment channel increased by nearly 50% in value, and smartphone payment increased by almost 160% over the same period in 2020. During the period of social isolation, electronic payment activities increased in both quantity and price transaction value. To develop e-banking, in addition to the legal corridor, the application of scientific and technological achievements is also significant. Technical and technological infrastructure in e-banking is invested and brings a lot of value to society.

Table 7 shows that the multiple linear regression results show that the normalized beta coefficients positively impact the quality of e-banking services. However, the normalized beta reflects the priority when implementing policy implications. The highest to the lowest normalized beta are price (0.409), tangibles (0.399), responsiveness (0.315), empathy (0.188), reliability (0.145), and power, respectively, service force (0.118). When the proposal is made, priority is given to price first and service capacity last. This result suggests that e-banking services open up a new

development channel for banking services. Through e-banking services, banks can quickly expand their operations and reach customers anytime, anywhere, without being limited in space and time.

**Table 7:** Testing the factors affecting E-banking service

Independent factors	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.685	0.124		5.502	0.000	-	-
REL	0.088	0.021	0.145	4.195	0.000	0.889	1.125
TAN	0.248	0.023	0.399	10.841	0.000	0.781	1.280
RES	0.134	0.015	0.315	9.193	0.000	0.899	1.112
PRI	0.205	0.017	0.409	11.856	0.000	0.887	1.127
EMP	0.081	0.015	0.188	5.283	0.000	0.836	1.196
COM	0.065	0.021	0.118	3.150	0.002	0.757	1.322

Research results show that prices have the highest standardized Beta coefficient of 0.409 of the six factors. Therefore, commercial banks need to deal with the following issues: Banks should create conditions for customers to have the ability to withdraw capital flexibly without interest deduction. Banks should have diversified e-banking products and services for customers. Products that bring new value to customers make the difference in savings products between banks and financial institutions, and transaction fees should be reviewed to be reasonable.

The research results show tangible vehicles have the second-highest standardized Beta coefficient of 0.399 out of the six factors. Therefore, the bank should take the following measures: Employees should have a very professional demeanor and dress neatly and politely when communicating with customers. Gradually strengthen the facility's technical quality through construction, renovation, and upgrading. Building a safe and secure network is essential for banks, especially e-banking. Cybersecurity is always a problematic issue in banking operations and is always given the top priority by banks to ensure that the correct transaction is established and to avoid forgery in the request to set up a banking transaction. Electronic goods, avoid granting the wrong transaction name, avoid access, intrusion, disclosure of transaction name, and transaction code.

The study results showed that the response level with a standardized Beta coefficient of 0.315 was the third highest among the six factors. Therefore, the bank needs to implement the following policies: The bank needs to satisfactorily resolve all customer difficulties, questions, and complaints. In particular, it is necessary to build a modern website to enhance the ease of use of e-banking services for customers. The challenges banks face when offering e-banking services are the usefulness of online transaction websites. Procedures for making transactions should be simple at the bank, and it is necessary to upgrade the benefit of the online transaction website, in addition to constantly updating the latest information on the bank's products and policies. Customers should pay attention to what the real needs of customers are when designing customer interaction programs. Online trading programs must be prepared to meet customers' needs.

Research results show that empathy has a standardized Beta coefficient of 0.188, the fourth highest of the six factors. Therefore, the bank needs to implement the following policies: The bank should have a policy of asking, congratulating, and giving gifts to customers every holiday or personal event such as a birthday or wedding... E-banking service is a type of service that is constantly improved. Software programs and operations change daily, so sometimes employees can't grasp it, quickly leading to confusion. Therefore, it is necessary to regularly organize training courses to provide professional guidance to staff. This is a helpful forum for acquiring new professional knowledge while exchanging experiences and practical difficulties when performing professional tasks and drawing lessons from experience.

The research results show that the reliability with a standardized Beta coefficient of 0.145 is the fifth highest among the six factors. Therefore, banks need to do the following: Banks need to create trust for customers to feel secure when using e-banking services. Build channels to resolve customer complaints and inquiries via email or phone so that customers can quickly get their questions and complaints answered. From there, the bank can manage arising problems and know the comments and wishes of customers to make appropriate and timely adjustments. Banks need to keep good confidentiality of customer information. The bank consolidates and strengthens the links between businesses, industries, and fields to have compatibility in technology, expand payment activities, create conditions to increase convenience, and ensure payment processing handling quickly, reducing waiting time for customers.

Research results show that service capacity has the lowest standardized Beta coefficient of 0.118. Therefore, the bank needs to do the following things: (1) Employees must be polite, considerate, and welcoming to customers. Sometimes, customers cannot use the service due to a system error or encounter when upgraded or repaired, but the bank is not notified in time. In those cases, the bank needs to give specific notices, temporarily provide services, and not charge service fees during this time. (2) Employees must have sufficient knowledge and professional capacity to advise and answer customers' inquiries. In addition, the security system of e-banking services should be regularly upgraded and maintained continuously to ensure the safety of technology systems and data and avoid internal threats from outside.

## 5 Conclusion

Electronic banking is also one of the distribution channels for banking products and services, bringing banks to homes, offices, schools, anywhere, and anytime. With a computer connected to the internet, customers will be provided with and guided to the bank's products and services. Currently, this service is very developed. Through internet banking, customers. Through survey results, analysis, and research on the evaluation model of e-banking service quality, there are six components: trust, response; service capabilities; empathy; tangible, and price. From the above results, chapter 5 has proposed six groups of policy implications: (1) Price policy, (2) Policy on tangible, (3) Policy on responsiveness, (4) Policy on empathy, (5) Policy on reliability, (6) Policy on service capacity. In addition, the study has given policy implications to improve the quality of e-



banking services at commercial banks. The critical influencing factor, the price factor, has the most significant influence and should be given top priority. In addition, the study also points out limitations in the research process and makes recommendations for further studies that need to be supplemented and perfected.

## 6 Availability of Data and Material

Data can be made available by contacting the corresponding author.

## 7 Acknowledgment

The authors would like to thank the board of directors of Lac Hong University for encouraging and supporting us throughout this research.

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