

Factors affecting customers' satisfaction on mobile banking service quality at Asia Commercial Joint Stock Bank

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Abstract:

This study examined the factors affecting customer satisfaction on the quality of mobile banking services at commercial banks like the Asia Commercial Joint Stock Bank (ACB). The model of A.P. Parasuraman, et al. (1988) [1] was applied as the theoretical background for this study. Measurement scale was validated with Cronbach's alpha, exploratory factor analysis (EFA). The results show that tangibles, reliability, and competency affect customers' satisfaction with mobile banking service quality. Some managerial implications were grasped: (i) it is necessary to update many utility functions to serve customers' need; (ii) it would be helpful to optimize the customer service process for quickness and accuracy; (iii) banking staff need to be equipped with more knowledge and skills to create a sense of trust while dealing with customers; (iv) Clear, complete, and simple information on transaction terms are required to commit that the information is the most accurate and true to give customers a feeling of peace of mind when doing transactions; and (v) Appropriate compensation policies are essential to create employee satisfaction so that employees can work effectively and productively.

Keywords: Asia Commercial Joint Stock Bank, customer satisfaction, mobile banking, reliability, service capacity, tangible means.

Classification number: 2.2

1. Introduction

In the 4.0 revolution, information technology has penetrated every aspect of social life, regardless of the field or industry. Indeed, information technology has been applied to banks, too. In order to meet the rising needs of customers, banks have also been applying information technology to banking activities with services such as internet banking, mobile banking, or SMS banking. According to the research results about e-banking market in Vietnam in January 2021 [2], there are now more than 120 million mobile subscribers in Vietnam with more than 75% able to register for mobile banking and online payment services. This is a springboard for the development of e-banking technology and is considered as a top priority mobile platform.

The benefits of mobile banking for users are many, for example, it provides many convenient services to help users avoid visiting bank branches directly while still being able to perform basic transactions such as money transfers, bill payments (air tickets, electricity bills), registration for opening cards, or online savings books.

To bring extremely valuable experiences to customers, ACB has been catching up with the development trend of integrating itself in many applications such as ACB One and ACB Business.

In order to improve customer experience and service quality when using ACB's mobile banking, it is critical to research, survey, and evaluate customer satisfaction to identify the factors affecting customer satisfaction on the quality of mobile banking services.

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The results of this research suggest recommendations to help ACB improve service quality, increase user experience, and increase ACB's competitive advantage in the financial and banking market.

2. Theory

2.1. Overview of service

According to P. Kotler (2003) [3], service is any action and result that one party can provide to another that is essentially intangible and does not result in ownership of something. Its product may or may not be tied to a physical product.

V.A. Zeithaml, et al. (2000) [4] defined services are behaviours, processes, and ways of doing something to create value for customers.

Meanwhile, N.H. Khai, et al. (2007) [5] believed that services are special products with many characteristics different from other goods. These characteristics may make services difficult to quantify and unrecognizable to the naked eye. The four basic characteristics of services are: intangibility, inhomogeneity, instorability, and inseparability.

2.2. Overview of service quality

A.P. Parasuraman, et al. (1988) [1], (1985) [6] said that service quality is the gap between customers' expectations and their perceptions when using the service. The above definition of Parasuraman is widely accepted by scientists and businesspeople and is used in research as well as in real business.

Based on the research of N.T.T. Loan, et al. (2011) [7], service quality has outstanding characteristics such as: superiority, product specificity, supply ability, and satisfaction of needs.

2.3. Overview of e-banking services

2.3.1. The concept of e-banking

According to T. Dube, et al. (2009) [8], electronic banking is a service that allows a bank's customers to access their accounts, receive the latest information about the bank and its products and services, and perform all financial transactions anytime and anywhere through the use of the bank's website.

N.H. Quan (2020) [9] explained that e-banking includes a series of banking transactions where customers can make transactions via electronic means

without having to visit branches. One advantage of electronic banking over traditional banking is the ability to automatically record transactions.

2.3.2. The concept of mobile banking service

Mobile banking is an innovative communication channel in which customers interact with the bank via mobile devices [10-12]. However, the dynamic market for mobile banking shows the need for a new definition to capture recent advances in the field.

Meanwhile, A.A. Shaikh, et al. (2015) [13] defined mobile banking is a product or service provided by a bank or microfinance institute for financial and non-financial transactions with mobile devices, specifically, mobile phones, smartphones, or tablets.

2.4. Customer satisfaction and the relationship between service quality and customer satisfaction

Customer satisfaction is the level of a person's sensory state resulting from comparing the results obtained from consuming a product or service with the customer's expectations [14].

O.C. Hansemark, et al. (2004) [15] said that customer satisfaction is the overall attitude of a customer towards a service provider, or emotional response to the difference between what the customer anticipates and what the customer expects or what they receive for the fulfilment of some need, goal, or want.

According to S. Thongsamak (2001) [16], customer satisfaction and service quality are two separate but related constructs. Service quality is an objective and cognitive concept, while satisfaction is a combination of subjective components that is based on feelings and emotions. Service quality is the most influential factor on customer satisfaction [17-19].

In addition, it is important to determine how the use of a mobile banking financial system could contribute to banks in term of customer satisfaction [20]. Some factors such as relative advantages, satisfaction, and trust have the most significant impact on customer loyalty [21]. Beside these, cloud services, security, e-learning, and service quality are four significant factors influencing customer satisfaction in using Internet banking services [22].

2.5. Research model of service quality

2.5.1. *Model SERVQUAL* Valarie Zeithaml, A. Parasuraman and Leonard Berry in 1988

The SERVQUAL model, also known as the five service quality improvement gap model, is a scale that captures and measures the service quality that customers have experienced. This model was developed and implemented by American experts in 1988 [1].

This model includes the following factors: responsiveness, service capability, approach, politeness, communication, credibility, safety, customer understanding, and tangible factors.

2.5.2. *Parasuraman and Malhotra's E-SERVQUAL model 2005*

A.P. Parasuraman, et al. (2005) [23] pointed out that customers' evaluation of website quality includes not only their experience during their interactions with the website, but also the service after their interactions (i.e., fulfilment and profit). Thus, the E-SERVQUAL model is generally defined to include all stages of a customer's interaction with a website, for example, the extent to which a website facilitates shopping, purchasing, and shipping. This model includes the following factors: reliability, responsiveness, access, flexibility, ease of navigation, efficiency, assurance/trust, security/privacy, price knowledge, website aesthetics, and customization/personalization.

3. Research process and research model

3.1. Research process

Preliminary research (qualitative research) was carried out for the purpose of establishing and completing the questionnaire. The study was conducted through a direct survey of customers who have used or currently use mobile banking at ACB.

In-depth interviews included questions based on theory and practical information in order to discover more information around the research topic. After completing the questionnaire, it was evaluated for reasonableness, then adjusted and perfected.

A formal survey called "Factors affecting customer satisfaction about the quality of mobile banking services at Asia Commercial Joint Stock Bank" was conducted with the completed questionnaire. The collected data was cleaned, coded, and analysed through SPSS software.

3.2. Research model and hypotheses (Fig. 1)

Hypothesis H1: Tangibles have a positive relationship with customer satisfaction on the quality of mobile banking services.

Hypothesis H2: Reliability has a positive relationship with customer satisfaction on the quality of mobile banking services.

Hypothesis H3: The level of responsiveness has a positive relationship with customer satisfaction on the quality of mobile banking services.

Hypothesis H4: Service capacity has a positive relationship with customer satisfaction on the quality of mobile banking services.

Hypothesis H5: The level of empathy has a positive relationship with customer satisfaction on the quality of mobile banking services.

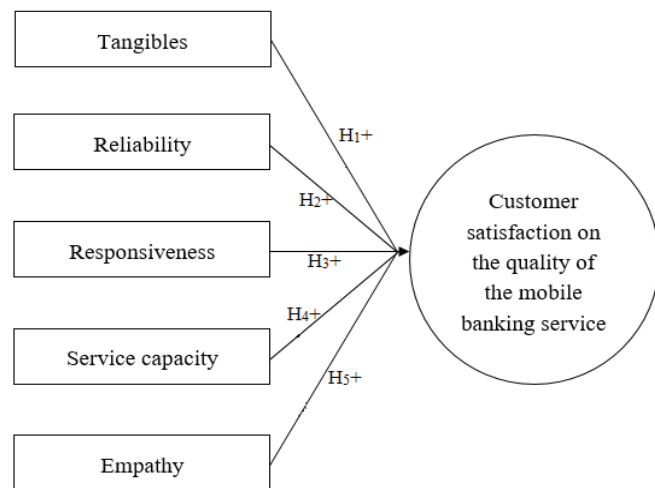


Fig. 1. The research model.

4. Results

The survey was conducted in over the period from February to April 2022 and implemented through the distribution of questionnaires directly to customers who have been or are currently using ACB's mobile banking service. As a result, there were

181 satisfactory surveys from the 200 questionnaires distributed. The data was analysed and the results reported.

4.1. Reliability test results by Cronbach's alpha (Table 1)

Table 1. Cronbach's alpha results.

Numerical order	The scale	Number of observed variables	Cronbach's alpha
1	Tangible	05	0.716
2	Reliability	05	0.804
3	Responsiveness	05	0.865
4	Service capacity	04	0.806
5	Empathy	05	0.782
6	Customer satisfaction	05	0.767

Source: Survey "Factors affecting customer satisfaction about the quality of mobile banking services at Asia Commercial Joint Stock Bank" in 2022.

After completing the scale test using Cronbach's alpha coefficient, the number of observed variables remaining were 24, keeping 5 independent variables unchanged (tangible, reliability, responsiveness, service capacity, empathy) and the dependent variable (customer satisfaction).

4.2. Exploratory factor analysis (EFA) results

4.2.1. EFA analysis of independent variables

Table 2. List of coefficients.

Coefficient	Value
KMO	0.827
Sig. Bartlett's test	0.000

The coefficient of KMO in the analysis was $0.827 > 0.5$, showing that the factor analysis results were appropriate (Table 2).

Bartlett's test has a sig. coefficient of $0.000 < 0.05$, showing that the results of factor analysis possessed statistical significance.

With eigenvalues of $1.008 > 1$, exploratory factor analysis (EFA) extracted 5 factors from 21 observed variables with a total extracted variance of

$63.871\% > 50\%$ (satisfactory), that is, 5 factors from the above factors extracted 63.871% of the variance of the observed variables.

Table 3. Exploratory factor analysis results.

	Factor				
	1	2	3	4	5
TC04	0.801				
TC03	0.774				
TC02	0.762				
TC05	0.702				
TC01	0.654				
DU05		0.787			
DU01		0.763			
DU02		0.730			
DU03		0.653			
NL04			0.725		
NL02			0.724		
NL01			0.686		
NL03			0.632		
HH05				0.784	
HH01				0.784	
HH04				0.733	
HH03				0.696	
DC05					0.760
DC02					0.755
DC01					0.669
DC03					0.542

Source: Survey "Factors affecting customer satisfaction about the quality of mobile banking services at Asia Commercial Joint Stock Bank" in 2022.

After conducting exploratory factor analysis (EFA), there were 5 groups of factors extracted from the model (Table 3):

+ Factor 1: Including 5 observed variables: TC01, TC02, TC03, TC04, TC05, the name reliability is retained, and the symbol is TC.

+ Factor 2: Including 4 observed variables: DU01, DU02, DU03, DU05, the name response is kept, and the symbol is DU.

+ Factor 3: Including 4 observed variables: NL01, NL02, NL03, NL04, the name capacity is kept, and the symbol is NL.

+ Factor 4: Including 4 observed variables: HH01, HH03, HH04, HH05, the name is kept tangible, and denoted HH.

+ Factor 5: Including 4 observed variables: DC01, DC02, DC03, DC05, the name is empathy kept, and the symbol is DC.

4.2.2. Results of dependent variable analysis (Table 4)

The KMO coefficient in the analysis was $0.728 > 0.5$, showing that the factor analysis results were appropriate.

Bartlett's test had a sig. coefficient of $0.000 < 0.05$, showing that the results of factor analysis ensured statistical significance.

The eigenvalue coefficient of the satisfaction factor was $2.592 > 1$ and the extracted variance was $51.843\% > 50\%$. Thus, the extracted variance met the requirements.

Table 4. Dependent variable analysis results.

Observed variables	Factor 1
HL03	0.766
HL02	0.747
HL05	0.732
HL01	0.698
HL04	0.652

Source: Survey "Factors affecting customer satisfaction about the quality of mobile banking services at Asia Commercial Joint Stock Bank" in 2022.

4.3. Correlation analysis results (Table 5)

Considering the correlation between the dependent variables and independent variables, it was shown that there was a correlation between the dependent variable customer satisfaction and the independent variables. Specifically, the correlation between satisfaction (HL) with trust was ($r=0.181$), with response was ($r=0.111$), with competence was ($r=0.437$), with tangible means was ($r=0.602$), and with empathy was ($r=0.120$).

Sig. coefficient: The Pearson correlation of independent variables TC, NL, and HH with the dependent variable HL was less than 0.05. Thus,

there was a linear relationship between these independent variables and the satisfaction variable.

Sig. coefficient: The Pearson correlation of independent variables DU and DC with dependent variable HL is greater than 0.05. Thus, there was no linear relationship between these independent variables and the satisfaction variable.

The independent variables were not correlated with each other because $\text{Sig.} = 1.000 > 0.05$, so the model does not have multicollinearity.

Table 5. Correlation coefficients.

	TC	DU	NL	HH	DC	SHL
Sig. (2-tailed)	TC	1.000	1.000	1.000	1.000	0.015
	DU	1.000	1.000	1.000	1.000	0.138
	NL	1.000	1.000	1.000	1.000	0.000
	HH	1.000	1.000	1.000	1.000	0.000
	DC	1.000	1.000	1.000	1.000	0.108
	SHL	0.015	0.138	0.000	0.000	0.108

Source: Survey "Factors affecting customer satisfaction about the quality of mobile banking services at Asia Commercial Joint Stock Bank" in 2022.

4.4. Regression analysis

Table 6. Model summary.

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Durbin-Watson
1	0.766 ^a	0.586	0.579	0.64848853	2.051

An adjusted R^2 of 0.579 shows that 57.9% of the variation in customer satisfaction in banking services is explained by the three independent variables TC, NL, and HH included in the model (Table 6).

Table 7. Regression results.

Model	Beta	Std. Error	Standardized Coefficients Beta	t	Sig.	VIF
1	Constant	4.072E-16		0.000	1.000	
	TC	0.181	0.181	3.735	0.000	1.000
	NL	0.437	0.437	9.050	0.000	1.000
	HH	0.602	0.602	12.457	0.000	1.000

Source: Survey "Factors affecting customer satisfaction about the quality of mobile banking services at Asia Commercial Joint Stock Bank" in 2022.

Considering the table of regression weights, the β weights of these variables are statistically significant (Sig.=0.00<0.05). Therefore, variables HH, TC, and NL had an impact on the variable HL.

Regression equation: $HL = 0.602HH + 0.437NL + 0.181TC$

Thus, it can be concluded that the theoretical model fitted the data. The results showed that there are three independent variables that have a significant impact on the dependent variable (Sig.<0.05) (Table 7).

5. Conclusions and recommendations

5.1. Conclusions

The objective of this study was to analyse the factors affecting customer satisfaction on the quality of mobile banking services at ACB.

The results of Cronbach's alpha test and exploratory factor analysis (EFA) showed the research model has 5 factors: tangible means (HH), service capacity (NL), and reliability (TC), empathy (DC), and responsiveness (DU). Thereby, it shows that the initial research model is appropriate.

Next, from the above test results, the author analysed their correlation. After analysis, the model was left with only three groups of factors: tangible means (HH), service capacity (NL), and reliability (TC). This is because the response (DU) and empathy (DC) groups had a sig. coefficient > 0.05.

One-way ANOVA and the independent t-test were conducted to compare the difference in customer evaluations according to 6 demographic variables: gender, education level, occupation, income level, time of communication/translation, and transaction level. The results of testing in customer satisfaction show that there is no difference in satisfaction for the above 6 demographic groups.

5.2. Recommendations

5.2.1. For tangible media

Tangible means had the strongest impact on customer satisfaction ($\beta=0.602$). Research results show that customers are satisfied with the tangible means of mobile banking service quality at ACB. In particular, modern facilities will be highly appreciated by customers.

However, in order to achieve higher customer satisfaction, ACB needs to maintain and focus on investing and improving mobile banking such as arranging its presentation in a more scientific and attractive way, integrating new functions, becoming more convenient and easier to recognize, and creating a more modern and advanced system.

In addition, the attire worn by those that support this department should be neat and polite, which also contributes to customer satisfaction when transacting. ACB needs to improve the design of their application interface to be simpler and easier to understand while making it easier for new and existing customers to use even if they are not tech-savvy.

Moreover, ACB needs to design appropriate, intuitive icons with service functions for customers that are easily distinguished and usable. In addition, it is necessary to update many utility functions to serve the basic, daily needs of its customers.

5.2.2. For service capacity

Service capacity has the second strongest impact on customer satisfaction ($\beta=0.437$). According to the research results, customers are satisfied with the service capacity of ACB.

In order to further improve customer satisfaction, ACB needs to regularly organize professional training courses for employees to help equip them with the knowledge and skills to best serve customers.

From there, it would be helpful to optimize the customer service process for quickness and accuracy.

In addition, the Board of Directors should have appropriate compensation policies in place to create employee satisfaction so that employees can work effectively and productively.

5.2.3. For reliability

Reliability had the third strongest impact on customer satisfaction ($\beta=0.181$). According to the research results, customers are satisfied with the reliability of ACB. When transacting, customers felt that their information was kept confidential and safe.

In addition, ACB needs to provide clear, complete, and simple information on transaction terms, committing that this information is the most accurate

and true to give customers a feeling of peace of mind when transacting.

Besides these recommendations, ACB needs to promote their brand more widely in order to increase brand recognition, trust, and satisfaction in the bank from its customers.

Finally, employees also need to be equipped with more knowledge and skills to create a sense of trust while dealing with customers.

CRediT author statement

Tran Minh Hieu: Methodology, Research model, Research scales, Writing - Original draft preparation, Reviewing; Le Phuoc Huy: Reviewing, Surveying data, Analysing results, Writing.

COMPETING INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

REFERENCES

- [1] A.P. Parasuraman, V.A. Zeithaml, L.L. Berry (1988), "SERVQUAL: A multiple item scale for measuring consumer perception of service quality", *Journal of Retailing*, **64**(1), pp.12-40.
- [2] Mibrand (2021), "Research results on Vietnam e-banking market january 2021", <http://mibrand.vn/we-share/ket-qua-nghien-cuu-ve-thi-truong-e-banking-viet-nam-thang-12021>, accessed 17 August 2022 (in Vietnamese).
- [3] P. Kotler (2003), *Customer Relationship Management*, Prentice Hall, 738pp.
- [4] V.A. Zeithaml, M.J. Bitner (2000), *Services Marketing: Integrating Customer Focus Across the Firm*, Irwin McGraw-Hill, 620pp.
- [5] N.H. Khai, V.T. Hien (2007), *Vietnam's Service Industries: Competitiveness and International Economic Integration*, Statistical Publishing House, 335pp (in Vietnamese).
- [6] A.P. Parasuraman, V.A. Zeithaml, L.L. Berry (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, **49**, pp.44-50, DOI: 10.1177/002224298504900403.
- [7] N.T.T. Loan, P.K.P. Hoang (2011), "Research on improving customer satisfaction using services at Agribank Vietnam - Binh Duong province branch", *Master's Thesis in Economics*, University of Economics Ho Chi Minh City, 66pp (in Vietnamese).
- [8] T. Dube, C. Tofara, R. Langton (2009), "Adoption and use of internet banking in Zimbabwe: An exploratory study", *Journal of Internet Banking and Commerce*, **14**(1), pp.1-13.
- [9] N.H. Quan (2020), "Factors affecting the satisfaction of e-banking service quality: A study at Tien Phong Commercial Bank", *Journal of International Economics and Management*, **125**, pp.29-43 (in Vietnamese).
- [10] U. Akturan, N. Tezcan (2012), "Mobile banking adoption of the youth market: Perceptions and intentions", *Marketing Intelligence & Planning*, **30**(4), pp.444-459, DOI: 10.1108/02634501211231928.
- [11] M.N. Masrek, I.E. Khairuddin, N.A. Uzir (2012), "Trust in mobile banking adoption in Malaysia: A conceptual framework", *Journal of Mobile Technologies, Knowledge and Society*, **2012**, DOI: 10.5171/2012.281953.
- [12] K.H. Shih, C.J. Chang, B. Lin (2010), "Assessing knowledge creation and intellectual capital in banking industry", *Journal of Intellectual Capital*, **11**(1), pp.74-89, DOI: 10.1108/14691931011013343.
- [13] A.A. Shaikh, H. Karjaluoto (2015), "Mobile banking adoption: A literature review", *Telematics and Informatics*, **32**(1), pp.129-142, DOI: 10.1016/j.tele.2014.05.003.
- [14] P. Kotler (2001), *Marketing Management*, Pearson Education Canada, 718pp.
- [15] O.C. Hansemark, M. Albinsson (2004), "Customer satisfaction and retention: The experiences of individual employees", *Managing Service Quality: An International Journal*, **14**(1), pp.40-57, DOI: 10.1108/09604520410513668.
- [16] S. Thongsamak (2001), "Service quality: Its measurement and relationship with customer satisfaction", *Journal of Service Marketing*, **14**(1), pp.9-26.
- [17] J.J. Cronin, S.A. Taylor (1992), "Measuring service quality - A reexamination and extension", *Journal of Marketing*, **56**(3), pp.55-68, DOI: 10.2307/1252296.
- [18] U. Yavas, Z. Bilgin, D.J. Shemwell (1997), "Service quality in the banking sector in an emerging economy: A consumer survey", *International Journal of Bank Marketing*, **15**(6), pp.217-223, DOI: 10.1108/02652329710184442.
- [19] A.A. Kemal (2019), "Mobile banking in the government-to-person payment sector for financial inclusion in Pakistan", *Information Technology for Development*, **25**(3), pp.475-502, DOI: 10.1080/02681102.2017.1422105.
- [20] V. Bhatt, D. Nagar (2021), "An empirical study to evaluate factors affecting customer satisfaction on the adoption of mobile banking track: Financial management", *Turkish Journal of Computer and Mathematics Education*, **12**(10), pp.5354-5373, DOI: 10.17762/turcomat.v12i10.5338.
- [21] A. Esmaili, I. Haghighi, V. Davidavi ienê, et al. (2021), "Customer loyalty in mobile banking: Evaluation of perceived risk, relative advantages, and usability factors", *Engineering Economics*, **32**(1), pp.70-81, DOI: 10.5755/j01.ee.32.1.25286.
- [22] F. Li, H. Lu, M. Hou, et al. (2021), "Customer satisfaction with bank services: The role of cloud services, security, e-learning, and service quality", *Technology in Society*, **64**, DOI: 10.1016/j.techsoc.2020.101487.
- [23] A.P. Parasuraman, V.A. Zeithaml, A. Malhotra (2005), "E-S-Qual: A multipleitem scale for assessing electronic service quality", *Journal of Service Research*, **7**(3), pp.213-233, DOI: 10.1177/1094670504271156.