

# Customer Satisfaction with Mobile Banking Service during COVID-19: The Roles of Security and Assurance

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**Abstract:** Vietnam has witnessed the growth of mobile banking services as a self-service technology during the pandemic of COVID-19 as people are encouraged to have online shopping addressing the social distancing regulations. This study aims to understanding of dimensions of mobile banking service quality and their impact on customer satisfaction in Ho Chi Minh city. Also, it explores the role of gender in customers' perception of mobile banking service quality and satisfaction. The study employs a quantitative approach with a survey of 229 respondents. Statistical analysis is utilised to test data reliability and validity and hypotheses. The findings show that security and assurance were key predictors of customer satisfaction with mobile banking service quality during COVID-19. Also, female respondents had lower degree of customer satisfaction than male respondents. Practical implications were discussed to improve the service quality and increase consumer satisfaction.

**Keywords:** Mobile Banking Service Quality, Customer Satisfaction, Self-Service Technology

## 1. Introduction

In 2021, Vietnam had about 68.72 million users of the Internet, and 154.4 million mobile connections (Kemp, 2021). About 94 per cent of these Internet users spend 7 hours daily to doing their online activities. This leads to the fierce growth of the Internet-based business such as mobile banking service which is understood as financial services delivered via mobile networks and performed on a mobile phone (Alampay, Moshi, Ghosh, Peralta, & Harshanti, 2017). Predictably, financial transactions using mobile phone among Vietnamese users would increase by 400 per cent in 2025 since the development of fintech and banking sectors (Vien Thong, 2020). Customers of mobile banking would feel more convenient by reducing their times to visit bank office and having quick and safe transactions. In particular, during the COVID-19 mobile banking is considered as an appropriate method to support customers doing their online shopping. Though the increasing of mobile banking has been witnessed, little is known about how customers are satisfied with its service quality (Dinh & Pickler, 2012; Alang & Nguyen, 2022). To address this gap, this study aims to understand dimensions of mobile banking service quality and their impact on customer satisfaction in Ho Chi Minh City. Also, it explores the role of gender in their perception of mobile banking service quality and satisfaction. The research questions are proposed as following: 1/ What and how dimensions of mobile banking service quality affect customer satisfaction? 2/ Does gender moderate the effect mobile banking service quality on customer satisfaction?

## 2. Theoretical Background

### 2.1 Understanding Mobile Banking Services

Mobile banking is known as the most advanced mobile technology innovations as it delivers financial services through mobile phone (Laukkanen, 2016). Several concepts have been used to describe mobile banking such as branchless banking (Ivatury & Mas, 2008), m-banking, m-transfer, m-payment, and m-finance (Donner, 2008). According to (Kim, Shin, & Lee, 2009), mobile banking should not include using a banking service from a laptop as their user interface is the same as the figure for desktop PCs. Accessing via laptops are categorized as online/Internet banking. Mobile banking provides several financial and nonfinancial services describing in Table 1.

**Table 1:** Main services offered through mobile banking.

Financial services	Non-financial services
Bill payments	Balance enquiry
Peer-to-peer payments	Mini-bank statement
Fund transfers	PIN change
Remittance	Check/book request
Shopping and donations	Due alerts for payments
Mobile balance recharge	Locate ATMs

Source: Created by the authors.

### 2.2 Customer Satisfaction

Customer satisfaction refers to the feeling of customer concerning the product/service used (Spreng & Mackoy, 1996). It is experience of users when the purchase process meets their desires, aspirations, and goals in a friendly and interesting manner (Oliver, 1997); or simply a sense of satisfaction or dissatisfaction arising from the contrast of

product/service results with the expectation (Kotler, 2000; Le, Alang, & Tran, 2021).

### 2.3 Dimensions of Mobile Banking Service Quality

Earlier studies revealed that service quality consists of technology performance, functionality, corporate images, physical quality, interactive quality, and corporate quality (Berry & Parasuraman, 1993; Bitner, 1990; Cronin & Taylor, 1992; Grönroos, 1984; Lehtinen & Lehtinen, 1991). With regard to mobile phone service quality, researchers suggest the model of self-service technology quality with 6 dimensions presented in Table 2.

**Table 2:** Dimensions of mobile banking quality service

Mobile banking service dimensions	Definition
Functionality	Functionality depicts specific features of mobile banking service and assesses their sufficiency in providing short-term services and the outcome accuracy.
Simplicity	Simplicity presents specific characteristics of mobile banking and evaluates the ease of such distribution means usage.
Security	Security/privacy involves safety concerns describing customers' reliance while using self-service technology.
Design	Design refers to the first impression of users as it presents initial information when using the services.
Responsibility	If the damage undergone by a customer who used a m-banking service is due to a failure from the firm, it is a direct duty to satisfy the customer's demand and implement compensation in accordance with the losses suffered by the users.
Assurance	Assurance is defined as the safety of mobile banking transactions, knowledge adequateness of the service providers when answering customers' questions in addition to courteous behaviour.

Source: Created by the authors.

### 2.4 Moderating Impact of Gender on Relationship between Mobile Banking Service and Customer Satisfaction

Gender has been identified as a moderator factor of customer satisfaction in relation to their evaluation of service quality (Teeroovengadam, 2020). It claims that male and female customers have different perception of satisfaction with specific dimension of service quality. For example, evidence show that female customers are more likely to be satisfied with environmental quality dimension of banking services (Teeroovengadam, 2020). Hence, it suggests that, to determine customer satisfaction with service encounters, gender difference is one of the most influential aspects to bear in mind (Karatepe, 2011).

### 2.5 Proposed Hypotheses

H1: Mobile banking service quality measured by six dimensions (e. g., functionality, simplicity, security, design, responsibility, and assurance) has a significantly positive effect on customer satisfaction.

H2: Gender has a significant effect on customer satisfaction.  
H3: Gender significantly moderates the casual relationship between mobile banking service quality and customer satisfaction.

## 3. Research Design

The study was conducted in the quantitative approach to test hypotheses. Data collection was implemented with the non-probability technique, including convenient sampling and snowball technique. The mass survey was distributed through social media with the designed Google form from 2/2021 to 5/2021.

Partial least squares structural equation modelling (PLS-SEM) and bootstrapping techniques were conducted in the SmartPLS software version 3.3.2 to test all hypotheses in the conceptual framework.

Mobile banking service quality was measured by six second-order latent variables: functionality, simplicity, security, design, responsibility, and assurance. The hierarchical component model with higher-order constructs in the form of reflective-reflective specification was built to reduce the number of path model relationships and gain model parsimony (Sarstedt, Hair, Cheah, Becker, & Ringle, 2019).

## 4. Results

There were 229 answer sheets collected from respondents, including 209 valid responses and 20 invalid responses (i. e., deleted due to missing data and low variation).

Table 6 and Figure 1 shows that mobile banking service quality was measured by two second-order variables, named security and assurance. Item selection and concept selection were conducted to satisfy all benchmarks (e. g., cronbach's alpha, composite reliability, and average variance extracted).

Table 4 and Table 5 shows acceptable discriminant validity among latent variables (Sarstedt et al., 2019). Security and assurance were significant (p-value ≤ 0.001) reflective-reflective second-order constructs of mobile service quality (β = 0.893 and β = 0.886; respectively). Mobile banking service quality had a significantly positive impact on customer satisfaction (β = 0.454, p-value ≤ 0.001). Gender was insignificant moderator of the causal relationship between mobile banking service quality and customer satisfaction. However, gender had significantly negative impact on customer satisfaction (β = -0.455, p-value ≤ 0.001). In other words, female respondents had lower degree of customer satisfaction than male respondents (see Table 7 and Figure 1).

**Table 3:** Demographics of the respondents.

Demographics	Categories	Respondents	Percentage (%)
Frequency of use	2-3 times per week	128	61.24
	More than 3 times per week	81	38.76
Gender	Male	93	44.5
	Female	116	55.5
Age	Under 18	3	1.44
	From 18 to 25	96	45.93
	From 26 to 35	80	38.28
	From 36 to 45	22	10.53
	From 46 to 55	4	1.91
	Above 55	4	1.91
Education	High school	10	4.78
	Undergraduate	185	88.52
	Postgraduate	14	6.7
Total		209	100

Source: Created by the authors.

**Table 4:** Discriminant validity (Heterotrait-Monotrait Ratio).

	Heterotrait-Monotrait Ratio (HTMT)	
	Mobile banking service quality	Customer satisfaction
Mobile banking service quality	Criteria < 0.9	
Customer satisfaction	0.52	

Source: Created by the authors.

**Table 5:** Discriminant validity (Fornell-Larcker Criterion).

	Fornell-Larcker Criterion	
	Mobile banking service quality	Customer satisfaction
Mobile banking service quality	0.77	
Customer satisfaction	0.44	0.85

Source: Created by the authors

**Table 6:** Checking reliability and validity

	Mean	SD	Factor loading	Cronbach's alpha	rho_A	CR	AVE	R-Squared
Threshold				≥ 0.7	≥ 0.7	≥ 0.7	≥ 0.5	
Mobile banking service quality				0.9	0.9	0.92	0.59	
Security*				0.9	0.9	0.93	0.76	0.8
SEC1	4.13	0.9	0.86					
SEC2	4.33	0.88	0.88					
SEC3	4.2	0.9	0.92					
SEC4	4.04	1	0.85					
Assurance*				0.87	0.87	0.91	0.72	0.78
ASU4	4.11	0.76	0.76					
ASU5	3.87	0.93	0.85					
ASU6	3.96	0.83	0.87					
ASU7	3.96	0.81	0.91					
Customer satisfaction				0.8	0.8	0.88	0.72	0.4
SATIS1	4.03	0.75	0.8					
SATIS2	4.18	0.65	0.89					
SATIS3	4.12	0.73	0.84					

Source: Created by the authors

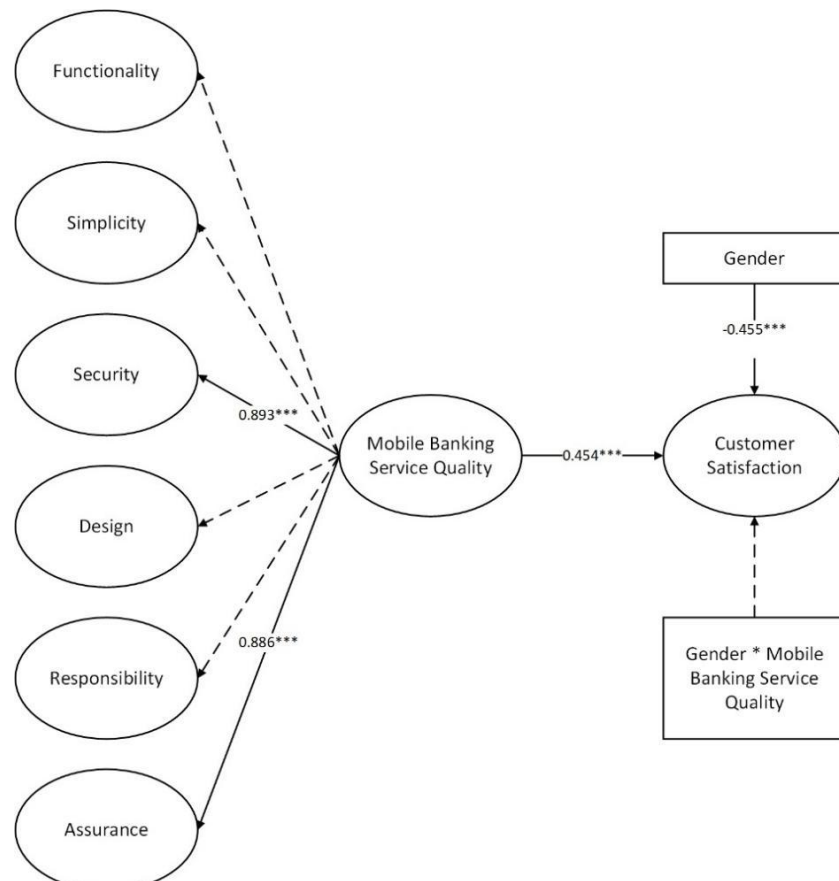
Notes: \* Second-order latent variables; SD = Standard Deviation, CR = Composite Reliability, AVE = Average Variance Extracted

**Table 7:** Hypotheses Testing.

Relationships	Estimates	Results
Mobile banking service quality measured by two dimensions (e. g., security and assurance) has a significantly positive effect on customer satisfaction.	0.454***	Partially supported
Gender has a significant effect on customer satisfaction.	- 0.455***	Supported
Gender significantly moderates the casual relationship between mobile banking service quality and customer satisfaction.	- 0.015	Not supported

Source: Created by the authors

Note: \*\*\* p-value ≤ 0.001



**Figure 1:** The conceptual framework with the statistical results.

Source: Created by the authors

Note: \*\*\* p-value  $\leq 0.001$

## 5. Conclusions

Two among six dimensions of mobile banking service quality are considered as strong predictors of customer satisfaction including security and assurance. Male customers are more likely to be satisfied with quality of mobile banking services. While most previous studies find that these six dimensions of mobile banking service quality are as strong determinants of customer satisfaction, the findings from this current study are unique (Berry & Parasuraman, 1993; Bitner, 1990; Cronin & Taylor, 1992; Grönroos, 1984; Lehtinen & Lehtinen, 1991). It would be contextually explainable as most people in Ho Chi Minh city are suffering from the lockdown regulations. In such a situation, mobile banking is one of the appropriate ways to pay shopping online and keep social distance. These findings would extend our current understanding of the concept of customer satisfaction in relation to service quality in difficult time of Covid-19. It suggests that security and assurance of mobile banking service quality play important roles in identifying customer satisfaction to the services. In addition, this study underpins previous studies by adding the gender roles into customers' perception of satisfaction (Karatepe, 2011; Teeroovengadum, 2020). Interestingly, male customers are found from this study had a significant effect on mobile banking's service quality.

## 5.1 Managerial implications

It would be argued that customers are looking for security and assurance rather than other aspects of mobile banking when they do any financial transactions during Covid-19. Hence, this study suggests that practitioners should improve their technical issues to address these customers' needs. For examples, customers' private information should be protected while they are using self-service technology. Suppliers of mobile banking services should provide adequate information in relation to customers' finance transaction and in courteous manners if there are any requests from them. Moreover, policies should be applied differently to female customers to increase their satisfaction.

## 5.2 Limitation and further research

Firstly, the respondents of this study were only basing in Ho Chi Minh City, which means respondents from other regions of the country had been ignored. While they may have different attitudes and perspectives towards the service settings. Hence, the findings from this study might limit its generalization about the whole of banking industry. It is suggested that future studies should increase their sample sizes and collect the data from adequate representatives of three regions of the country. Secondly, this study applied convenience sampling that only targeted to people who use the service frequently, so future studies would clearly segment the target population by education, monthly income, etc. in order to provide more accurate patterns for

the mobile banking industry. Finally, this study utilized the quantitative approach, which cannot explain fully the reasons behind this phenomenon of customer satisfaction toward mobile banking service in the Covid-19. Therefore, further studies should apply other methodology such as mixed method or qualitative approach in order to better address the customer perspectives.

## Acknowledgements

We would like to thank Ms. Truong Trieu Minh, who is a member of this research team, but is not involved in this paper.

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