

# The Impact of Mobile Banking Service on Customer Satisfaction: A Case Study of Commercial Banks in China

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**Abstract— Purpose** – this report focus on this tends to present what is the relationship between mobile banking service in the financial industry in China and customer satisfaction and how transaction speed, accessibility, affordability, adaptability, ease of use, relative advantage, and perception of risk. **Design/Methodology/Approach** – This study mainly discusses the influencing factors of mobile banking service on customer satisfaction, and finally creates a new theoretical framework based on the analysis of the theoretical framework of the previous two works of literature. **Findings** – Through the research on the influence of mobile banking service on customer satisfaction, it is found that the speed of transactions of mobile banking, accessibility, affordability, adaptability, ease of use, and relative advantage have a significant impact on customer satisfaction. **Research Limitations/Implications** –The factors affecting customer satisfaction with mobile banking services mainly depend on the mobile banking services used. Different banks have different technologies and service standards, thus affecting customer satisfaction levels, so the factors of the survey are also limited. In addition, the scope of respondents in the questionnaire is small, and the data analysis is also limited to some extent. At the same time, especially before the COVID-19 pandemic, there is relatively little literature on the impact on mobile banking with customer satisfaction, and there are relatively few reference standards for research. **Originality/value** - this study is about the important influencing variables that affect mobile banking service and customer satisfaction.

**Keywords**— mobile banking; the speed of transactions; accessibility; affordability; adaptability; ease of use; relative advantage; perception of risk; customer satisfaction.

## 1. INTRODUCTION

### 1.1 Background of the study

The factors influencing Chinese consumers' satisfaction with mobile banking services are investigated in this study. The modern Chinese banking industry has entered the BANK4.0 era. Statistics show that between 2015 and 2019, Chinese banks opened fewer new branches—more than 2,000 compared to more than 7,000—while closing more branches—more than 300 as opposed to more than 3,500. The banking industry's digital transformation has been significantly impacted and sparked by the COVID-19 pandemic in 2020.

The number of mobile payment transactions processed in China, the world's largest market, increased by 92.48 percent and 44.53 percent, respectively, in 2018. In 2018, there were 532.814 billion mobile payment transactions conducted in China, totaling RMB 445.22 trillion. The Payment & Clearing Association of China launched a campaign on February 28, 2020, in response to the COVID-19 epidemic that broke out in China in December 2019, urging consumers to adopt barcode, mobile, and online payment methods to reduce their

chance of contracting the virus. This would significantly increase China's mobile payment transactions, which are expected to increase by 31.8 percent annually to RMB777.5 trillion in 2020. Third-party mobile payments have steadily eroded mobile banking's market share due to the growth of the third-party mobile payments sector. The volume of third-party mobile payment transactions in China reached RMB167.83 trillion in 2018, increasing by 59.7% year over year and controlling 37.7% of the market. In line with expectations, third-party mobile payments will surpass mobile banking in market share by 2021 and hold 58.1 percent of the market by 2026 (Dublin, 2020).

With the help of their smartphones or tablets, customers can execute financial transactions using mobile banking services offered by banks or other financial institutions. Trading hours are open 24 hours, and customer account limits are determined by banks and financial institutions. Not all eligible accounts are available through Mobile Banking.

Viewed from the perspective of the client, compared with the past, the customer's financial management behavior has undergone great changes. Users rarely

choose to go to transaction business. The main channel for obtaining financial services has no physical location, and more online solutions are used. Deposits, payment clearing, credit financing, etc. It is even desirable to obtain such services automatically in some scenarios. Therefore, the banking industry needs to use mobile phone services as the main means to explore a new service model integrating financial and non-financial services, and to provide "ubiquitous, readily available" all-around, all-weather services.

The major changes brought about by mobile banking ensure the smooth delivery of banking services to customers. Customers are the foundation for the development of mobile banking. Mobile banking is shifting to customer connections that provide new sources of value due to new service models. The increasing use of mobile banking by customers and their need for a more personalized experience has prompted mobile banking or financial institutions to reconsider their customer service plans. Therefore, mobile banking must leverage better services to create more meaningful customer satisfaction.

### **1.2 Research Objectives**

As was previously said, a variety of factors influence how satisfied customers are with mobile banking services. Examples of independent variables that have an impact on the dependent variable consumer satisfaction include transaction accessibility, adaptability, cost, ease of use, relative advantage, and perceived risk. Therefore, the goal of this study is to thoroughly assess how many elements that affect customer satisfaction are related to one another.

1. Examine the impact of mobile banking on transaction speed and customer satisfaction.
2. Examine the impact of mobile banking on accessibility and customer satisfaction.
3. Examine the impact of mobile banking on adaptability and customer satisfaction.
4. Examine the impact of mobile banking on affordability and customer satisfaction.
5. Examine the impact of mobile banking on ease of use and customer satisfaction.
6. Examine the impact of mobile banking on relative advantages and customer satisfaction.
7. Examine the impact of mobile banking on perceived of risk and customer satisfaction.

These objectives have aligned with research questions as detailed below:

1. Does the speed of transactions in mobile banking significantly impact consumer satisfaction?
2. Does the accessibility in mobile banking significantly impact consumer satisfaction?
3. Does the adaptability in mobile banking significantly impact consumer satisfaction?
4. Does the affordability in mobile banking significantly impact consumer satisfaction?
5. Does the ease of use in mobile banking significantly impact consumer satisfaction?
6. Does the relative advantages in mobile banking significantly impact consumer satisfaction?
7. Does the perceived of risk in mobile banking significantly impact consumer satisfaction?

Mobile banking services are particularly crucial given the quick growth of technology. Although there is little study on mobile banking customer service, China's mobile banking business is at the top, so there is considerable importance to understanding how mobile banking service affects customer satisfaction in China. According to the customer survey, more than 90% of the consumers surveyed primarily use mobile payments, and 74% of the customers polled indicated they use mobile payment software every day (eMarketer, 2021).

With the diversified development of mobile payment scenarios, mobile banking transactions have become the main transaction method used by consumers daily. Mobile payments are everywhere in China. Because the transaction of mobile banking is more flexible and convenient than traditional banking, however, customer satisfaction is an important factor for mobile banking services, because the revenue and business of the banking industry are mainly the continuous use of new and loyal customers. Therefore, we are conducting this research to better understand what factors influence customer satisfaction.

First, the findings of this study will assist the mobile banking sector in better attracting clients and increasing revenue. Understanding the factors of customer satisfaction, maintaining customers, and collecting customers' opinions and suggestions, enable banks to continuously improve products, and services, improve the management level, improve the communication ability between mobile banking and customers, and continuously cultivate loyal customer groups. In addition, the banking industry can use this research to develop workplace policies and procedures to adapt to new business processes. These factors can be used to make customers more efficient, safer, and more convenient to use.

Secondly, by strengthening customer care in different fields and carrying out risk management, the sales cycle will be shortened, operating costs will be reduced, more channels will be expanded in the market, profitability will be improved, and customer value and bank interests will be maximized.

Finally, improve customers' awareness of mobile banking services, enjoy the rights and interests of more services, and improve customers' trust in mobile banking.

## 2. LITERATURE REVIEW

### 2.1 Theories of Each Variable

#### 2.1.1 Customer satisfaction

Customer satisfaction is measured using numerical descriptions and refers to the numerous perceptions and responses that customers exhibit toward items or services after using those products or services (Farris et al., 2010). Customer satisfaction drives repeat purchases. Since then, many scholars have conducted research in this field. Customer satisfaction is determined by the degree of realization of the interests of consumers in the process of consuming products or services, and it reflects the degree of consistency between the realization of interests and expectations. Personal evaluation can greatly influence customer satisfaction through personal expectations (Khan & Mahapatra, 2008; Orel & Kara, 2014). The definition is based on the observation that a person's expectations for

a service or product are satisfied or not satisfied depending on whether they were met. The definition of satisfaction is "an assessment of the perceived difference between prior expectations and the actual performance of a product." (Kotler, 2012). Customer satisfaction is associated with acceptance, happiness, relief, excitement, and joy (Islam & Himel, 2015; Kheng et al., 2010). This means that consumers have certain predictions about product performance before consumption. During consumption, consumers experience the performance of a product and compare it to the expected level of product performance with conventional products (Schlich, 2014). On this basis, the judgment of customer satisfaction is formed. If the performance is better than expected, it is considered a positive confirmation, and it is called a negative uncertainty; in short, the customer compares their expectations and beliefs about the product performance (Carlos & Tiago, 2016).

The financial sector must offer higher-quality goods and services by keeping steady and close ties with its clients. Hence, since mobile banking is intended to provide a smooth client experience, it is important to understand the level of consumer satisfaction. Because finance is a highly involved industry. Providing high-quality services to their clients is necessary for them to succeed in today's globally competitive environment, and that is the voice of financial industry executives. From the perspective of Chinese brands, Figure 1 shows the 2021 SM (C-CSI®) Banking Service Satisfaction sub-index, showing an upward trend.



Figure 1: China Customer Satisfaction Index 2021 SM(C-CSI) Banking Service Satisfaction from Chnbrand (2022)

#### 2.1.2 Speed of transactions

Muluka (2015) defines transaction speed as the speed of transactions and the expected delivery results using digital banking. Kimes and Collier (2015) found that customers were able to have enough time to trade,

verifying all trade demands, faster than they expected. Makarand et al. (2014) demonstrate the effectiveness and importance of transaction speed. The feedback time and speed of customers using mobile banking are better than expected. The transaction speed of mobile banking

is reliable. Transaction speed has an impact on client satisfaction in mobile banking services (Rajan & Saranya, 2019). In terms of mobile banking services, customers can quickly log in to the application, and experience the convenience of cash transactions and the performance between credit cards, increasing customer satisfaction (Rajan et al., 2013). Transaction speed refers to the responsiveness of the mobile banking APP to customers and the ability to help customers solve problems. The responsiveness of mobile banking focuses on evaluating the compatibility of mobile banking APPs with smartphones, the speed of response to abnormal information, and the efficiency and quality of online customer service staff in handling customer issues (Khidhir, 2014).

### **2.1.3 Accessibility**

The latest banking technology meets the functional and utility needs of customers in banking. Consumers' utility in using mobile banking products or services, according to (Martin & Rabindranath, 2017) and (Kameswaran & Muralidhar, 2019), determines how satisfied customers are with those products or services (Muluka, 2015). From the access function of mobile banking, customers can save time and conduct transfer business anytime and anywhere (Villers, 2012); optimize financial management and help customers reduce bill payment rates (Demirci, 2012). It is also one of the important channels for customers to use mobile banking to process financial transactions (Al-Jabri & Sohail, 2012); login to mobile banking, transfer money directly through the recipient's email or phone number, and complete the transaction in minutes. Enhanced security for accessing mobile banking, logging in to the mobile app via username and password, and providing additional security features to further protect accounts. First are the account credentials (username and password), then the text of the code on the phone with the digital verification that needs to be submitted to gain access to the account (Villers, 2012).

### **2.1.4 Adaptability**

The adaptability of mobile banking products and services refers to the degree of consistency with customer values and needs (Muluka, 2015). The adaptability of customers to mobile banking is also reflected in the experience of daily scenarios and behaviors such as automated payment (Oliveira et al., 2016). The adaptability of mobile banking services is the degree of ability to respond to different customers in different environments (Khare, 2011). Adaptive service reflects the ease of use for customers. The freedom of adaptability of mobile banking is also one of the reasons why customers value it (Moreno, 2014). The use of

different digital banking channels by bank customers is an indicator of their resilience (Rajan & Nadu, 2019).

### **2.1.5 Affordability**

Affordability of mobile banking refers to the monetary and non-monetary costs Sohail (2012) that customers perceive to be saved by using new technology products (Siddik et al., 2014). Transaction fees generated by digital banks are lower than those generated by traditional banks or free features (Yancy, 2013; Michael, 2015). Mobile banking online accounts generate higher interest than banks and can withdraw cash at any time (Tran & Garcez, 2016). Customers use mobile banking transactions; processing business can save so-called transportation costs and time costs. Affordability is also a preferential solution for mobile banking technology to solve problems for customers (Giovanis et al., 2019).

### **2.1.6 Ease of use**

The ease of use of mobile banking is the ease of understanding and application of new technology products and services (Arvidsson, 2014). The so-called ease of use refers to the customer's belief that the opening process and operation process of mobile banking is simple. Mobile banking is a new type of financial service software based on high-tech research and development (Carlos & Tiago, 2016), so it is difficult for customers to operate mobile banking Kang et al. (2015), which determines their satisfaction with the use of mobile banking (Ozturk et al., 2016; Johnson et al., 2018). The ease of use of mobile banking is defined as the ease of opening and operation. In ease of use, the corresponding questions include the convenience and efficiency of mobile banking activation and APP download, the compatibility of the mobile banking interface with the customer's usage habits, and the ease of operating the business process (Johnson et al., 2018).

### **2.1.7 Relative advantage**

Relative advantage is the degree of advantage of new technology products and services perceived by customers to mobile banking compared to traditional methods (Kaushik & Rahman, 2015; Fernandes, 2017; Kang et al., 2015). The relative superiority of mobile banking is reflected in that it is more efficient, convenient, fast, and time-saving to handle financial business (Achieng & Ingari, 2015). Relative advantage is one of the reasons why customers benefit from using mobile banking. Relative advantage is an important factor for mobile banking services to attract customers (Joo et al., 2014). From a technical perspective, the comparative advantage is better than the previous

technology and better meets the needs of current customers.

### **2.1.8 Perception of risk**

Perceived risks include the failure of mobile banking to strictly protect customers' personal information or transaction information, fund protection, and inadequate security reminders. Perceived risk is particularly important when it comes to mobile banking funds protection measures and confidentiality issues (Khraim et al., 2011). Perceived risk is the potential loss experienced by the customer (Alalwan et al., 2016). The risk of theft or unpredictability extends to a sizable amount of business or personal information kept in mobile banking (Hevesi, 2019; Dmitrienko, 2015). Consumer-perceived risk is the degree to which customers' expectations and actual behavior vary, as well as the likelihood that technology will fail to deliver the expected results and result in losses (Koenig-Lewis et al., 2012).

## **2.2 Related literature of each variable**

### **2.1.1 Speed of transactions and customer satisfaction**

Transaction speed refers to the minimum time required to perform the desired action for a client. With the help of technology, customers can spend less time visiting bank branches and online channels, which means faster and more efficient business processes (Rajan & Nadu, 2019).

First, for those customers who use online services such as mobile banking, online banking, or WeChat banking at home, their time at a bank branch will be reduced. This is mainly due to the massive use of smart machines and tools offline by banks to set up smart counters and the use of mobile banking (Premalatha & Sundaram, 2012). Going back a decade, bank branches were closely associated with "queuing and waiting". One of the common concerns is the efficiency of customer reception in branches and low satisfaction due to long queue times (Gikandi & Bloor, 2010). With the help of smart banks, transactions such as signing, transferring, and filling forms that could only be handled at traditional counters in the past can now be handled by smart devices Dewi et al. (2019), covering more than 90% of traditional businesses, greatly shortening The time the customer waits and transacts the business.

Second, for those customers who use mobile banking services, they spend less time in the process. The main reason is that customers don't have to go to the branch. They can perform most of the transactions related to their accounts online, for example (Villers, 2012) points out that paying bills via internet banking, mobile

banking, and WeChat banking are the fastest ways to manage accounts (Khidhir, 2014). For example, transactions like transfers involving third parties, and deposits can save considerable time at the click of a button. (Marous, 2014) Mobile banking can help customers reduce waiting time spent in branches and digital channels, which means a faster transaction process for customers, which in turn increases customer satisfaction (Fang et al., 2013; Khan, 2010; Shrestha, 2013).

### **2.2.2 Accessibility and customer satisfaction**

Vuong (2015) after a customer logs in to the mobile banking app directly without being restricted by time and place, the first thing they come into contact with is the operation interface, service menu classification, business function prompts, etc. When these contents are concise and easy to understand, the customer can quickly understand the functions of mobile banking (Muluka, 2015), obtain key information within a limited time, and satisfy customers' needs for a simple interface and easy operation (Anderson & Robey, 2017; Chen & Wu, 2021), then It will produce better experience effect and higher satisfaction (Hassounah et al., 2020; Willems et al., 2021). Ondiege (2010) the service of mobile banking is more convenient than traditional bank transfer channels, with direct transfer through the recipient's email or phone number, and the transaction is completed in a few minutes (SunTrust bank, 2015). Second, access to mobile banking is enhanced with enhanced security, logging into the mobile app via username and password, and providing additional security features to further protect accounts. First are the account credentials (username and password), then the text of the code on the phone with the digital verification that needs to be submitted to gain access to the account (Villers, 2012).

Users experience various online shopping, financial management, bill payment, and other transactions, and they are using mobile banking to conduct transactions at any time (Nabity-Grover et al., 2020). Therefore, the operation interface, service classification, business function prompts, and accessibility of operation security of mobile banking are one of the influencing factors.

### **2.2.3 Adaptability and customer satisfaction**

The adaptive service of mobile banking makes it easier and easier for customers to use in scenarios in the changing customer needs (Michael, 2015). The process of aligning with the customer's values Villers (2012) and psychological needs (Khidhir, 2014). At any time, customers live, work, and the uncertainty of the external environment, adaptive services make customers a daily,

indispensable part of every day. For example, some bills are paid at a fixed time by Sharma and Singh (2012) and become automated by Saleem and Rashid (2011), saving customers' time and effort (Thulani et al., 2011). With the continuous updating of mobile banking technology, customers have become freer to adapt to services and at the same time, efficiency is also valued by customers. Especially with the development of the current epidemic, customers have accelerated the use of mobile banking, online transactions on different platforms, freely switching between different channels (Moreno, 2014), and accurate and efficient feedback. Therefore, improving the adaptive banking service of mobile banking is a factor to improve customer satisfaction (Behjati et al., 2012).

#### **2.2.4 Affordability and customer satisfaction**

Affordability means customers spend less on transaction fees (Rajan & Nadu, 2019). In addition to the fact that customers can transact online and save on transportation costs, another is that digital channels in the financial industry offer preferential rates and lower transaction fees through third-party payment platforms and banks (Beattie, 2014).

First, from the perspective of third-party payment platforms, they can offer lower transaction rates and fees (Achieng & Ingari, 2015). For example, almost everyone in China has a WeChat account, and people can pay bills through a WeChat wallet without paying any fees. Also, WeChat sometimes transfers money to customers at lower rates than banks, so third-party payment platforms can attract more customers by offering them more affordable prices (Fennell, 2014).

Secondly, from the perspective of banks, on the one hand, to improve their competitiveness with third-party payment platforms and seize market share, they have to reduce fee rates and handling fees. On the other hand, banks are also phasing out point-based payment products, trying to gain a little bit of life in the zero-interest and low-interest market environment through rate subsidies, cash, etc. All in all, transaction rates and fees for customers have fallen under the competition using digital technology.

Therefore, some argue that mobile banking, in addition to lowering shipping costs by Okiro and Ndungu (2013), not only offers lower transaction fees through third-party payment platforms, but also lowers bank rates and fees to survive according to Gomachab and Maseke (2018), which means better affordability for customers and, in turn, better customer satisfaction. In terms of business handling fees and other aspects, customers are given a certain degree of preferential treatment, which

brings certain economic benefits to customers. Therefore, the economy is one of the indicators affecting customer satisfaction (Rajan & Nadu, 2019; Yu, 2012; Islam & Himel, 2015).

#### **2.2.5 Ease of use and customer satisfaction**

Although mobile banking is popular among customers due to its convenience and speed, with the vigorous popularization of third-party payment apps with high stickiness such as WeChat and Alipay, the simple and easy-to-use functions of mobile banking have shortened the distance between customers and mobile banking and improved customer satisfaction (Johnson et al., 2020).

First, with the popularization of smartphones, mobile banking will gradually become an important channel for the sales of financial products and financial services of banks. Therefore, the customer groups of mobile banking have simplified the opening and operation procedures to promote the application of mobile banking in various countries. The popularity and use of age groups meet the needs of users of all ages (Arvidsson, 2014).

Second, optimize the mobile banking interface based on customer experience, and strive to make the page concise and clear, so that customers can immediately lock the information and functions they need (Zhu et al., 2017); artificial intelligence technology can be embedded in mobile banking, such as voice recognition Function, artificial intelligence interface recommendation, business reminder, question-and-answer interaction, and other modes, explore natural voice dialogue-style service experience (Oechslein et al., 2015), and improve customer experience satisfaction.

Third, improve the usability of basic functions of mobile banking and strengthen the emotional connection with customers (Abdekhoda et al., 2016). Timely excavate and analyze the potential needs of customers (Asfour & Haddad, 2014), and constantly explore the simple operation of mobile banking customer needs (Carlos & Tiago, 2016). Therefore, the ease of use of mobile banking services is also one of the factors affecting customer satisfaction (Johnson et al., 2018; Arvidsson, 2014).

#### **2.2.6 Relative advantage and customer satisfaction**

Customer satisfaction is mostly represented in channels and goods when clients use mobile banking, according to research and review. First of all, the channel advantage is reflected in the high service efficiency. The customer selects the account number and withdraws money with the password. The whole operation process

is simple and smooth according to Arvidsson (2014), Oliveira et al. (2016), and Schierz et al. (2010), which is more efficient and truly achieves "anytime Anywhere, swipe and take" Kumbhar (2011), allowing customers to enjoy the convenience of technology. The second is the quality of service. Customers can easily choose the financial business they want to handle with a touch-sensitive, friendly and simple operation menu (Nupur, 2010). In terms of product advantages, pure credit online financial products, mobile phone applications, automatic credit granting, and loans as needed, allow customers to obtain convenient financial services without leaving home (Kang et al., 2015; Kaushik & Rahman, 2015). Only online scenarios are needed to allow customers to obtain more convenient and efficient financial services. New products and equipment have brought a better financial experience to customers and played a significant role in the perceived value of customers. The more convenient and smarter the new technology products and services of mobile banking, the more satisfied customers will be (Johnson et al., 2020). Therefore, the comparative advantage of mobile banking has an impact on customer satisfaction.

### 2.2.7 Perception of risk and customer satisfaction

Mobile banking refers to the channel model in which commercial banks use Internet technology and use smartphones as the carrier to conduct business at the terminal. Leaked (Khraim et al., 2011), funds stolen (Hevesi, 2019). These risks require mobile banking to establish a security model, predict risks in advance Khrais (2012), analyze risks by Jepleting and Oscar (2013), prevent the occurrence of risks, and continuously improve technology and security controls (Thulani et al., 2011). Protect customer security, transaction security, and system security, and help mobile banking reduce the threat of phishing APPs to the maximum and fastest speed.

As a result, one of the major determinants of customer satisfaction in mobile banking is perceived risk. (Kabir, 2013; Jannat & Ahmed, 2015), and customer satisfaction can only be improved by ensuring the safety of customers during their use (Arpaci et al., 2015; Johnson et al., 2018).

### 2.3 Conceptual Framework

There are two theoretical frameworks which use to construct the conceptual frameworks in this study. The first theoretical framework from Muluka's (2015) "Influence of Digital Banking of Customer Satisfaction: A Case of National Bank of Kenya Bungoma County". This survey offers data on customer satisfaction, (1) transaction speed, (2) accessibility, (3) adaptability, and

(4) affordability. The study demonstrates that digital banking leads to business results and that there are numerous aspects and keys to banking performance. We looked at how consumer happiness and mobile banking (including transaction speed, accessibility, adaptability, and affordability) relate to one another. The second conceptual framework is based on Kumari's (2014) study, "Impact of Mobile Banking Services on Customer Satisfaction: A Study on Sri Lankan State Commercial Bank." The purpose of this study is to ascertain how mobile banking services impact consumer satisfaction. (1) Easy of use, (2) relative advantage, and (3) perception of risk are three distinct factors that influence customer satisfaction. To gauge the elements that influence consumer satisfaction, data is gathered using an online survey.

The conceptual framework is changed in light of prior research, theoretical ideas, and testing materials that show the influence of independent variables like transaction speed, accessibility, affordability, adaptability, ease of use, relative advantage, perception of risk of mobile banking services, and customer satisfaction. The conceptual framework is shown in Figure 2.

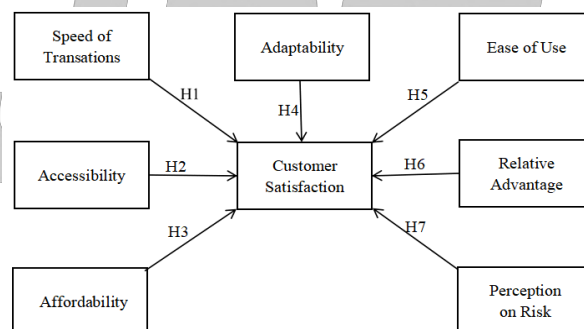


Figure 2: The conceptual framework

Based on the conceptual framework proposed above, the researchers put forward seven hypotheses to study the relationship among the transaction speed, accessibility, affordability, adaptability, ease of use, relative advantage, negative perception of risk associated with mobile banking services and customer satisfaction. The assumptions are as follows:

- **Hypotheses 1 (H1):** The speed of transactions of mobile banking services will have a positive impact on customer satisfaction.
- **Hypotheses 2 (H2):** The accessibility of mobile banking services will have a positive impact on customer satisfaction.
- **Hypotheses 3 (H3):** The affordability of mobile banking services will have a positive impact on customer satisfaction.

- **Hypotheses 4(H4):** The adaptability of mobile banking services will have a positive impact on customer satisfaction.
- **Hypotheses 5 (H5):** The ease of use of mobile banking services will have a positive impact on customer satisfaction.
- **Hypotheses 6 (H6):** The relative advantage of mobile banking services could have a positive impact on customer satisfaction.
- **Hypotheses 7 (H7):** The perception of the risk of mobile banking services should have a negative impact on customer satisfaction.

### 3. RESEARCH METHODOLOGY

The goal of this study is to identify the variables that influence customer satisfaction with mobile banking services concerning transaction speed, accessibility, affordability, adaptability, ease of use, relative advantage, and perception of risk for those customers who are already using mobile banking. Moreover, this study will also determine the level of impact for each variable that customers are using mobile banking. Since this study is quantitative research, therefore, there is Cronbach's Alpha, Multiple Linear Regression, and Descriptive Data Research to analyze and research.

The questionnaire consists of three parts, a total of 37 items that relate to 7 variables of the research model, one item related to screening questions, 31 items related to measuring variables, and five items related to demographic information.

Firstly, Cronbach's Alpha was used to test the reliability of the questionnaire and whether there was any uncertainty or confusion on the measurement items in the questionnaires. A small group of 40 samples was conducted by a pilot test to verify the reliability of the questionnaire and to check whether there was any confusion on the measurement items in the questionnaires. In this study, the researchers use a five-point Likert Scale to evaluate respondents' attitudes and

their agreement levels based on each variable. The statistical scale is designed so that 1 denotes "Strongly Disagree", while 5 denotes "Strongly Agree." These characteristics that affect consumer satisfaction with mobile banking services were also examined by the researchers using multiple linear regression (MLR).

In this research, the target population is people in China who use mobile banking. According to China Electronic Banking Development Report 2020, the population of China is 350,000,000 (as of Friday, December 11, 2020). In this study, the authors used the formula by Cochran (1977) for calculating the sampling size of respondents due to this formula being used to calculate the sample size that does not know the number of populations.

The authors of this study used a non-probability sampling technique, which involves non-random selection based on practicality and ease of data collection. Researchers decided to use a non-probability sampling method in studies because of the limit of time and current situation which required social distancing. Therefore, this method is the proper method as the researcher can easily collect data based on convenience.

Table 1 that the authors use the statistic program to measure Cronbach's Alpha to gauge how closely linked a group of items are to one another. The outcome demonstrated that 8 components make up the overall variables of the elements that affect customers' satisfaction with mobile banking services ( $\alpha=0.958$ ). The result demonstrated that the Cronbach's alpha for speed of transaction of 4 items is .953, the 4 items of accessibility is .950, the 3 items of affordability are .950, the 4 items of adaptability is .951, the 4 items of ease of use is .950, the 3 items of relative advantage is .951, the 4 items of perception on risk is .967, the 5 items of customer satisfaction is .948. All of the aforementioned elements that influence client satisfaction with mobile banking services are valid.

**Table 1: Result from Pilot Test – Cronbach's Alpha (n=40)**

Variables	Cronbach's Alpha ( $\alpha$ )	Number of Items	Strength of Association
<b>Speed of Transaction (ST)</b>	0.953	4	Excellent
<b>Accessibility (AC)</b>	0.950	4	Excellent
<b>Affordability (AF)</b>	0.950	3	Excellent
<b>Adaptability (AD)</b>	0.951	4	Excellent
<b>Ease of Use (EU)</b>	0.950	4	Excellent
<b>Relative Advantage (RA)</b>	0.951	3	Excellent
<b>Perception on Risk (PR)</b>	0.967	4	Excellent
<b>Customer Satisfaction (CS)</b>	0.948	5	Excellent



**4. RESULTS**

Table 2 demonstrates how the authors utilize the SPSS program to measure the reliability scale and estimate how closely linked a set of items are collective. The findings indicated that there are seven variables overall ( $\alpha=0.858$ ) that have an impact on consumer satisfaction with mobile banking services. The result demonstrated that the Cronbach's alpha for speed of transaction of 4

items is .835, the 4 items of accessibility is .844, the 3 items of affordability are .844, the 4 items of adaptability is .836, the 4 items of ease of use is .830, the 3 items of relative advantage is .840, the 4 items of perception on risk is .866, the 5 items of customer satisfaction is .823. The aforementioned variables are all valid and have an impact on consumer satisfaction with mobile banking services.

**Table 2: Cronbach's Alpha (n=399)**

Variables	Cronbach's Alpha ( $\alpha$ )	Number of Items	Result
Speed of Transaction (ST)	0.835	4	Reliable
Accessibility (AC)	0.844	4	Reliable
Affordability (AF)	0.844	3	Reliable
Adaptability (AD)	0.836	4	Reliable
Ease of Use (EU)	0.830	4	Reliable
Relative Advantage (RA)	0.840	3	Reliable
Perception on Risk (PR)	0.866	4	Reliable
Customer Satisfaction (CS)	0.823	5	Reliable

**4.1 Descriptive Analysis of Demographic Data**

The demographics of the survey respondents were examined by the researchers using descriptive analysis in the statistic program, which they used to collect feedback from banks. Gender, age, income level, occupation, and salary situation can be used to analyze the characteristics of the respondents who participated in the questionnaire. The researchers used descriptive analysis in SPSS to study the demographics of the survey respondents, which they used to collect feedback from banks. Gender, age, income level, occupation, and salary situation can be used to analyze the characteristics of the respondents who participated in the questionnaire, as shown in Table 3:

Gender: Among the 399 eligible respondents, the proportion of females was 51.4%, higher than the 48.6% of men, of which 205 respondents were women and 194 respondents were male. Age: The 31-40 age group accounted for the largest proportion of the 399 respondents, accounting for 35.8%, with 143 respondents, followed by the 20-30-year-old respondents, accounting for 32.6%, with 130 respondents, the respondents aged 41-50 were 87,

accounting for 21.8%, and the respondents aged 50 and over were 39, accounting for only 9.8%. Education level: Among the 399 respondents, 258 respondents had a university degree, accounting for 64.7%, 14% had a high school education, 56 respondents had a graduate degree or above, and 62 respondents had a graduate degree or above, accounting for 62%. 15.5%, and 23 respondents with a high school education or below, accounting for 5.8%. Job level: Among 399 respondents, service personnel (catering waiter/driver/salesman, etc.) accounted for 28.6%, the number of respondents was 114, and professional occupation (teacher/doctor/lawyer, etc.) accounted for 27.6% %, the number of respondents is 110, the proportion of public institution/government staff is 19.5%, the number of respondents is 78, the proportion of company managers is 5.8%, and the number of respondents is 23. The income per month: Income is 25,001-50,000 Baht and 50,001-80,000 Bath among the 399 respondents, accounting for 27.6%, the survey population is 110, the income is 80,000-100, 000 Bath accounted for 22.5%, the number of respondents was 90, the proportion of income over 100,001 Bath and less than 25,000 Baht was 14.8% and 7.5%, and the number of respondents was 59 and 30 respectively.

**Table 3: The analysis of demographic factors using the frequency distribution and percentage (n =399)**

Demographic Factors	Frequency	Percent
<b>Gender</b>		
Male	194	48.6
Female	205	51.4
Total	399	100
<b>Age</b>		

<b>20 – 30 years old</b>	130	32.6
<b>31 – 40 years old</b>	143	35.8
<b>41 – 50 years old</b>	87	21.8
<b>Over 51 years old</b>	39	9.8
<b>Total</b>	399	100
<b>Education level</b>		
<b>Lower than high school</b>	23	5.8
<b>High school</b>	56	14
<b>Bachelor's Degree</b>	258	64.7
<b>Master's Degree and over</b>	62	15.5
<b>Total</b>	399	100
<b>Job level</b>		
<b>Company manager</b>	23	5.8
<b>Professional occupation (teacher, doctor, lawyer, etc.)</b>	110	27.6
<b>Service personnel (catering, waiter, driver, salesman, etc.)</b>	114	28.6
<b>Public institutions, government staff, etc</b>	78	19.5
<b>Merchants and others</b>	74	18.5
<b>Total</b>	399	100
<b>Income per month</b>		
<b>Less than 25,000 Baht</b>	30	7.5
<b>25,001 – 50,000 Baht</b>	110	27.6
<b>50,001 – 80,000 Baht</b>	110	27.6
<b>80,001 –100,000 Baht</b>	90	22.5
<b>Over 100,001 Baht</b>	59	14.8
<b>Total</b>	399	100

#### 4.2 Descriptive Analysis with Mean and Standard Deviation

The speed of transaction, accessibility, affordability, adaptability, ease of use, relative advantage, perception of risk, and customer satisfaction make up the summary of the Mean and Standard Deviation of each group variable in this section will be examined:

As can be seen from Table 4, the highest mean transaction speed is "Mobile Banking transaction speed is important in daily transactions", with the highest mean value of 3.85. The lowest mean was "Transactions using mobile banking are faster at bank branches than before I adopted the other digital channels." The lowest mean transaction speed was 3.81. In standard deviation, "Mobile Banking transaction speed is important in daily transactions." and the highest transaction speed is equal to 1.1. On the other hand, the transaction speed of the lowest standard deviation value is 0.996 in "The wait time at the bank branch is reduced to before the adoption of the mobile banking channel."

As can be seen from Table 4, the highest mean of accessibility is "Using mobile banking, it is easy and convenient to log in and out." which was 4.00. The lowest mean was "The usage rights and access to mobile banking are very clear." The accessibility of the mean

was 3.81. In terms of standard deviation, the highest is "The usage rights and access to mobile banking are very clear." and the equal of accessibility was 1.129. On the other hand, "Using mobile banking, it is easy and convenient to log in and out." has the lowest effectiveness in accessibility, which was 1.055.

As can be seen from Table 4, the affordability of the highest mean "Using mobile banking can handle bank account transactions effectively and without additional fees." was 3.81. While the lowest mean was "Mobile Banking affordability is important in transaction-heavy.", the affordability was 3.72. In terms of standard deviation, the highest is "Mobile Banking affordability is important in transaction-heavy." It is equal to 1.194 in terms of affordability. However, "Using mobile banking can handle bank account transactions effectively and without additional fees." had the lowest effectiveness in affordability at 1.146.

As can be seen from Table 4, the highest mean of adaptability is "Mobile banking is very reliable." The mean is 3.71. However, the lowest mean was "It has been used mobile banking for various transactions every day." while the average for adaptability was 3.44. In terms of standard deviation, the highest is "It has been used mobile banking for various transactions every

day.", while adaptability is equal to 1.207. On the other hand, "Mobile banking is very reliable." has the lowest adaptability at 1.073.

As can be seen from Table 4, the highest mean of ease of use is "Mobile banking is easy to operate for all kinds of businesses.", and the mean is 3.64. However, the lowest average was "The interface of mobile banking is very simple." while the mean for ease of use was 3.59. In terms of standard deviation, the highest is "The interface of mobile banking is very simple. Mobile banking can be switched freely in different applications.", and ease of use is equal to 1.189. On the other hand, in ease of use, "Mobile banking is easy to operate for all kinds of businesses." has the lowest effectiveness at 1.091.

As can be seen from Table 4, the highest mean of relative advantage is "Using mobile banking services, various transactions are not bound by the time and place of my business and life." with a mean of 3.62. However, the lowest mean was "After using mobile banking services, I can get more accurate product information and services." while the average relative advantage was 3.5. In terms of standard deviation, the highest is "After using mobile banking services, I can get more accurate product information and services.", while the relative advantage is equal to 1.232. On the other hand, my "After using the mobile banking service, I have more convenient, faster, and more time-saving to handle business." in relative advantage has the lowest effectiveness at 1.204.

As can be seen from Table 4, the highest mean value of perception on risk is "The use of mobile banking cannot strictly protect personal information.", and the mean value is 4.09. However, the lowest mean was "Mobile banking won't give timely prompts to avoid losses if you use the wrong operation of mobile banking." while the mean of perception on risk was 3.92. In terms of standard deviation, the highest is "Mobile banking cannot effectively protect personal transaction information.", while perception on risk is equal to 0.749. On the other hand, in perception on risk, "The use of mobile banking cannot strictly protect personal information." has the lowest effectiveness, which was at 0.739.

As can be seen from Table 4, the highest mean of customer satisfaction is "I am satisfied with the use of the mobile banking application." The mean is 3.70. However, the lowest mean was "I am satisfied with the expectations of the affordability of the mobile banking service. I am satisfied that the transaction speed of the mobile banking service met expectations. I am satisfied with the accessibility attributes of mobile banking.", and the mean of customer satisfaction is 3.62. In terms of standard deviation, the highest is "I am satisfied that the transaction speed of the mobile banking service met expectations.", while customer satisfaction is equal to 1.027. On the other hand, in customer satisfaction, "I am satisfied with the expectations of the affordability of the mobile banking service" has the lowest effectiveness at 0.961.

**Table 4:** The result of Mean and Standard Deviation of scale items for each variable

	Mean	Std. Deviation
<b>Speed of Transaction</b>		
<b>ST1: The wait time at the bank branch is reduced compared to before the adoption of the mobile banking channel.</b>	3.83	.996
<b>ST2: Mobile Banking transaction speed is important in daily transactions.</b>	3.85	1.100
<b>ST3: Transactions using the mobile banking channel are faster than before the channel was adopted.</b>	3.84	1.096
<b>ST4: Transactions using mobile banking are faster at bank branches than before I adopted the other digital channels.</b>	3.81	1.108
<b>Accessibility</b>		
<b>AC1: Using mobile banking, it is easy and convenient to log in and out.</b>	4.00	1.055
<b>AC2: Using mobile banking to handle related business, and it is very efficient and satisfied with the service.</b>	3.95	1.070
<b>AC3: The usage rights and access to mobile banking are very clear.</b>	3.81	1.129
<b>AC4: Using mobile banking in the business process is simple and clear.</b>	3.90	1.075
<b>Affordability</b>		

<b>AF1: Using mobile banking can handle bank account transactions effectively and without additional fees.</b>	3.81	1.146
<b>AF2: Mobile Banking affordability is important in transaction-heavy.</b>	3.72	1.194
<b>AF3: Using mobile banking transactions saves me the time and travel costs of going to the branch.</b>	3.78	1.153
<b>Adaptability</b>		
<b>AD1: It has been used mobile banking for various transactions every day.</b>	3.44	1.207
<b>AD2: Using mobile banking is simple and convenient.</b>	3.58	1.202
<b>AD3: Mobile banking is very reliable.</b>	3.71	1.073
<b>AD4: Using mobile banking will process it if a formal contract transaction occurs.</b>	3.61	1.117
<b>Ease of Use</b>		
<b>EU1: Mobile banking is easy to operate for all kinds of businesses.</b>	3.64	1.091
<b>EU2: The interface of mobile banking is very simple.</b>	3.59	1.189
<b>EU3: Mobile banking can be switched freely in different applications.</b>	3.61	1.189
<b>EU4: Mobile Banking can provide operation instructions for handling various businesses.</b>	3.62	1.184
<b>Relative Advantage</b>		
<b>RA1: After using the mobile banking service, I have more convenient, faster, and more time-saving to handle business.</b>	3.55	1.204
<b>RA2: After using mobile banking services, I can get more accurate product information and services.</b>	3.5	1.232
<b>RA3: Using mobile banking services, various transactions are not bound by the time and place of my business and life.</b>	3.62	1.209
<b>Perception on Risk</b>		
<b>PR1: Mobile banking won't give timely prompts to avoid losses if you use the wrong operation of mobile banking.</b>	3.92	.741
<b>PR2: The use of mobile banking cannot strictly protect personal information.</b>	4.09	.739
<b>PR3: Mobile banking cannot effectively protect personal transaction information.</b>	4.06	.749
<b>PR4: The fund protection measures of mobile banking are not very safe and reliable.</b>	4.05	.740
<b>Customer Satisfaction</b>		
<b>CS1: I am satisfied with the expectations of the "affordability" of the mobile banking service.</b>	3.62	.961
<b>CS2: I am satisfied that the "transaction speed" of the mobile banking service met expectations.</b>	3.62	1.027
<b>CS3: I am satisfied with the accessibility attributes of mobile banking.</b>	3.62	1.000
<b>CS4: I am more comfortable using mobile banking than traditional banking or other transaction methods.</b>	3.69	.963
<b>CS5: I am satisfied with the use of the mobile banking application.</b>	3.70	.983

### 4.3 Hypothesis Testing Results

#### 4.3.1 Summary of Multiple Linear Regression of H1, H2, H3, H4, H5, H6, and H7

Through the use of multiple linear regression, Table 5 examines whether the transaction speed, accessibility, affordability, ease of use, relative advantage, and perception of risk of mobile banking services significantly influence consumer satisfaction. From hypothesis 1 to 7, the results show that the effects of all independent variables on customer satisfaction do not overlap, and all the VIF values are all less than 5, there is no multicollinearity problem. The VIF value for transaction speed, affordability, adaptability, usability,

relative advantage, and risk perception is, in that order, 1.178, 1.549, 1.487, 1.689, 1.853, 1.577, and 1.172. At a 95 percent degree of confidence, the R-square is 589. The outcome indicates that there is a difference of approximately 58.9% between all independent factors (speed of transaction, accessibility affordability, adaptability, ease of use, relative advantage, perception of risk) and the dependent variable (consumer satisfaction). These 7 predictors may account for 58.9% of the variance in customer satisfaction, which is significant  $F(7, 391)=80.21, p=.000$ . By looking at the prediction of each independent variable data, the shown The results are speed of transaction ( $\beta = .160, p=.000<.05$ ), accessibility ( $\beta = .139, p=.001<.05$ ),

affordability ( $\beta = .147, p=.000<.05$ ), adaptability ( $\beta = .168, p=.000<.05$ ), ease of use ( $\beta = .184, p=.000<.05$ ), relative advantage ( $\beta = .238, p=.000<.05$ ) positively significant to customer satisfaction. In terms of perceived risk, the data is ( $\beta = .001, p=.957>.05$ ), indicating that customer satisfaction shows perception on risk has no significance.

### **Statistical Hypothesis**

**H1<sub>o</sub>:** The speed of transactions of mobile banking services will have no positive impact on customer satisfaction.

**H1<sub>a</sub>:** The speed of transactions of mobile banking services will have a positive impact on customer satisfaction.

The significant level of transaction speed, as shown in Table 5, was at.000, which was less than 0.05. The conclusion is that transaction speed has an impact on customer satisfaction, with a typical coefficient of.160. The data can be seen, that the transaction speed increased by 1%, and customer satisfaction increased by 16%. As a result, the null hypothesis was rejected.

**H2<sub>o</sub>:** The accessibility of the mobile banking services will have no positive impact on customer satisfaction.

**H2<sub>a</sub>:** The accessibility of the mobile banking services will have a positive impact on customer satisfaction.

The significant level of accessibility, as shown in Table 5, was at.000, which was less than 0.05. As a result, accessibility has an impact on customer happiness, with a standard coefficient of accessibility of.139. It can be seen from the data that accessibility increased by 1 %, and customer satisfaction increased by 13.9%. As a result, the null hypothesis was rejected.

**H3<sub>o</sub>:** The affordability of the mobile banking services will have no positive impact on customer satisfaction.

**H3<sub>a</sub>:** The affordability of the mobile banking services will have a positive impact on customer satisfaction.

The significant level of affordability at.000, which was less than 0.05, is shown in Table 5. As a result, affordability has an impact on consumer happiness, with a standard coefficient of affordability of.147. From the data, it can be seen that affordability increased by 1 %, and customer satisfaction increased by 14.7%. As a result, the null hypothesis was rejected.

**H4<sub>o</sub>:** The adaptability of the mobile banking services will have no positive impact on customer satisfaction.

**H4<sub>a</sub>:** The adaptability of the mobile banking services will have a positive impact on customer satisfaction.

The significant level of adaptation at.000, which was less than 0.05, is shown in Table 5. As a result, adaptability has an impact on customer satisfaction, with a standard coefficient of adaptability of.168. It can be seen from the data that adaptability increased by 1%, and customer satisfaction increased by 16.8%. As a result, the null hypothesis was rejected.

**H5<sub>o</sub>:** The ease of use in mobile banking services will have no positive impact on customer satisfaction.

**H5<sub>a</sub>:** The ease of use in mobile banking services will have a positive impact on customer satisfaction.

The significant level of ease of use is shown in Table 5 at.000, which was less than 0.05. It follows that ease of use has an impact on customer satisfaction, with a standard coefficient of ease of use of.184. The data can be it can be seen that if the adaptability increases by 1%, the customer satisfaction increases by 18.4%. As a result, the null hypothesis was rejected.

**H6<sub>o</sub>:** The relative advantage of mobile banking services will have no positive impact on customer satisfaction.

**H6<sub>a</sub>:** The relative advantage of mobile banking services will have a positive impact on customer satisfaction.

Table 5 displays the relative advantage's significance level at.000, which was less than 0.05. As a result, relative advantage has an impact on customer satisfaction, with a standard coefficient of relative advantage of.238. The data can be seen, If adaptability increases by 1%, customer satisfaction increases by 23.8%. As a result, the null hypothesis was rejected.

**H7<sub>o</sub>:** The perception on risk of mobile banking services will have no positive impact on customer satisfaction.

**H7<sub>a</sub>:** The perception on risk of mobile banking services will have a positive impact on customer satisfaction.

Table 5 shows the significant level of perception of risk at .975, which was more than 0.05. Therefore, the null hypothesis is not rejected. Perception of risk individually does not significantly influence customer satisfaction.

Table 5: Summary of Multiple Linear Regression Analysis for Hypotheses 1to7.

Variables	B	SE B	$\beta$	t	Sig.	VIF
Speed of Transaction (ST)	.150	.040	.160	3.773	.000*	1.718
Accessibility (AC)	.128	.037	.139	3.439	.001	1.549
Affordability (AF)	.124	.033	.147	3.726	.000*	1.487
Adaptability (AD)	.154	.039	.168	3.998	.000*	1.689
Ease of Use (EU)	.157	.038	.184	4.161	.000*	1.853
Relative advantage (RA)	.188	.032	.238	5.844	.000*	1.577
Perception on Risk (PR)	.002	.053	.001	.032	0.975	1.172

Note.  $R^2 = .589$ , Adjusted  $R^2 = .582$ , \* $p < .05$ .  
 Dependent Variable =Customer Satisfaction

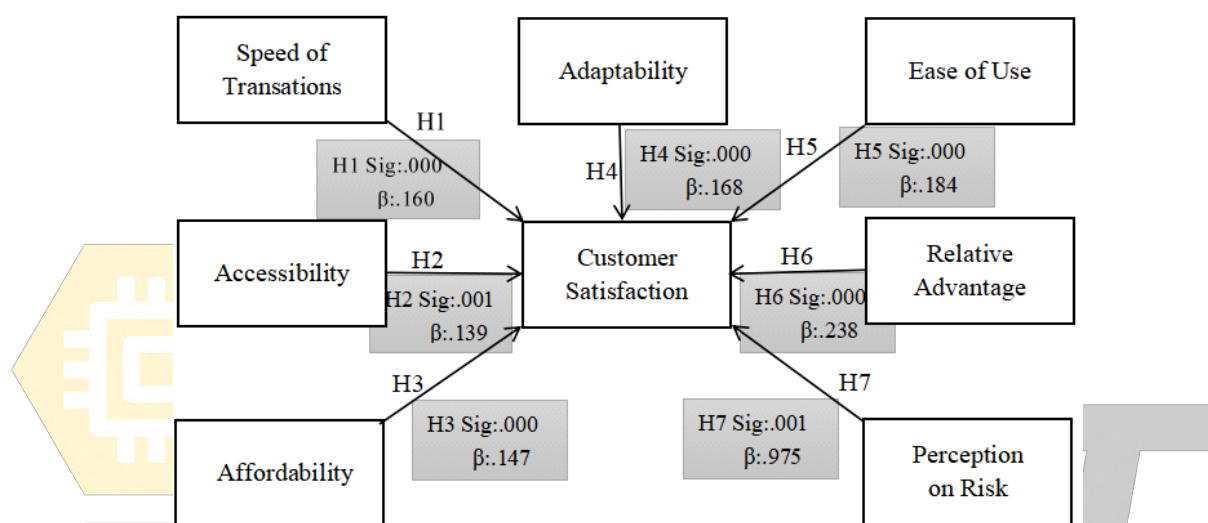


Figure 3: The result of structural model

## 5. CONCLUSION AND RECOMMENDATION

### 5.1 Summary of the study

This study's conclusion is a direct outcome of its precise investigation into how mobile banking services impact consumer satisfaction. Transaction speed, accessibility, affordability, adaptability, ease of use, relative benefit, and risk perception are important considerations. The guiding research questions are: Does the speed of transactions in mobile banking significantly impact consumer satisfaction? Does the accessibility in mobile banking significantly impact consumer satisfaction?

Does the adaptability in mobile banking significantly impact consumer satisfaction? Does the affordability in mobile banking significantly impact consumer satisfaction? Does the ease of use in mobile banking significantly impact consumer satisfaction?

Does the relative advantages in mobile banking significantly impact consumer satisfaction? Does the perceived of risk in mobile banking significantly impact consumer satisfaction? These 7 questions are designed

with descriptive research and are mainly aimed at customers using mobile banking services in China. The study's purpose is not entirely clear, so the sample size was primarily estimated using Cochran's (1997) formula. A total of 425 people's data questionnaires was collected using the convenience sampling and snowball sampling non-probability sampling techniques, and finally, 399 respondents who provided qualified data were sampled for analysis.

The online questionnaire used closed-ended questions, the data collected were raw data and analyzed using SPSS, mainly using frequency, mean, and standard deviation in descriptive statistics. Regression analysis and multiple linear regression were employed in the variable test to assess the hypothesis.

The impact of customer satisfaction was evaluated using multiple linear regression (7 variables). The hypothesis test results showed that all 6 independent variables were rejected and had significant statistical values. 1 independent variable was not rejected and had no statistically significant value. The result is as follows:

Table 6: Summary results from the hypotheses testing

Hypotheses	Significant Value	Standardized Coefficient	Result
H1o: The speed of transactions of mobile banking services will have no positive impact on customer satisfaction.	.000	.160	Rejected
H2o: The accessibility of the mobile banking services will have no positive impact on customer satisfaction.	.001	.139	Rejected
H3o: The affordability of the mobile banking services will have no positive impact on customer satisfaction.	.000	.147	Rejected
H4o: The adaptability of the mobile banking services will have no positive impact on customer satisfaction.	.000	.168	Rejected
H5o: The ease of use in mobile banking services will have no positive impact on customer satisfaction.	.000	.184	Rejected
H6o: The relative advantage of mobile banking services will have no positive impact on customer satisfaction.	.000	.238	Rejected
H7o: The perception on risk of mobile banking services will have no positive impact on customer satisfaction.	.975	.001	Fail to reject

Note. \*P-value <0.05

The hypothesis test results of multiple linear regression show that the most significant factor affecting customer satisfaction is the relative advantage of mobile phone services. The ranking results of the hypothesis test are summarized in the following table 7.

Table 7 shows that the respective variables of mobile banking service-affecting customer satisfaction are ranked from high to low. The relationship between the independent and dependent variables is measured using the beta. The findings indicate that the relative advantage service provided by mobile banking, with a

Beta value of 0.238, is the most significant independent variable connected to customer satisfaction. That is to say, for each additional unit of mobile banking advantage service, customer satisfaction will increase by 0.238 units. Secondly, the ease of use, adaptability, Considering Beta values of 0.184, 0.168, and 0.16, respectively, and speed of transaction of mobile banking also significantly affect customer satisfaction. Customer happiness is also significantly influenced by accessibility and affordability. 0.147, and 0.139. However, the perception on the risk of mobile banking has no obvious significant effect.

Table 7: Strengths of the factor affect the variable that affects customer satisfaction.

Rank	Independent Variable	Beta
1st	Relative Advantage (RA)	.238
2nd	Ease of Use (EU)	.184
3rd	Adaptability (AD)	.168
4th	Speed of Transaction (ST)	.160
5th	Affordability (AF)	.147
6th	Accessibility (AC)	.139

5.2 Discussion and Conclusion

The hypothesis test shows that there are 7 variables affecting customer satisfaction, among which 6 factors include relative advantage, ease of use, adaptability, speed of transaction, affordability, accessibility, etc. Mobile banking service has a significant impact on customer satisfaction.

5.2.1 Relative advantage and customer satisfaction

The results of this study demonstrate a substantial and positive correlation between customer satisfaction and

the relative benefits of mobile banking services, with a significant value of .000. It shows that the mobile banking service has obvious advantages over other channels of transactions, and has a significant impact on customer satisfaction. This is consistent with Jahan and Shahria (2021), when customer satisfaction is higher, the advantages of using mobile banking are higher than other channels. On the contrary, customer satisfaction is low, indicating that the channel advantages of mobile banking and other channels for transactions are not obvious, and customers will not give priority to mobile banking services. Through the descriptive analysis of

customer satisfaction through the questions of the comparative advantage of mobile banking, the average value of the three questions of relative advantage is 3.56. Of all the questions, the lowest average was 3.5, and its question was "After using mobile banking services, I can get more accurate product information and services." The question had the highest standard deviation of 1.235. Since the results with the largest standard deviation data indicate that the survey results are scattered and unstable. To provide better customer service and establish consistency in scoring, it is essential to pay closer attention to how to precisely meet consumers' requests for product information in the mobile banking service.

### **5.2.2 Ease of use and customer satisfaction**

Customer satisfaction and the ease of using mobile banking services are positively and significantly correlated, according to this research test with a significant value of .000. It shows that the ease of use of mobile banking is obvious and has a significant impact on customer satisfaction. In terms of accessibility, research shows that most respondents believe that accessibility is the degree to which a good or service is available to a customer or user when they need it (Uwalaka & Peace, 2020) Customers do not frequently utilize mobile banking, despite it being more convenient. These questions in this part of the questionnaire are descriptive analyses of customer satisfaction. The average of the four questions on the ease of use of mobile banking is 3.62. Among all the questions, the lower average is 3.59 and 3.61. The question is "The interface of mobile banking is very simple, and Mobile banking can be switched freely in different applications", they have the highest standard deviation, both 1.189. Therefore, in terms of the ease of user interface design and use of the flexibility of mobile banking, it is necessary to deeply understand customers' life needs and personal preferences, so that the design and use of mobile banking can be more popular with customers. To ensure the consistency of these two values.

### **5.2.3 Adaptability and customer satisfaction**

The results of this study test demonstrate a significant association between customer satisfaction and the adaptability of mobile banking services, with a considerable value of .000. It demonstrates that the impact on customer satisfaction increases with how clear the flexibility of mobile banking services is. Mobile banking's versatility gives bank customers a more individualized experience. Mobile banking is seen as being quick and efficient by Chen (2013), so higher

customer satisfaction indicates stronger adaptability to mobile banking. On the contrary, customer satisfaction is low, indicating that the adaptability of mobile banking is not obvious, and customers will not give priority to mobile banking services. Through the descriptive analysis of customer satisfaction through the questions on the mobile banking adaptability part of the questionnaire, the mean of the four questions of adaptability is 3.59, and among all the questions, the lowest mean is 3.44. The question is "It has been used mobile banking" for various transactions every day", this question has the highest standard deviation, with 1.207. Since the results of the standard deviation show that the scores of the surveyors are scattered and unstable, the frequency of daily use of mobile banking by customers fluctuates greatly, which means that the daily customer changes of mobile banking are also unstable, and mobile banking needs to pay attention to this aspect of the problem.

### **5.2.4 Speed of transaction and customer satisfaction**

With a considerable value of .000, this study test demonstrates a positive and significant association between customer happiness and the transaction speed of mobile banking services. It shows that the transaction speed of mobile banking is obvious, which has a significant impact on customer satisfaction. The higher the customer satisfaction, the more satisfied the transaction speed of mobile banking. On the contrary, customer satisfaction is low, indicating that the transaction speed of mobile banking is not very obvious, and customers will not give priority to mobile banking services. Descriptive analysis of customer satisfaction through 4 questions of mobile banking transaction speed, the average of these questions is 3.83, and the lowest average of all questions is 3.81, the question is "Transactions using mobile banking are faster at bank branches than before I adopted the other digital channels.", this question has the highest standard deviation of 1.108. Since the results of the standard deviation show that the data of the investigators are scattered and unstable, how the transaction speed of mobile banking branches can meet the needs of customers is a question worthy of consideration by branch banks.

### **5.2.5 Affordability and customer satisfaction**

With a considerable value of .000, this research test demonstrates a favorable and significant association between the cost of mobile banking services and customer satisfaction. It shows that the more obvious the affordability of mobile banking transactions, the more significant the impact on customer satisfaction. When



customer satisfaction is higher, it means that the affordability of using mobile banking is satisfied. On the contrary, customer satisfaction is low, indicating that the affordability of mobile banking is not very obvious, and customers will be dissatisfied with the affordability of mobile banking services. Through the descriptive analysis of customer satisfaction through the questions in this part of the questionnaire on mobile banking affordability, the average of the three questions in this part is 3.77. Among all the questions, the lowest average is 3.72, and the question "Mobile banking affordability is important in transaction-heavy.", this question has the highest standard deviation at 1.194. Since the results of the standard deviation show that the data of the investigators are scattered and unstable, the affordability of mobile banking needs to pay attention to the scattered needs of customers with frequent transactions, deeply understand the problems of customers, and solve them as soon as possible to ensure the consistency of the values.

#### **5.2.6 Accessibility and customer satisfaction**

This study's test demonstrates that, with a significant value of .001, there is a connection between customer happiness and the availability of mobile banking services. It demonstrates that consumer happiness is significantly impacted by how easily accessible mobile banking services are, and vice versa. Customer satisfaction will rise when customer satisfaction levels are higher since this will boost the accessibility of mobile banking technologies. On the contrary, customer satisfaction is low, indicating that the accessibility of mobile banking is not very obvious. Through the descriptive analysis of customer satisfaction through the questions in the mobile banking accessibility part of the questionnaire, the average of the four accessibility questions is 3.92. Among all the questions, the lowest average is 3.81. The question is "The usage rights and access to mobile banking" are very clear.", this question has the highest standard deviation of 1.129. Since the results of the standard deviation show that the surveyor's data is scattered and unstable, the mobile banking accessibility needs to be further clarified for customers in terms of access rights and channels to maintain the consistency of the data.

#### **5.3 Recommendations**

According to the conclusion, the research results show that the mobile banking service ultimately affects the relationship between the variables of customer satisfaction. The relevant influencing factors in the study, speed of transactions, accessibility, affordability, adaptability, ease of use, and relative advantage have a

big impact on consumer happiness. Therefore, the relative benefit of mobile banking has a highly significant effect on customer satisfaction, while the impact of mobile banking accessibility on customer satisfaction is marginally significant.

Therefore, in the face of many mobile payment methods, the relative advantages of mobile banking are particularly important. Customers can choose mobile banking transactions and are satisfied with their services. More factors are that the advantages of mobile banking are better and more satisfactory than other transaction channels. For example, mobile banking transactions are not affected by time and location, making customer transactions particularly convenient and less restricted by outbound traffic or working hours of bank outlets. At the same time, according to the customer's use of mobile banking, mobile banking will meet customers' needs to enhance the current stage and future development. For example, in terms of technology, mobile banking needs to update and improve the interface design and operational flexibility of mobile banking applications promptly according to the needs and preferences of customers, especially for customers who have a lot of demand for mobile banking transactions. Because of easy-to-use and efficient applications, customers will be more satisfied. In terms of services, mobile banking needs to strengthen communication with customers. The bank promotes all kinds of financial products, as well as customers using mobile banking rights and ways. Customers need a more accurate and comprehensive understanding to reduce their economic losses and unnecessary troubles. Unnecessary financial loss or other unnecessary trouble. Finally, factors such as speed of transactions, accessibility, affordability, adaptability, ease of use, and relative advantage of mobile banking affect customer satisfaction, so banks need to pay more attention to these related factors because customers have too many choices and can one or several unfavorable factors may change customers to use other methods of transactions. Only by improving customer satisfaction can customers be guaranteed to use mobile banking for lasting reasons.

According to the research findings and certain recommendations for mobile banking, it is advantageous for the growth of mobile banking. Studying the influencing factors of mobile banking will help improve mobile banking services to serve customers better and expand performance. Faced with the instability of customers, the diversification of needs, and the complexity of customers, mobile banking needs to pay special attention to various issues arising from transactions, and no one factor can be taken lightly,

especially during the epidemic, the demand and purpose of customers using mobile banking, brings many challenges and opportunities to banks, and cannot ignore any existing problems. Strengthen effective communication with customers, communicate well with customers and understand real problems to obtain more accurate and comprehensive solutions. After all, the loss of one customer will affect more customers, bringing unprecedented challenges to the development of the bank.

#### **5.4 Further Study**

Due to the epidemic and China's epidemic prevention and control policies, online transactions have become a trend. Different customer needs and usage scenarios will inevitably lead to different degrees of impact on mobile banking services. This study only focuses on seven variables that affect customer satisfaction, namely relative advantage, ease of use, adaptability, speed of transaction, affordability, and accessibility. Among them, perceived risk has no significant effect on customer satisfaction. For further research, it is necessary to further study the perceived risk to determine the impact of job satisfaction analysis. The aspects that have a big impact also require a more thorough and accurate data analysis to fully comprehend the benefits and drawbacks of mobile banking services and create more impactful adjustments. 350 million users are using mobile banking in China, so more samples and investigators are needed in the data analysis to increase the credibility of the research. In addition, to the popularity and efficiency of mobile banking in China, studying the relationship between customer demographics and mobile banking services, this aspect will be better researched on the personalized service of mobile banking and may be more useful for mobile banking services to customers. Professional, more personalized challenges.

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