Thesis for the Degree of Doctor of Philosophy

Antecedents of the Continuous Intention to Use of Mobile Payment Platforms: Evidence From TenPay and KakaoPay

by

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Graduate School of Management of Technology

Pukyong National University

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모바일결제플랫품 지속사용의도에 영향을주는 요소에 대한 연구: 텐페이와 카카오페이의 비교연구를 중심으로

Advisor: Prof. Kiho Kwak

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모바일결제플랫품 지속사용의도에 영향을주는 요소에 대한 연구:

텐페이와 카카오페이의 비교연구를 중심으로

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요약

모바일 결제 플랫폼은 스마트폰 등 모바일 기기를 이용하여 온오프라인 상에서 현금이나 은행카드, 신용카드 사용 없이 사용자 간 재화, 서비스 거래에 따른 화폐적 가치의 이전을 용이하게 하는 플랫폼을 의미한다. 이러한 모바일 결제 플랫폼은 오늘날 무선 네트워크의 고도화, 스마트폰의 보급 완료, 그리고 플랫폼 비즈니스의 성장에 따라 그 활용도가 매우 높다. 특히 전통 은행 뿐 아니라 포털 등 플랫폼 기업, 이동통신사업자, 카드사업자, 스마트폰 제조사 등 다양한 이종 산업에서 사업자들이 플랫폼을 구축, 운영하면서 플랫폼에서 일어나는 결제 규모도 매우 빠르게 증가하고 있다. 실제로 센소타워의 조사에 따르면 2021년 상반기 세계 모바일 결제 금액은 전년 동기 대비 24.8% 증가한 649억 달러로 사상 최대치를 기록하였다. 그러나 이와 동시에 국가 간 모바일 결제 이용률은 큰 차이를 보이고 있다. 특히 2019년 기준 중국은 모바일 인터넷 사용자 중 모바일 결제 플랫폼 이용자 비율이 71.4%에 달하는 반면, 한국은 28.4%에 그치고 있다. 이는 결국 모바

일 결제 플랫폼이 제공하는 효익에 대한 사용자 인식과 사용자 특성, 그리고 모바일 플랫폼의 특성에 따라 사용자가 느끼는 가치가 다르고, 이에 따라 지속사용 의도에도 다른 영향을 미침을 시사한다. 그럼에도 불구하고,, 기존 연구에서는 공통적으로 단일 국가 표본으로만 연구를 진행하였다는 한계점이 존재하여 왔다. 따라서 본 연구에서는 한국과 중국의 모바일 결제 플랫폼 사용자에 대한 설문 조사를 진행하여 비교연구를 진행하고자 한다또한 이전 연구에서는 ICT 도구 활용에 대한 사용자들의 수용과 사용 행위에 대한 연구를 하기 위해 대부분 기술수용모형(TAM)과 통합기술수용이론(UTAUT)을 사용해 왔다. 그러나 모바일 결제 플랫폼은 이메일, 문서작성 SW와 달리 그 신규성이 높고, 기존 기술과의 경쟁으로 인해 수용 시, 사용자는 이익 뿐 아니라 비용도 느끼게 되는 특성이 강하다. 이에 따라 본 연구에서는 모바일 결제 플랫폼의 지속적인 사용의도에 미치는 영향을 연구하기 위해 가치기반수용모델(VAM)을 활용하고, 중요 사용자 특성, 그리고 모바일 플랫폼의 특성 변수를 조절변수로 추가하여 분석을 시도하였다.

주제어: 가치기반수용모델, 모바일 결제 플랫폼, 지속사용의도, 텐페이, 카카오페이

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Abstract

New information and communications technology are dramatically transforming human life, economic systems and society into something very different from what we have done and thought over the past decades, with more information and communications technology based banking and shopping financial necessary.

"Fintech" is an abbreviation of "finance" and "technology", meaning the integration of financial services and IT forged by industrial change, and enhancing the efficiency of an industry financial system using mobile-centric IT technology.As the fourth industrial revolution changed the financial system, Fintech's popularity increased .The most important service among the various Fintech services is mobile payment services, Since the 2016 World Economic Forum mentioned the fourth industrial revolution, Fintech dominated by mobile payment te

chnology has become the main driving force of the fourth industrial revolution, and will have a considerable impact on the world industrial pattern for a considerable time to come.

Mobile payment is a payment method for payment or transfer using a mobile device with the advantage of utilizing wireless infrastructure convenience that can be used anytime and anywhere. Mobile payments has been a promising alternative to reducing cash use and has been proposed as a solution to activate the digital markets. Mobile payment is one of the most important rings of Fintech---mobile payment, which has a huge impact on the development of Fintech and the lifestyle changes of consumers. In particular, the majority of consumers using smartphones go beyond online and offline, using mobile payment services, and smartphones no longer stay solely on the capabilities of communication means and media players. Especially after the outbreak of COVID-19, it has accelerated the development of cashless payments.

The latest mobile payment data in 2020 shows: according to Fintech Report 2021 –Digital Payment, released by Statista The global digital payment market size in 2020 was $5,474.6 billion, The world's largest digital payment market in 2020 is China, Digital payments amounted to $2496.5 billion, Accounting for 45.6%; Second by the United States, The digital payment market is $1035.4 billion, Accounting for 18.91%; The European digital payment market was $919 in $2020.8 billion, it represented 16.80%.

In recent years, the global mobile payment market has shown a rapid growth trend, but there are great differences in the mobile payment development l

evel in different countries. Different countries have different development stages, among which two of them are the most representative. First, South Korea has the highest smartphone penetration rate in the world, reaching 95% and the earlier development of mobile payment, but the development of mobile payment platform has still not reached its peak. Second, in China, China's mobile payment platform development started late, but its scale has reached the first in the world. In 2020, China's market size accounted for 45.60% of the world, the amount of US $2496.5 billion, the first in the world, is currently the largest Fintech market in the world <Fintech Report 2021 –Digital Payments>.Mobile payment platform providers are also looking for more breakthroughs.

At present, studies on mobile payment platforms are being conducted around the world. Mobile payment is not only the area of concern for governments and providers in recent years, but also the focus of scholars around the world. For example, the US, Europe, Asia, Africa, the most of which is the intention of user mobile payment.Among these scholars have put forward the common research limitations and prospects of research: only research samples from a single country, and want to conduct comparative research on mobile payment platforms in the future.

In the past research, scholars in the study of the acceptance and continuous intention to use of mobile payment platform technology, mostly use TAM, UTAUT, but mobile payment technology and other technology is different, users itself is not only technology recipients, but also consumers, they mostly use and use new information and communication technology for personal purposes,

voluntary adopt and use the cost borne by the individual is the mobile Internet, is the consumer, not just technology users. In addition to user acceptance of the technology itself, user perceived value of mobile payment technology platforms is very important. Therefore, in the research, it is not only important to analyze the factors of the platform itself, but also to adopt the perceived value of consumers for the continuous intention to use of the mobile payment platform.

There were four research objectives in this research:

1) Implement literature research through the theoretical investigation of the South Korea-China mobile payment platforms.Comparative research was conducted through different mobile payment platforms and different user groups.

2) The effect of user‘s perceived value in mobile payment platforms on continuous intention to use.

3) The effect of beneficial and sacrificial factors of the mobile payment on the perceived value.

4) The effect of moderating variables on beneficial and sacrificial factors of mobile payment platform on perceived value.

There are three innovation points in this study:

1) In line with the latest study trends, a comparative analysis was used in this study.The two most representative countries in the development of mobile payment platforms: China and South Korea are selected to compare and analyze the data of different mobile payment platforms and user samples in the two countries and draw important conclusions.

2) Unlike previous studies, this study uses user perceived value as an media tor variable to explore its effect on continuous intention to use intent.This stud y extends the VAM model and combines the UTAUT, diffusion of innovation theory, etc., to use the new extension model for mobile payment platform rese arch.

3) This study clearly divides the factors of mobile payment platform into be nefits and sacrifices, to more clearly analyze the effect of the characteristics of mobile platform on user perceived value and continuous intention to use. Fro m the perspective of user and platform, the biggest different points between th e two countries were selected as four moderating variables.

There are three research findings in this research:

1) In the extended model of VAM, the higher the user perceived value, t he higher the user intention of continuous intention to use, and proposed that mobile payment platform providers should pay more attention to user perceived value in their development and operation. It also provides a new direction for future research on the continuous willingness to use mobile payment platform s.

2) The results of this study shows that the division of beneficial and sacri ficial factors of mobile payment platform is necessary, which can clearly show the effect of various characteristics on perceived value and continuous intentio n to use. The characteristics and effect of mobile payment platform can make a clear judgment of continuous intention to use, make suggestions to the mobil e payment platform providers: in mobile payment platform provider technology,

optimize their platform and system, reduce operating complexity, mainly bring economic value to users and increase their own influence. Governments should establish and improve the supervision mechanism of mobile payment platforms, and improve relevant laws to ensure transaction safety.

3) The results of this study show that using the method of comparative research concludes that the two user samples are different, and we can have a comprehensive understanding of the different effect of mobile payment platforms in different stages of development and different characteristics, and for the continuous intention to use of customers. Based on the research results, we suggest that mobile payment platform providers enhance the compatibility of their own platform. Mobile payment platform providers should also strengthen their cooperation with other companies, banks, governments and other fields. It is suggested that the government establish a good market competition mechanism to promote the innovative development of mobile payment platform provider enterprises.

Key Words: Mobile Payment Platform; Continuous Intention to Use; Perceived Value;TenPay; KakaoPay

I. Introduction

1.1 Research Background

New information and communication technologies are dramatically transforming human life, economical systems, and society into something radically different from what we have done and thought in the past decades (Tasca, Aste, Pelizzon and Perony, 2016). Information and communications technology (ICT) based banking and shopping based financial innovation becomes a new necessity. Fintech combining finance and technology has been that innovation that has emerged (Dahlberg et al., 2015).

"Fintech" is a portmanteau of "finance" and "technology" and refers to the integration of financial services and IT which enhances the efficiency of industrial financial systems using mobile-centric IT technology. As the fourth industrial revolution changed the financial system, Fintech's popularity has increased (Tasca et al., 2016). In the financial world, Fintech is an innovative set of services that utilize new technologies to provide differentiated financial service technologies such as mobile, social media, and the Internet of Things. A recent example is with mobile-based payment and settlement systems, which is the most representative service. In the industry, this phenomenon usually refers to non-financial enterprises which use innovative technology to provide remittance, payment services, settlement, and investment services. (Kim, Yonghee, et al., 201

5). Some main examples include Apple Pay, TenPay and KakaoPay.

The most popular service among the various Fintech services is mobile payment platform services (Lee et al., 2019) where mobile payment is a method for financial payment or transfer using a mobile device. These mobile devices can take direct advantage of convenient, wireless infrastructure that can be used anytime and anywhere (Iman, 2018). Mobile payments have been a promising alternative to reducing cash use and has been proposed as a solution for activating the digital market (Ondrus and Pigneur., 2006) believed that mobile payment services have already been successful in the market.

Mobile payment is one of the most important rings of Fintech, digital payment, which has a huge impact on the development of Fintech and the changing lifestyles of consumers. In particular, the majority of consumers using smart phones for mobile payment services go beyond the smartphone's basic usages and no longer rely solely on their communication and media players capabilities (Dahlberg and Ondrus, 2015).

With the Fourth Industrial Revolution theme at the World Economic Forum in 2016, some main driving forces of the fourth industrial revolution have been identified as artificial intelligence, the Internet of Things, 3D technology, big data, cloud computing, and mobile settlement systems. These will have a significant impact on the world's industrial patterns for a long time.

"Mobile payment" is a service that settles payments without the need for always entering one's card number or national certification information. After first connecting to a financial service with user's credit card information, users

can authenticate through username and password or other mobile phone authentication methods (Agarwal, et al., 2020;Liébana-Cabanillas, F et al., 2015). Direct mobile payment settlement can be done through technologies of close wireless communication called Near Field Communication (NFC) or Magnetic Secure Transmission (MST), and by using a camera to scan a QR code.

During the initial development period of mobile payment, the mobile payment scheme first appeared in South Korea and Japan. At the time, South Korea's three major mobile operators (SKT, KTF, LGT) mainly promoted the mobile payment business based on infrared technology, while Japan's mobile operator (NTT DoCoMo) launched a mobile payment business based on "IC chips" chips. South Korea developed the first protocols, but it was developed more slowly. At present, the mobile coverage rate of smart phones in South Korea is the highest in the world, reaching 95%, and has a transaction scale of 41 trillion won according to a 2020 survey. As reported by a questionnaire survey from the Bank of Korea in November 2017, the proportion of people using mobile banking services accounted for only 46.0%, a considerable part represented account inquiry. In particular, the ratio of "mobile payment services" using mobile devices to settle goods in stores and online represents 26.1% (Bank of Korea, 2021).

In the past decade of mobile payment, mobile payments have grown rapidly mostly due to usage in China. In 2020, China represented 45.6% of the world's usage, totaling US $2496.5 billion, and ranking first in the world. Since 2013, China's mobile payment has grown rapidly, with Alipay mobile payment

transactions being the largest share, mainly due to remote payment. During the 2014 Spring Festival, the WeChat app launched the "WeChat Lucky Money" function, which quickly led to the rapid growth of P2P transfer transaction volume. In that year, China's mobile virtual account transfer growth rate reached 956.3%. By contrast, US mobile P2P transfer transactions grew by only 136% in 2014. Chinese domestic mobile payments scale and growth rates are significantly higher than those of the United States. In 2016, China's QR code payment grew 1038%. At present, scanning QR code payment has been popularized in every corner of China, from the northwest plateau to the southeast coast, and users only need a smartphone without need to carry a wallet.

Mobile payment is seeing a lot of rapidly increasing, emerging research with many countries studying mobile payments. These include the United States (Dewan & Chen, 2005), and regions of Europe (Staykova,J Damsgaard, 2020) and Asia (Moghavvemi et al., 2020). For a lot of national research, most scholars proposed the same common research limitations of just studying the national samples. Future research directions could include comparative research from different countries.

It is crucial to select two leading mobile payment usage countries from China and South Korea for a comparative study. Previous research on mobile payment platforms was mostly based on model theories of Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Theory of Planned Behavior (TPB). These model theories were originally developed to explain the personal adoption of traditional technologies (e.g.

spreadsheets, email, and software development tools) in an organizational environment. However, model theories such as TAM have their limitations in interpreting the adoption of new information and communication technologies (ICT). For work purposes, the cost of adoption is borne through mandatory organization motives. In contrast, the adopters and users of new ICT are the individuals who play a dual role of technology users and service consumers. They mostly adopt and use new ICT technologies for personal purposes, and the cost of adoption is borne through voluntary individual motives are the consumer of the mobile Internet, not just the technology users (Kim, H.W., Chan, H.C., & Gupta, S, 2007). Therefore, for the adoption of mobile payment platforms, the consumer perceived value is of utmost important.

Therefore, according to the characteristics of contemporary mobile payment platforms, we have innovated on the model. The mobile payment platform has made benefits and sacrifices clear with taking consumer perception as the mediator variable and examining the intention of continuous intention to use. According to the following differences from China and South Korea: 1. Consumer characteristics, 2. Developmental characteristics of mobile payment platform, select moderator variables. The biggest different choice between Chinese and South Korean users: Personal Innovativeness, Impulse Buying Tendency, from China and South Korean mobile payment platform features: Data Analysis Capability, Complementary in Alliance. These act as the four moderating variables in the full comparative analysis.

1.2 Research Objectives

In this paper, we study the relationship between the user perceived value of mobile payment platforms and the continuous intention to use by introducing the Value-based adoption model (VAM) and emphasizing the influence of the benefits and sacrifices of mobile payment platform on perceived value. One of the most important goals of this paper is to empirically test the relationship between the benefits and sacrifices and the perceived value of mobile payment platforms. The biggest difference in choice between Chinese and South Korean users is with personal innovativeness and impulse buying tendency. The main characteristics of mobile payment platforms in China and South Korea are moderating roles with data analysis capability and Complementary in Alliance. The perceived value of the mobile payment platform will actively increase the affirmation of continuous intention to use and will lead to people being more confident in their past choices. Therefore, customers can share experience with other groups of customers and encourage new purchases, while enterprises can use value-added technology services to build a customer system. It is believed that mobile payment platforms help with user perceived value and achieve user retention rates.

There were four research objectives in this research:

(1) Implement literature research through the theoretical investigation of the South Korea-China mobile payment platform.Comparative research was conducted through different national mobile payment platforms and different user groups.

(2) Verify the effect of user-perceived value in mobile payment platforms on continuous intention to use.

(3) Verify the effect of Benefits and sacrifices of the mobile payment on the perceived value.

(4) Verify the effect of moderating variables on the benefits and sacrifices of mobile mobile payment platform and perceived value. Two representative s urvey samples and the largest difference of the platform are found as moderati ng variables; Personal Innovativeness, Impulse Buying Tendency, Data Analysis Capability, Complementary in Alliance.

Therefore, according to the comparative research, in the relationship betwe en the perceived value of mobile payment platform users and continuous intent ion to use, therefore, the government policy for mobile payment policy, for dif ferent consumer groups to provide different services for the supervision and m anagement of mobile payment platform, provide research basis for future resear chers.

1.3 Summary of Findings & Contribution

There are three innovation points in this research:

1) In line with the latest study trends, a comparative analysis was used in this study.The two most representative countries in the development of mobile payment platforms: China and South Korea are selected to compare and analy ze the data of different mobile payment platforms and user samples in the two countries and draw important conclusions.

2) Unlike previous studies, this study uses user perceived value as an mediator variable to explore its effect on continuous intention to use intent.This study extends the VAM model and combines the TAM, UTAUT, diffusion of innovation theory, etc., to use the new extension model for mobile payment platform research.

3) This study clearly divides the factors of mobile payment platform into benefits and sacrifice, to more clearly analyze the impact of the characteristics of mobile platform on user perceived value and continuous intention to use. From the perspective of user and platform, the biggest different points between the two countries were selected as four moderating variables.

There are three study findings in this research:

1) The results of this study show that the division of beneficial and sacrificial factors of mobile payment platform is very necessary, which can clearly show the impact of various characteristics on perceived value and continuous intention to use. The characteristics and impact of mobile payment platform can make a clear judgment of continuous intention to use, make suggestions to the mobile payment platform provider: in mobile payment platform provider technology, optimize their platform and system, reduce operating complexity, mainly bring economic value to users and increase their own influence.Government should establish and improve the supervision mechanism of mobile payment platforms, improve relevant laws to ensure transaction safety.

2) In the extended model of VAM, the higher the user perceived value, the higher the user intention of continuous intention to use, and proposed that

mobile payment platform providers should pay more attention to user perceived value in their development and operation.It also provides a new direction for future research on the continuous willingness to use mobile payment platforms.

3) The results of this study show that using the method of comparative re search, the two user samples are very different, and we can have a comprehen sive understanding of the different impact of mobile payment platform in differ ent stages of development and different characteristics, and for the continuous i ntention to use of customers.Based on the research results, we suggest that mo bile payment platform providers enhance the compatibility of their own platfor m, mobile payment platform providers should also strengthen their cooperation with other companies, banks, governments and other fields in other fields.It is suggested that the government establish a good market competition mechanism to promote the innovative development of mobile payment platform provider e nterprises.

II. Theoretical Background

1.Definition of Mobile Payment Platform and Industrial Formation

1.1 Definitions

There are various definitions of mobile payments in existing studies. There fore, it will be important to explore the reasonableness of the current definitio ns of mobile payments. Mobile payments are widely defined as a service desig ned to provide users with functions to initiate, approve, and complete financial transactions that are transferred via mobile devices through a mobile network or wireless communication technology (Dahlberg et al, 2003; Liebana-Cabanills et al, 2014; Slade et al, 2015). There are different kinds of mobile payment methods; however, the most important concept is that transactions go through a mobile payment platform, regardless the actual method of payment. Specificall y, for currently available mobile payment platform methods, they can be divide d into three different categories: mobile proximity payment, mobile peer-to-peer, and mobile in-app payment (Bhattacherjee, 2001).

First, mobile proximity service is a new mobile payment technology that utilizes technologies like Bluetooth and NFC to exchange payment information between mobile and credit card terminals and to complete offline transactions (Chandra et al., 2010). mobile payment platform services are typically available to customers through smartphone manufacturers (e.g., as Apple, Samsung) or financial institutions (e.g., Visa, MasterCard, Bank of America). One possible u se-case of this is when an individual is able to pay for goods and services si

mply by shaking their smartphone near a card reader in a retail store. The big gest benefit of mobile payment platform services for individuals is no longer t he need to carry cash, credit cards, or a wallet (Cai & Xu, 2006).

Second, mobile peer-to-peer (MP2P) payment service is a mobile payment technology adopted by younger individuals, and MP2P payment is defined as a payment transaction using a mobile browser and a means of payment via mobile applications(Karnouskos & Fokus, 2004). These services allow individua ls to make money through mobile apps. For example, individuals can share res taurant fees, group event tickets, and travel expenses through MP2P service tra nsfers.

Finally, mobile in-app payment (MIP) service is a mobile payment technol ogy where individuals can pay for goods and services from prepaid card infor mation stored on a smartphone app. The MIP service can use barcodes to stor e prepaid card information form proprietary stores and brands (e.g., Starbucks mobile app) on smartphones. Not only can individuals collect, track, and use r oyalties from personally frequented brands and stores, but, on mobile devices, t hey can also use prepaid store card balances for merchandise settlement (Pinol a, 2017). Also, mobile payment platform is likely to be a new advertising plat form for better measures with ad effectiveness.

No matter which method, payment goes through a mobile payment platfor m, which is an important mobile payment carrier.

1.2 Process of Industry Formation

At present, the global mobile payment platform industry has entered a sta ge of diversified development. This development mainly relies on the developm ent of Internet technology and the popularization of smartphones, which promot es the rapid growth of mobile payments (Hsu et al., 2015).

The 1990s , in the United States, computer network technology, financial s ervices industry, and e-commerce develop rapidly. With their thorough credit c ard guarantee system, a financial support system, and a developed logistics sys tem all greatly helped to promote the development of commercial transactions through the Internet. Driven by the development of these technologies, secure and convenient credit cards became the main payment tool with online paymen ts being linked to credit cards. The company now known as PayPal,began oper ating in October 1999, and currently is the world's largest and most representa tive online payment service provider that has a wide range of services such as online payment, mobile payment, offline payment, and prepaid payment (Leon g et al., 2013).

In Europe, several large banks, including Midland Bank, had invested larg e sums of money to develop the online payment system known as Mondex. H owever, due to high cost, it was not deemed as effective as expected (Liu et al., 2015). In 1994, the EU had already issued a regulation on settlement adva nce deposits which stated that temporary or permanent deposits in "digital purs es" symbolize purchasing power of universal value and should be equivalent to bank advance deposits. That indicated that digital currency could only be issu

ed through banks (Oliveira et al., 2016).

Several Asia countries, including South Korea, had introduced regulations on mobile payments. Singapore had long accepted online payment systems and creating The digital Transaction Act of 1998. This added its own unique rules in addition to its content and form. The domestic agency responsible for managing and overseeing online payment system is the E-commerce Policy Council (Slade et al., 2015).

Japan enacted the Basic Law of Information Act in 1994, and followed that up with a unified plan for e-commerce in 1997, along with an e-signature law on certification operations in 2000. These follow-up legislations had revised many problems existing in the field of e-commerce which reflected the developing e-commerce environment. These legislations dealt with the effectiveness of the e-signature law, the specification of certification services, the significance of digital payment, and the supervision of online transactions. The agency overseeing the online payment system is the digital Commerce Promotion Commission (Lee et al.,2015).

In South Korea,Since 1999, the Basic Law of E-commerce since 1999; the main meaning of both laws is to determine the effectiveness of digital signatures and give moderating authority to take necessary measures to protect users and participants of e-commerce. The e-commerce laws, in particular, the digital information and digital signature law, the security and development of e-commerce, and the protection of consumer rights and interests stipulated the basic code of conduct for e-commerce business in a relatively comprehensive man

ner. In South Korea, the agency managing and supervising online payment inst itutions is the Financial Oversight Commission (Mimouni & Volle,2010).

From 2000-2010 , in the United States, PayPal had grown to 197 million c ustomer accounts in 2016, up 10% year over year, and completed 6.1 billion s ettlements, up 24% from the previous year. Total trading volume was $345 bil lion, up 26% year over year, and online payments tended to grow.

In Europe, the EU had been actively strengthening the management and o versight of digital currency transactions. In 2000, the EU issued digital currenc y moderating regulations to regulate online payment institutions and to qualify for an online payment system business a license from a banking or digital cur rency company must be obtained (Lu et al., 2011). Starting around 2010, the EU was in an era of rapid development for global mobile payments while thei r moderating mechanism were increasingly maturing.

Within the European Union, there are mainly five payment methods: chec ks, credit cards, prepaid cards, digital currency, and debit cards. With the deve lopment of their economies and society, the market share of digital payment c ontinued to expand year over year. In the UK, PayPal had the largest market share, but local brand Skrill, formally called Money bookers during this timefr ame, was also competitive and influential. Skrill's business had also spread to more than 200 countries and regions worldwide and offering more than 100 pa yment methods. In the EU, online payment institutions listed as banks are subj ect to strong regulations and all EU member states must independently decide which institutions are considered online payment institutions based on the busin

ess characteristics of the service provider. In 2004, the UK had licensed PayPa l for digital currency trading while Luxembourg had only issued a bank licens e in 2007. (Liu, Z., Ben, S., & Zhang, R.2019)

2011-Today , in the United States,During this period, the moderating legisl ation had been set well, and that allowed mobile payment in the United States to start to mature. Looking at Paypal and their legal status, some see it as a profit institution with a money transfer and monetary functions, and not as a bank or financial institution. The FDIC believes that the settlement deposits us ed by the online payment system are the liabilities of the online payment ente rprise, rather than those specified in the federal banking law, and are not eligi ble for a banking license. However, in the United States, states also apply thei r own laws; therefore, it is necessary to look at federal and state laws.

Article 2 of the Uniform Monetary Services Act (UMSA) requires Mobile payment platform institutions to provide information on the name, location, sc ope of business activities, and criminal record and litigation records for the pa st 10 years ago. The United States has vague rules on the amount of assets of applied companies. For example, UMSA indicates that non-financial institution s formally conduct settlement services with $50,000 in security obligation fees, increasing by $10,000 for each additional location up to a maximum of $250, 000. During this period, the United States proposed clear withdrawal standards for currency service providers, and the UMSA detailed the conditions for the suspension and cancellation of moderating business licenses (Upadhyay & Jaha nyan, 2016).

As mentioned above, the United States exercises federal and state oversigh t over online payment institutions. At the core of the transaction process, state regulators can regulate the business of online payment systems institutions wit hout conflict from other various laws and regulations. In the settlement predep osit section, the United States stipulates that the online payment system institut ion must separate its own funds from the customer predeposit account. This pr events the customer's deposits from being used for operation expenses or repai d in debt, which could harm the customer. The United States also requires onl ine payments to open interest-free accounts that deposit customers' deposits in a percentage. The maximum amount is $100,000. This directly regards the pay ment of the deposit as a liability to online payers and balances their interests against customers.(Taylor, S., & Todd, P. A.1995)

In the European Union,Applications for an online payment institution licen se need to submit information like anti-money laundering schemes, anti-terrorist fund progras, corporate governance structure, and enterprise directors and seni or management identification certificates. It is stipulated that the stock capital of online payment institutions shall not be less than EUR 350,000, and the pre scribed minimum payment services shall be met. In addition, it can be used th roughout the EU as long as a license is obtained in one of the EU member st ates. Currently, payment deposits held by online payment institutions are regard ed as institutional liabilities and strictly restricted for commercial activities, whi ch ensures the security of customer funds. Also, a risk reserve system is also established, and online payment institutions must open a special account in the

European Central Bank to store risk reserve to manage financial risks and en sure customer funds are safe (Roldan et al., 2012).

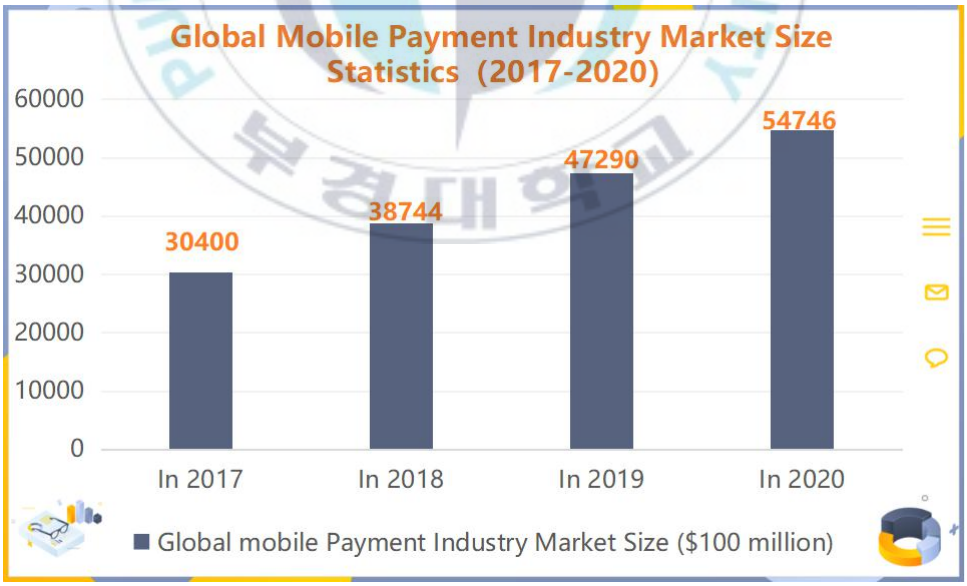
1.3 The Current State of Global Mobile Payments

1.3.1 The Current State of Global Mobile Payments

1) The global mobile payment market is growing year by year.

According to Statista, the Fintech Report 2021 – Digital Payments, the 20 20 annual global digital payment market size was $5474.6 billion, of which th e digital commercial payment market reached $3466.6 billion, while the mobile POS payment market reached $2008 billion.

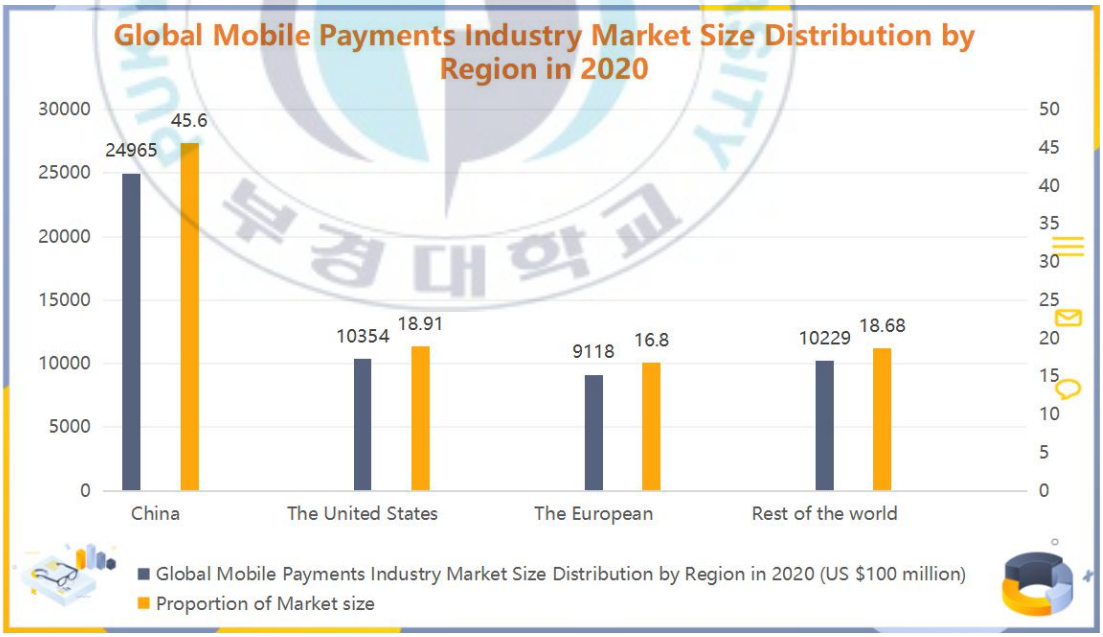
<Table 2-1 > Global Mobile Payment Industry Market Size Statistics (2017-2020)



2) China is the world's largest mobile payment market.

In recent years, the global mobile payment market has shown a rapid gro wth trend, but there are large differences in the mobile payment development l evel of different countries. According to the Fintech Report 2021 – Digital Pa yments report released by Statista, the world's largest digital payment market i n 2020 was China at $2496.5 billion (45.6% market share), followed by the U nited States at $1035.4 billion (18.91%), and the European Union at $919.8 bil lion (16.80%).

<Table 2-2 > Global Mobile Payment Industry Market Size Distribution by Region i n 2020

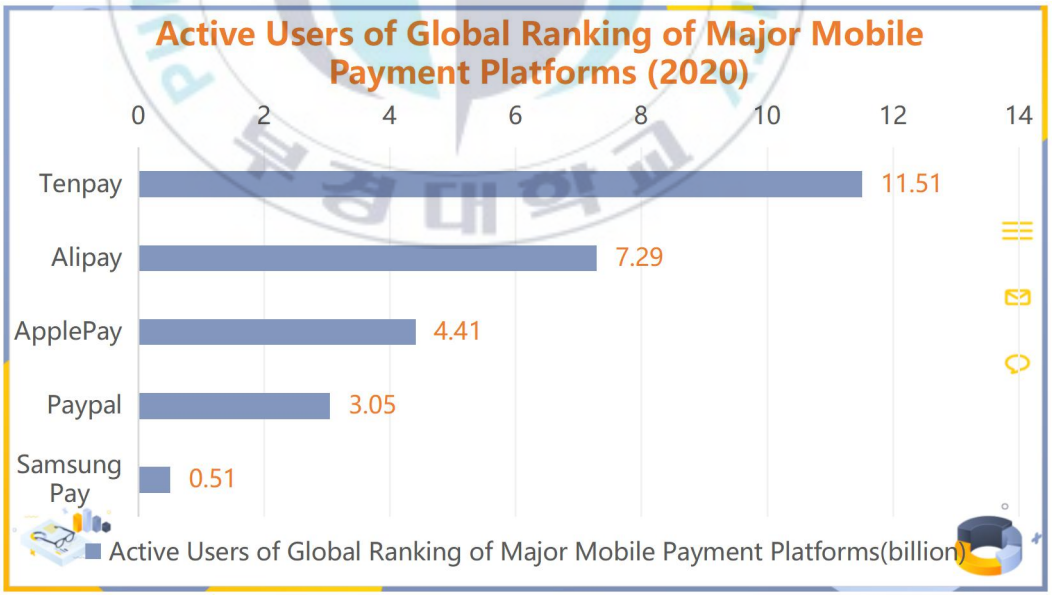


In terms of the number of active users on mobile payment platforms, Chi

na also has a big advantage. As China's large population is driven by its mobi le payment industry, the global mobile payment market is gradually dominated by Chinese mobile technology companies.

Throughout June 2020, TenPay had the most users at 11.51 billion active users in the world, Alipay was second with 729 million active users, Apple Pa y was third with 441 million active users, PayPal was fourth with 305 million active users, and Samsung Pay was fifth with 51 million active users. Amazo n Pay and Google Pay had 50 million active users and 39 million active users, respectively.

<Table 2-3 > Active Users of Global Ranking of Major Mobile Payment Platforms (2020)



3) The global mobile payment market will maintain steady growth

With the rapid development of the mobile Internet, mobile netizens and m obile payment groups are also rising year by year. As the mobile payment ma rket becomes mature, it is expected that the global mobile payment market wil l maintain a steady growth. According to Statista's global mobile payments it will reach $58,697 billion by 2025.

1.3.2 The Current Situation of Mobile Payment Platform in China

During this period, China has grown into the largest country in mobile pa yments. According to the statistics of Research Consulting, the transaction scal e of the Q1 third-party mobile payment market in 2020 was 56.7 trillion yuan, up 2.3% year-on-year,the deal was at relatively record highs,But declined slig htly from Q4 2019 as Q1 was affected by the pandemic. In terms of growth r ate, mobile payments gradually tend to stabilize after the rapid growth that wa s experienced at the beginning of 2013 (the compound growth rate reached 20 1% between 2013 and 2017).

Usage Continues to Rise, and the mobile-end application trend remains

According to the 45th Statistical Report on the Development of China Int ernet Network released by the China Connectivity Information Center, as of th e first quarter of 2020, China's mobile payment users have reached 765 millio n, accounting for 85.3% of mobile Internet users.

The development of China's first mobile payment platform has mainly gon e through four stages:

1) Mobile payment test period

Before 2013, domestic mobile payment groups competed, and all parties tried mobile payment strategies in their own segments. China UnionPay, mobile operators, mobile phone manufacturers, and third-party payments have launched fierce competition for nearby payment standards and various mobile payment products. China Union Pay has made a lot of exploration in the early stages of the development of mobile payment in China, and UnionPay launched products such as SD cards and customized "Apple Leather" Apple phone cases. Joint Mobile Communications Operators Launch NFC-SIM Solution. Some regions even tested the QR code business, at that time the main promotion was Scan the code mode.

2) Mobile payment scenario drives PC users to mobile

Since 2013, Alipay mobile payment transactions had grown rapidly, mainly due to remote payments. The main reasons are as follows: first, the emergence of Yu'ebao had greatly stimulated the demand of mobile finance. With higher income and flexible access to Yu'ebao, Alipay app user activity had greatly improved. Second, many PC end users accumulated into the Ali e-commerce platform from mobile terminals, which provided a user base for mobile payments. In November 2013, Alipay paid more than 100 million mobile payment users. Last, the emergence of O2O industry provided more consumption scenarios for Alipay.

3) Mobile social apps have triggered a rapid growth in P2P transfer transactions.

WeChat launched the "WeChat Lucky Money" function during the Spring

Festival in 2014, which quickly led to the rapid growth of P2P transfer transaction volume in a short time. In that year, China's mobile virtual account transfer growth rate reached 956.3%. By contrast, the U.S. mobile P2P transfer transactions grew at 136% in 2014. The scale and growth rate of domestic mobile payments are significantly higher than those in the United States.

4) Scanning payment drives the rapid growth of offline payment.

With the competition between WeChat and Alipay for the offline QR code market, scanning code payment has been popularized in every corner of China. From the northwest plateau to the southeast coast. If users have a smartphone, they can basically pay without having to carry a wallet. In 2016, China's scanning code payment from mobile payment platform grew 1038 percent.

1.3.3 The Current Situation of Mobile Payment Platform in South Korea

In 2015, after the recognized certification of mobile payment platforms could no longer be used, the mobile payments centered on mobile applications like Samsung Pay, KakaoPay, and Naver Pay. Consumers used settlement and remittance services with other simple authentication means like password payment, credit card information stored within mobile devices, transaction input password or terminal access, and other methods of settlement services. (Bank of Korea, 2020).

Assuming that 90% of the 81 trillion yuan used by mobile payment in China in 2020 is used for online shopping, then the proportion of mobile payment in the e-commerce market is 54%, which accounts for more than half the market.

From the market share of mobile payments, which increased to a size of 73 trillion won, Naver Financial accounted for 16%, KakaoPay for 6%, Payco for 5%, SSG Pay and other enterprises reached 73%. According to domestic re tail sales data of the Statistics Department, the transaction volume of mobile o nline shopping centers accounts for 36% of all retail sales. Against this contex t, mobile payment platforms are expected to replace debit cards, but South Ko rea's mobile payments are still slow compared to China. At present, domestic consumers are still using more credit cards and other non-cash settlement infra structure.

According to METI in China, non-cash settlement has accounted for 90% of each household's expenditure. Therefore, at home, mobile payment is used i nstead of cash compared to overseas, but this coexists with credit cards that h ave been used in place of cash and is developing in the direction of replacing debit and small cash payments. Mobile payment enterprises will expand their scope to the franchise fee market of debit cards and other non-cash settlement service institutions. In the medium and long term, set up the business expansi on blueprint of mobile payment above through the accumulation of settlement user data (Korean Department of Statistics, 2021). Among them, the market th at has more potential for conversion is debit cards, because prepaid payment mobile payment is used after cash and account charging, can meet the require ments of debit card users with similar consumption tendency of reasonable deb it card.

According to a questionnaire conducted by the credit card website, Credit

Card Gorilla, the debit card is used to prevent blind consumption, conducive t o year-end liquidation, and easy to manage spending. Existing debit card users are expected to move through prepaid mobile payment platforms like debit ca rds, and this will drive growth in the mobile payment market. Consumers mai nly use small settlements, with an average amount of 50,000 won for credit ca rd, 20,000 won for debit card, 30,000 won for mobile payments, and 10,000 won for mobile payments.

About growth Rate Forecast, Kakao Pay isexpected to increase about 17 trillio n won, Naver Financial is expected to increase about 13 trillion won. In this case, if various fees are removed from settlement sales, assuming 1% margins, KakaoP ay and Naver Finance can generate 182 billion won and 125 billion won, resp ectively. Influenced by the expansion of Fintech services closely related to life and positive marketing of mobile payment enterprises, the basic transaction vo lume of mobile payment users of South Korean enterprises has reached a certa in scale.

Based on media reports and private information, the monthly active users and transaction volume of major mobile payment providers in 2021, KakaoPay had 10 million users and a 2,48.1 trillion won transaction volume. Naver Fin ancial had 1.310 million users and a 14.3 trillion won transaction volume. Pay co had 0.410 million users and a 6 trillion won transaction volume.

KakaoPay has the largest number of users in South Korea. Both KakaoPa y and Toss are very large compared to Naver Financial and Payco. This is du e to them leveraging inherent banking networks to attract many users with "ea

sy remittance" functions to transfer bank card balances to account number and without recognizing contact credentials. With KakaoPay, more than 80% of th e transaction volume is from simple mobile payment accounts according to the customer remittance fees. Because the remittance fees are paid by the enterpri se, it is difficult for the service itself to obtain profit, however, their goal is t o expand on the mobile payment user flow and guide customers with future in come goods.

In 2019, KakaoPay and Toss sold 141.1 billion won and 118.8 billion wo n, respectively, with operating losses of 65.3 billion won and 115.4 billion wo n, respectively. The use of mobile payments and transfers was 39 trillion won and 33 trillion won, respectively, marking a sharp increase year-on-year. How ever, the more the number of free remittance times increase, the "consolidation bank" fee paid to the banking community increases, and this makes it difficul t to achieve returns. With that said, it is encouraging that the proportion of pa yment fees in sales have been gradually declining, and there is a trend where banks are trying to increase the number of free remittances and fee agreements for mobile payments, loans and other financial services.

Starting in 2020, all Fintech settlement companies were able to establish Open Banking at reasonable fees while using the bank settlement network, whi ch reduce bank fees. With these agreements with banks, fees will not be reduc ed to the 1/10 levels as reported in the media; however, profitability from sim ple remittance is improving.

According to the current use of mobile payment platforms in the first half

of 2021, the daily use average was 559 billion won, up 12.5% over the seco nd half of 2020. That figure nearly doubled in two years from 287.6 billion w on from the first half of 2019 before Corona 19 pandemic. In the first half of 2021 the mobile payment platforms was used about 18.21 million times, up 1 2.9% over the previous year.

2. Research Trend in Mobile Payment Platform

2.1 Analysis of Unified Theory of Acceptance and Use of Technology (UT AUT)

Technology acceptance research has produced several competing models, e ach with sets of different determinants. The work of Venkatesh et al. (2003) e merged with the aim of reviewing and discussing the literature of adoption of new information technology compared to the current existing models. This wor k compared them, formulated a unified model, and validated all this empiricall y. Unified Theory of Acceptance and Use of Technology (UTAUT) was formu lated and validated from Venkatesh et al. (2003) and it integrated elements of eight prominent models related to the topic after empirical comparisons betwee n them. The eight models were tested from a sample of four organizations wit hin a span of six months. They explained 53% of the variance in intent to us e information technology with three key relationships moderators. By contrast, UTAUT was formulated from four key relationships moderators of intent to us e, and this helped to explain 70% of the variation when applied to the same data set. According to the research, the new model provided an important man

agerial tool for evaluation and construction of strategies for introducing new te chnologies.

The eight models revisited by Venkatesh et al. (2003) are the Theory of Rational Action (TRA), the Technology Acceptance Model (TAM/TAM2), the Motivational Model (MM), the Theory of Planned Behavior (TPB/DTPB), the model agreement between Technology Acceptance Model and Theory of Planne d Behavior (C-TAM-TPB), the Model of PC Usage (MPCU), the Diffusion of Innovation Theory, and the Social Cognitive Theory (SCT). According to the UTAUT, the intended use of IT can be determined from three points: expected performance, expected effort, and social influence. Intent to use has influence over the behavior, with a view to the adoption of technology enabling conditi ons. The fourth construct, enabling conditions, specifically precedes use behavio r (Venkatesh et al., 2003).

While it has been modified in various ways, studies that utilized UTAUT have illustrated, both explicitly and implicitly, certain limitations—this suggests that there is systematically reconsider the relationships proposed by UTAUT.

First, the relationships moderators proposed in the original UTAUT model can be reconsidered. Prior studies have generally not applied the complete UT AUT model as described in Venkatesh et al. (2003). A similar observation res ult was made by Venkatesh et al. (2012), which noted that most studies emplo yed only a subset of the model so that some moderators were typically droppe d. Among some studies that included moderators, a few of them (e.g., Bandyo padhyay & Barnes 2012; Venkatesh et al., 2011b) modeled all four moderating

variables as proposed by the original UTAUT model. A potential reason why prior studies may not have utilized moderating variables is because there may not have been enough variation within the moderators for the adoption and use context. For instance, the adoption and use of specific IS/IT may have been mandated by an organization so that all individuals must adopt those technologies—this results in a situation in which voluntariness, as a moderating variables, may not be readily applicable.

Second, in formulating the UTAUT model, Venkatesh et al. (2003) argued that one would expect facilitating conditions to predict behavioral intention only if the effort expectancy moderator was not included in the model. This was different from prior theories of technology acceptance that explicitly modeled the relationship of facilitating conditions and behavioral intention. Prior studies (e.g., Foon & Fah, 2011; Yeow & Loo, 2009) suggest that facilitating conditions influence behavioral intention even in the presence of effort expectancy.

Finally, the original UTAUT model may be reconsidered in other constructs that may explain adoption and usage behaviors of individuals. The four key relationships moderating variables in the UTAUT be viewed as representing contextual factors (i.e., facilitating conditions and social influence) and technology attributes (i.e., performance, expectancy, and effort expectancy). But there is a key element missing is the individual engaging in the behavior.

2.2 Analysis of Diffusion of Innovation Theory

Rogers (2003) proposed the Diffusion of Innovation theory (DOI) that has the five factors of relative advantage, complexity, compatibility, observability,

and trialability. We have selected DOI as our foundation because it has been integral in extant adoption studies (Lu, Y et al., 2011). DOI has been the foundation for studies such as consumer usage of Uber mobile app (Luarn, P.,et al., 2005), adoption of Internet banking (Al-Jabri & Sohail, 2012;), and engagement with e-commerce. Although DOI presents a promising theoretical foundation for mobile payment adoption research, it has been underutilized in comparison to TAM and UTAUT/UTAUT2 in this context (Venkatesh et al., 2003, 2012). The widespread adoption of mobile payment platforms doesn't only depend on acceptance among consumers (as primarily measured while applying TAM or UTAUT), as it can also deal with the pace and other factors for its diffusion into societies, including through several countries. We utilized DOI theory to examine mobile payment platform' usage across countries.

Rogers (1983, p. 226) suggested that "diffusion scholars should keep an open mind toward other possible attributes that may be important in a specific situation for a particular set of individuals adopting a unique set of innovations." In the context of mobile wallets, consumers wish to feel secure that their financial data is safe, and their information is protected from unauthorized surveillance. Accordingly, Johnson et al. (2018) extended DOI to add security and privacy. In contrast to TAM, DOI encapsulates more specific characteristics of innovation that are useful in explaining why users adopt innovations or how they make decisions when adopting those innovations (Rogers, 1995).

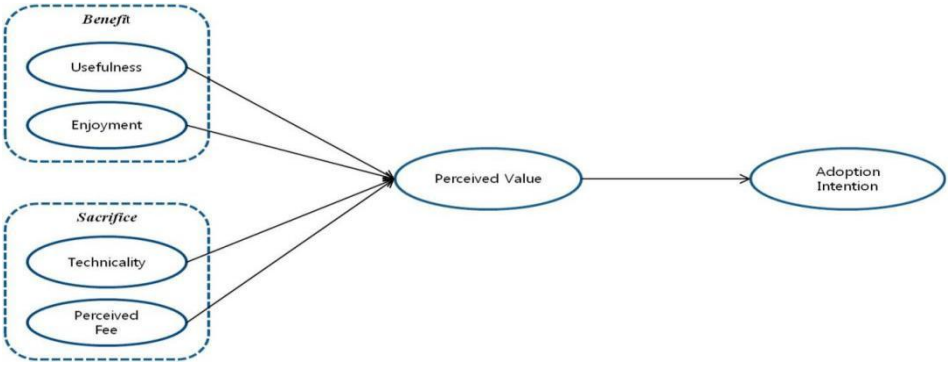
Moreover, Rogers (2002) described diffusion as a social process that spreads innovation through word-of-mouth about the adoption of an innovation. As

such, the adoption of innovation cannot be fully understood without taking the social system into consideration. However, the five innovation characteristics of DOI do not consider the potential effects of any social factors. So the social factor is considered particularly important when explaining individuals' mobile technology adoption.

3. Value-based Adoption Model (VAM)

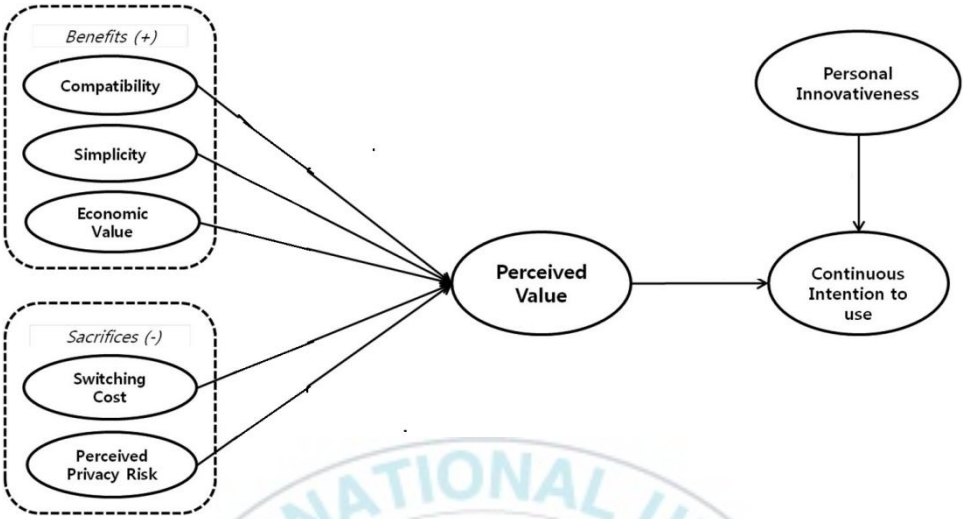
VAM was first proposed by Kim, Chan, and Gupta (2007) based on the perceptual value of the advantages and disadvantages of using new techniques to classify perceptual value into benefit and sacrificial factors. Variables associated with benefit factors are considered usefulness and enjoyment, while the variables associated with sacrificial factors are considered as technicality and perceived fee.

VAM has been used in various previous studies (Lin, Wu, Hsu & Chou, 2012), and the study with (Kim, Park & Choi, 2017) confirmed that perceived value in VAM considers the benefits and scarifies of a particular service, which affect user willingness to use a service.



<Figure2-1>Original Value-based Adoption Model of Technology

An extension that suggested a perceived value which affected continuous intention to use was adopted into VAM. Lee, Yun, Lee, and Lee (2015a) validated the impact of perceived value on user continuous intention to use mobile wallets. Lin et al. (2012) verified there exists a significant relationship between perceived value and willingness for continuous intention to use. The study from Jun, J., Cho, I., & Park, H. (2018) confirmed the effect of perceived value on continued use with the inclusion of moderating variables and developed Extended VAM. They proposed future research directions for comparative research as only a single country was studied.



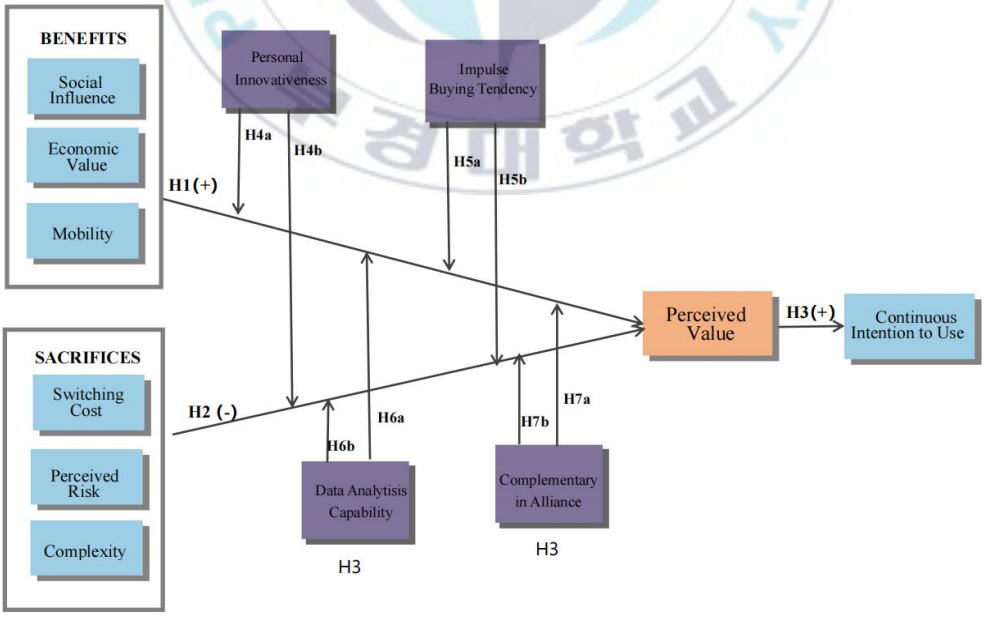
<Figure2-2>Extended Value-based Adoption Model of Technology

III. Research Model and Hypothesis Development

1.Research Model

Combining previous studies and the current mobile platform development, we further refine and extend the VAM model.We divide the benefits of mobile payment platforms into: Social Influence, Economic Value, Mobility; divides the sacrificial factors into: Switching Cost. Perceived Risk. Complexity. We took a comparative study with the largest differences between the two subjects as moderating variables: Personal Innovativeness.Impulse Buying Tendency, Data analysis Capability, Complementary in Alliance.The model for this research is as <Figure 3-1 >.

<Figure 3-1 > Research Model



2. Hypothesis Development

2.1 The Beneficial factors of Mobile Payment Platforms and Perceived Value

2.1.1 Social Influence and Perceived Value

In general, when individuals decide to adopt an innovation, there may be doubt about the uncertainty that innovation can bring. To reduce the sense of uncertainty, individuals tend to rely on their social networks to consult about their decisions through informative and prescriptive social influences (Jung, J.H. et al., 2020). "Social Influence" is divided into external influence, and relations influence. External influences are similar to information influences, while relations influences are similar to normative influences. Relations influence is closer to subjective norms because it includes word-of-mouth influence though friends, colleagues, and superiors. The study also noted that external influences include mass media coverage, expert opinions, and other non-personal information (Bhattacherjee, A., 2000). Social Influence belong to factors in the UTAUT model and are an important variable for scholars to measure an individual's willingness to use mobile payments (Slade, & Emma L. et al., 2015; Abrahão, R. et al, 2016; Patil, Pushp et al., 2020; Jung, J.H. et al., 2020). With social functions built into mobile payment platforms, social influence is very important and global scholars have empirically tested the impact of social impact on users' willingness to use. In particular, this study looks into mobile payment platforms based on social functions, which make social impact more meaningful for the use of mobile payment platforms.

H1a The social influence of the Mobile payment platform will have a significa

nt positive (+) effect on the perceived value.

2.1.2 Economic Value and Perceived Value

Economic value is defined as the high economic value indicates that mobi le payment applications charge a relatively low service fee or provide higher s ervice quality levels than alternatives.. The understanding of economic value is formed through comparative means. Verhoef (2003) claims that the relative pr ice and quality of competitive enterprises are important factors in calculating t he economic value of working labor. This comparative nature makes the recog nized economic value an objective measure affecting the inert labor characterist ics. The recognized economic value means that mobile payment applications ch arge relatively low service fees or offer higher services. The quality of service is higher than other schemes and the utility maximization theory suggests that the goal of consumer behavior is total utility or total satisfaction (Brick & Ja gpal, 1984) obtained through consumer goods and services within an establishe d budget. Users can continue to use existing mobile payment services if they s ee high recognized financial value. Therefore, the high economic value generat ed from low prices, or from good concessions, is expected to increase the use value perceived by mobile payment users which will enhance their continuous intention to use. In this study, economic value was defined as the extent to which users gain economic benefits using a Mobile payment platform (Jun, J. et al., 2018). We think that the relative price and quality of competitors are i mportant factors in calculating the economic value of existing services, and thi s comparative property has a perceived economic value on a kind of measurab

le inertia of service characteristics. The high economic value indicates that mo bile payment applications charge a relatively low service fee or provide higher service quality levels than alternatives. (Wang, Le et al., 2019)

H1b The economic value of the Mobile payment platform will have a significa nt positive (+) impact on the perceived value.

2.1.3 Mobility and Perceived Value

Compared with traditional payment methods and e-commerce, mobility has a relative advantage different from traditional payment methods. Relative adva ntage is an innovative technology free from the constraints of time and space. In this paper, mobility is defined as the relative advantage of having access to mobile payment platforms anytime and anywhere(Rogers, 1995). The most im portant quality of mobile technology is mobility, which is also a prominent fea ture of mobile payment platforms. The essence of a mobile payment platform i s the ability to have access to services everywhere which indicates that mobilit y gives consumers the freedom to trade anytime and anywhere (Kim, C., Miru smonov, M., & Lee, I., 2010). Mobility is one of the main advantages of mob ile devices and m-commerce, as it enables customers to transact almost anytim e and anywhere (Marinkovic, V., & Kalinic, Z., 2017). It is also the most co mmon positive factor verified from scholars studying mobile payments. Compar ed to other online payment methods, PC-based online payments require users t o start the computer, which is an annoying, time-wasting step that isn’t needed on mobile platforms. Therefore, the mobile terminal can be set to "Always o

n" allowing the user to pay anytime, anywhere (Cao, Xiongfei et al., 2018). B ased on this feature, we will assume that mobility is positive on the user's wil lingness to use the mobile payment platform.

H1c The mobility of the Mobile payment platform will have a significant posit ive (+) impact on the perceived value.

2.2 The Sacrificial factors of the Mobile Payment Platform and Perc eived Value

2.2.1 Switching Cost and Perceived Value

Switching cost represent the abandonment of existing services for the time, energy, and economic expenditure involved in a new service (Burnham et al., 2003). In other words, Switching cost are the costs that consumers must bear when choosing alternatives, if they abandon familiar brands, channels, or servi ce platforms (Jones, Mothersbaugh & Beatty, 2002). Switching cost arise when a buyer purchases from a provider, even when the products of the old and n ew providers are functionally the same (Au, Y.A. & Kauffman, R.J, 2008), wh ich includes replacing existing technologies and accepting relevant psychologica l and economic costs with new technologies. For example, if consumers use a credit card, or cash payment, then switching to a new mobile payment platfor m will either resume the registration information or replace the existing use ch annels and tools. The study from (Kim & Atreyi Kankanhalli, 2009) shows tha t higher Switching cost reduce the benefits or perceived value of new technolo gical changes. If the switching cost to mobile payment platforms is too high, i

t will affect the conversion from other payment methods.

H2a The switching cost of the Mobile payment platform will have a significan t negative (-) impact on the perceived value.

2.2.2 Perceived Risk and Perceived Value

The concept of perceived risk was originally developed by the Harvard sc holar Bauer,R.A. (1967) and was presented in “Consumer Behavior Research”. With mobile payments, perceived risk is referred to as the notion that cashless transactions bring uncertainty (Gao, L., & Waechter, K.A., 2017; Park, Jungk un et al., 2019). Perceived risk has always been the dominant factor in mobile payment adoption and use research (Pal, 2019). Perceived risk is considered a s a major psychological factor a consumer’s determining the choice of paymen t tools. Many studies on mobile payments have repeatedly found perceived risk as having a significant negative impact oncontinuous intention to use (Pal, A., 2021). When financial data is transmitted over the Internet, there is a risk tha t unauthorized parties may intercept information and cause economic security l osses, which make security risk a very important perceived risk factor with onl ine payments. However, with technology evolving, the most important aspects of consumer risk perception have changed. The newly developed risks regardin g privacy issues are particularly prominent in understanding consumer risk perc eption, specialized studies were conducted, and tests showed that subjects feare d that their private information would be stolen or be collected for corporate misuse. Also, other common concerns about the loss of personal financial infor mation privacy and potential "identity theft" were reported. If an individual enc

ounter a service problem during their use of the product, they would not know if they should seek help from a bank or a mobile payment service provider. In this study, perceived risk was assumed to have a negative effect on the continuous intention to use.

H2b The perceived risk of mobile payment platform will negatively influence perceived value

2.2.3 Complexity and Perceived Value

In diffusion of innovation theory, complexity is identified as "the degree to which innovation is considered difficult to understand and use" (Rogers, 1995, p.16). Complexity and availability issues have led to the low adoption rates of various payment platforms, including smart cards, mobile banking, and mobile payments (Laukkanen, T., & Lauronen, J., 2005). Complexity is the opposite of ease of use, which refers to the easy perception of mobile banking. Extensive studies suggest that ease of use has a strong impact on the adoption of new technologies (Gu et al., 2009). The complexity of use is a major factor in the adoption of mobile banking. There is a considerable amount of experience dealing with mobile technology which shows that users' willingness to adopt mobile payment is influenced by the perceptual complexity of inhibiting innovations (Au & Kauffman, 2008; Mallat, 2007) A lot of the existing literature on mobile payment adoption barriers are primarily related to technical complexity (Al-Jabri et al., 2012).

H2c The complexity of the mobile payment platform will negatively influence perceived value

2.3 Perceived Value and Continuous Intention to Use

Sensing value means that a consumer is aware of the total benefits and losses of a product or service they purchased (Zeithaml, 1988). Perceived value theory mainly shows how user adoption attitude is influenced by understanding the value of new products or services. Recently, perceived value theory is widely accepted in recent studies for the adoption of mobile payments (Chang and Chen, 2009; Kim et al., 2010; Zhou., 2014; Yang et al., 2015; Rau et al., 2017). In these studies, we classified three values: utilitarian, emotional, and social value (De Kerviler et al., 2016). Other values such as axiomatic values that deal with convenience and economic benefits (Zhou, 2014) and social values that deal with social identity and social impact (Khalilzadeh et al., 2017; Rau et al., 2017) was extensively discussed in this area. Emotional value is becoming increasingly important to a user's attitude; therefore, this paper focuses on the perceived value from the utility gained or lost in emotion.

In some areas, the awareness risk and uncertainty about mobile payment will ultimately affect a user's intention for use. To cope with this uncertainty, the user must be aware of the value of mobile payments (Farivar et al., 2017). This can reduce risk and improve the behavioral continuity of the user while developing long-term relationships (Belanche et al., 2014). Value guarantee and service provision of mobile payments (Belanch et al., 2014) for stable relationship and guarantees the expected results (Zhou, 2014). These values can help a user to continue to use the service. Previous studies identified value as an important predictor variable of persistent intent (Zhou, 2013; Kim et al., 2011).

Therefore, this study sets the following assumptions:

VAM theory is used to understand the user's intention to use various IT t ools based on perceived value. According to the economic theory of utility, co nsumers want to consider limiting resources to maximize utility or satisfaction (Lin et al., 2012). The definition of perceived value is reflected by beneficial but unfavorable comparisons of economic theories of utility and is therefore an indicator of intention to take an established course of action (Kim et al., 200 7). Consumers are more likely to either adopt new services and product with high perceived value, or repurchase a previously used service (Dlacicic, Arslan agic, Kadic, Maglajlic, Markovic, & Raspor, 2014). VAM is the background fo r the user's early intention to adopt technology, and this study applied VAM t o intent to use as VAM has been validated as an important factor influencing perceived value and intent for continuous intention to use (Lee et al., 2015).

H3 Perceived value will positively influence Continuous Intention to Use

2.4 The Moderating Effect of Personal Innovativeness

Personal Innovativeness is the willingness of users to try new information technology (Tsikriktsis, 2004). Since mobile payment services are a new techno logy, innovation is believed to play an important role in determining user’s per ception of technology adoption. Consumer interest in trying new technology-bas ed services and their propensity towards new ideas indicates the importance of innovation for technology adoption behavior. It is important to understand the connection between personal innovativeness and perceived value, because cust

omers that are willing to explore new information system opportunities can als o perceive and expect more value from using innovative services like mobile a pplications (Karjaluoto, H. et al., 2019). In many studies, personal innovativene ss has been identified as an important factor in the adoption of new products, although it's not incorporated in more popular models of technical acceptance (Cowart et al., 2008). Results from other recent studies support a clear positive effect of personal innovativeness on the willingness to adopt mobile payment in different geographic settings (Makki et al., 2016; Oliveira et al., 2016). In p articular, a UK study examinin affecting the adoption willingness of non-mobil e-payment users, also found personal innovativeness as an important determinan t (Slade et al., 2015). The term "innovative" is an individual's desire to find s omething new and different. Thus, the extent to which individuals are able to experience or try new things reflect their innovativeness and their tendency to pursue new things (Hirschman, 1980). Innovations, while not a part of the wel l-known technological acceptance theoretical model, are supported as an import ant predictive variable for the innovative adoption of new products or other fie lds (Agarwal & Prasad, 1998; Cowart et al., 2008; Karjaluoto et al., 2019; Sla de et al., 2014).

Agarwal & Prasad (1998) proposes specific innovative terms in the field o f information technology such as the Personal Innovativeness of Information Te chnology (PIIT) and defines PIIT as "the will of an individual to attempt to tr y new information technology". Alternatively, Agarwal & Prasad (1998) noted that individual innovation is the embodiment of the risk tolerance tendency tha

t exists only in specific individuals, thus developing and valid the values of sp ecific Personal Innovativeness in the IT domain. Marketers identify individual differential variables such as individual innovation as important concepts of act ivity (Aroean & Michaelidou, 2014). The meta-UTAUT model is an important extension original UTAUT theory, which does not recognize the role of individ ual differences for adopting. In the mobile payment environment, Thakur & Sri vastava (2014) found that personal innovativeness is only an important predicto r for the intention of existing mobile payment users, but rather a meaningful p redictor for the non-mobile-payment users intention.Mobile payment platforms a re technically different from other online settlement methods, and are a relative ly new settlement method in India. Therefore, many people predict that with t he intention of adopting mobile payment, the individual innovation of consume rs will play a positive and important role.

H4 Personal innovativeness will have moderating influences in the relationship between mobile payment platform and perceived value.

H4a Personal innovativeness will have moderating influences in the relationship between the benefits of mobile payment platform and perceived value.

H4a1 Personal innovativeness will have moderating influences in the relationship between the social influence of mobile payment platform and perceived value.

H4a2 Personal innovativeness will have moderating influences in the relationship between the economic value of mobile payment platform and perceived value.

H4a3 Personal innovativeness will have moderating influences in the relationship between the mobility of mobile payment platform and perceived value.

H4b Personal innovativeness will** have **moderating influences in the relationship

between the sacrifices of mobile payment platform and perceived value.

H4b1 Personal innovativeness will have moderating influences in the relationsh ip between the switching cost and perceived value.

H4b2 Personal innovativeness will have moderating influences in the relationsh ip between perceived risk and perceived value.

H4b3 Personal innovativeness will have moderating influences in the relationsh ip between the complexity of mobile payment platform and the perceived value.

2.5 The Moderating Effect of Impulse Buying Tendency

"Impulse Buying Tendency" can be seen as a rational alternative for the a ctual purchasing behavior of consumers as it is defined as a state of desire ex perienced when the user encounters objects in the environment (Beatty, S.E et al., 1998, p.172), and it involves the features of relatively rapid decision maki ng, and favors subjective bias for immediate possession.Impulse buying usually occurs when consumers interact with a shopping environment. Besides internal information from memory, the only information available to an individual is t he information available in the shopping environment (Verhagen, T., & Van D olen, W., 2011). Mobile payment platforms are an online payment environment with no actual cash transactions, so technologies such as TV shopping channe ls, mobile phones, and the Internet which increase the accessibility of products and services can expand impulse buying opportunities for consumers (Lee, J. A., & Kacen, J.J., 2008). Fee-impulse buying becomes common with offline b usiness, and some researchers say consumers in e-commerce are more likely to

undertake than offline consumers. The e-commerce environment enables consumers to search and compare manufacturers and products more effectively compared to offline shopping without time constraints or social pressure from a sales representative. Recent academic studies have begun to study in the use business environment and confirmed a significant impact between the relationship of impulse purchase and perceived value (Yang, Feng et al., 2021, Zheng, X. et al., 2019). Therefore, it is assumed that consumer impulse buying behavior will mediate the relationship between mobile payment platforms and perceived value.

H5 The impulse buying tendency will have moderating influences with mobile payment platform on perceived value.

H5a The impulse buying tendency will have moderating influences in the relationship between the benefits of mobile payment platform and perceived value.

H5a1 The impulse buying tendency will have moderating influences in the social influence of mobile payment platform and perceived value.

H5a2 The impulse buying tendency will have moderating influences in the relationship between the economic value and perceived value.

H5a3 The impulse buying tendency will have moderating influences in the mobility of mobile payment platform and perceived value.

H5b The impulse buying tendency will have moderating influences in the sacrifices of the mobile payment platform to perceived value.

H5b1 The impulse buying tendency will have moderating influences in the relationship between the switching cost and perceived value of mobile payment platfor

m.

H5b2 The impulse buying tendency will have moderating influences in the per ceived risk of mobile payment platform and perceived value.

H5b3 The impulse buying tendency will have moderating influences in the rela tionship between system complexity of mobile payment and perceived value.

2.6 The Moderating Effect of Data Analysis Capability

In general, data analysis capability is the "organizational facilities with too ls, technology and processes enabling a company to process, organize, visualize, and analyze data to generate insight into data-driven operational planning, dec ision making, and execution" (Srinivasan and Swink, 2018, p. 1851). It was al so defined in another study as bringing transactions, information, and strategic benefits to e-commerce companies, and giving that endtity a competitive advant age in real-time decision making and strategic value processing(Akter, S., & W amba, S.F.,2016). In the context of Fintech, the mobile payment platform Data analysis Capability is particularly important. The role of Data analysis Capabil ity is to use advanced analysis techniques to generate critical insights from pro cessing and analysis of substantial data (i.e. quantity, type, speed, authenticity, and value) to facilitate data-driven decision making that ultimately gives organi zations a competitive advantage (Mikalef et al., 2019; Srinivasan and Swink, 2 018).Big data is seen as a source of innovative products, services, and busines s opportunities, especially for mobile payment platforms based on numerous da ta operations (Davenport, T.H. et al., 2016). Data analysis Capability has great

economic value for mobile payment companies, which can be measured throu gh profit and business growth, along with competitive advantage due to organi zational adoption of big data (Davis, C.K., 2014). The digital market is especi ally inseparable from Data analysis Capability, because the achievements driven by Data analysis Capability are mainly from the digital market community. A lso, the digital market is more intuitively easier to collect data from than tradit ional markets (Ngai, E.W., 2017). Data analysis Capability are appropriate for many situations such as helping connect users and mobile payment platforms, i mproving operational efficiency by optimizing supply chain processes, setting t he most profitable prices for products and services, selecting the right person f or certain tasks and jobs, minimizing errors and quality problems, and improvi ng customer relationships (Chen, H. et al., 2012); through enhanced decision m aking and smarter strategy making (Constantiou,I.D., 2015). This study hypothe sized that Data analysis Capability plays a moderating role between mobile pa yment platforms and perceived value.

H6 Data analysis Capability will have moderating influences with mobile pay ment platform on perceived value.

H6a Data analysis Capability will have moderating influences in the relation ship between the benefits of mobile payment platform and perceived value.

H6a1 Data analysis Capability will have moderating influences in the relations hip between social Influence of mobile payment platform and perceived value.

H6a2 Data analysis Capability will have moderating influences in the relations hip between the economic value and the perceived value of the mobile payment pl

atform.

H6a3 Data analysis Capability will have moderating influences in the relations hip between mobility of mobile payment platform to perceived value.

H6b Data analysis Capability will have moderating influences in the sacrific es of the mobile payment platform to perceived value.

H6b1 Data analysis Capability will have moderating influences in the relations hip between switching cost and the perceived value.

H6b2 Data analysis Capability will have moderating influences in the perceive d risk of mobile payment platform and perceived value.

H6b3 Data analysis Capability will have moderating influences in the relations hip between the complexity of mobile payment platform and the value of perceptio n.

2.7 The Moderating Effect of Complementary in Alliance

Complementary in Alliance is the degree to which innovation coincides wi th existing values, past experiences, and requirements for potential users (Roger s, 2003). This is also related to the diffusion of new technologies, as it can h elp reduce the potential uncertainty associated with the use of new technologie s (Su et al., 2017). Compatibility is one of the major determinants of the inno vative diffusion process (Hanafizade et al., 2014; Pham and Ho, 2015). Many researchers regard compatibility as one of the most important adopted metrics (Hanafizade et al., 2014; Pham and Ho, 2015; Ramos et al., 2016). The compl ementarity and recognized preferences shown in mobile payment platforms are

related to the two distinct stages in the adoption process, so a relationship bet ween these two variables is proposed. The habits of potential users and the co nsistency of trust in the technology adopted seem to be more appropriate for t his technology and more useful to the users employed than other technologies that may not fit their own lifestyle.

The impact of Complementary in Alliance was confirmed by the adoption of studies through multiple mobile payment platforms (Li et al., 2014; Olive ira et al., 2016; Ooi and Tan, 2016) In addition, studies from Ramos et al. (2 016), Schierz et al. (2010), and Wu & Wang (2005) also confirmed the signifi cant relationship between Complementary in Alliance and recognition of useful ness. In contrast, with studies of factors that affect mobile payment intent, Ki m et al. (2010) found no evidence that Complementary in Alliance had signifi cant effects on perception along with benefits or sacrifices. In this sense, mobi le payment platform technologies are being developed as part of the daily, co mmon activities of consumers. Since there are large differences with Complem entary in Alliance between different mobile payment platforms, this study prop oses that Complementary in Alliance also has an impact on the consumer's Co ntinuous Intention to Use through perceived benefits and sacrifices.

H7 Complementary in Alliance will further strengthen the impact of mobile payment platform on perceived value.

H7a Complementary in Alliance will have moderating influences in the relati onship between the benefits of mobile payment platform and perceived value.

H7a1 Complementary in Alliance will have moderating influences in the relati

onship between the social Influence of mobile payment platform and perceived valu e.

H7a2 Complementary in Alliance will have moderating influences in the relati onship between economic value and perceived value.

H7a3 Complementary in Alliance will have moderating influences in the relati onship between mobility of mobile payment platform and perceived value.

H7b Complementary in Alliance will have moderating influences in the relati onship between the sacrifices of mobile payment platform and perceived value.

H7b1 Complementary in Alliance will have moderating influences in the relati onship between switching cost of the mobile payment platform and perceived value.

H7b2 Compliance in Alliance will have moderating influences in the relationsh ip between perceived risk in mobile payment platform and perceived value.

H7b3 Complementary in Alliance will have moderating influences in the relati onship between the complexity of the mobile payment platform and perceived valu e.

IV. Research Methods

1. Organize the Questionnaire

There were six beneficial and sacrificial factors of mobile payment platfor ms that were used in this study: personal innovativeness, impulse buying tende ncy, data analysis capability, complementary in alliance, perceived value, and c ontinuous intention to use. These factor definitions are summarized below in th e following sections.

1.1 The Beneficial and Sacrificial Factors of the Mobile Payment Platform

Mobile payment platform refers to a payment system that allows for the p aymentof goods and services with a personal handheld device such as a person al mobile phone whether it is online or offline (Wang, Le, et al.2019). This st udy believes that the mobile payment service factor is an empirically verified f irst study (Chen Xing, 2017), combining the objects of this study, divides the Mobile payment platform into beneficial factors (social influence, economic va lue, and mobility) and sacrificial factors (switching cost, perceived risk, and co mplexity). These operational definitions are as follows.

Social influence is based on the Viswanath Venkatesh, James Y.L. operati onal definitions are given to the extent that consumers in the study in practica l experience and in the surrounding environment collect information and unders tand the target product or service.

Economic value is the "low handling fees of mobile payment services and

low transaction fees" (Wang, L., Luo, X.R., Yang, X. & Qiao, Z, 2019), and is the perceived fairness of the price for the level of service quality and the breadth of features offered. This study is based on TenPay and payment syste m receiving "transaction fees, multiple additional services are the degree of ec onomic recognition" economy

Mobility is defined as the relative advantage of being able to access mobi le-payment platforms anytime and anywhere (Shao, Z., Zhang, L., Li, X., & G uo, Y., 2019).

Switching cost is the time, effort, and economic expenditure involved in g iving up an existing service for a new one (Kim, H.W. & Kankanhalli, A., 20 09).

Perceived risk is the potential for loss in the pursuit of a desired outcome of using a mobile payment platform (Yang, Q., Pang, C., Liu, L., Yen, D.C. & Tarn, J.M., 2015).

Complexity is the degree to which an innovation is perceived as difficult to understand and use (Al-Jabri, I.M. & Sohail, M.S., 2012).

Each question was modified and refined from the previous study in a suit able manner for the subjects in this study, and they were measured on a 5-poi nt Likert scale (1 not at all, 5 very good) as shown in <Tables 3-1>.

<Tables 3-1>Measurement items(1)

Construct		Measurement items	Sources
Social Influence	3	People who are important to me think that I should use mobile payments	Viswanath Venkatesh，James Y. L. Tho，XinXu，2012
		People who influence my behavior think that I should use mobile payments	
		People whose opinions that I value prefer that I use mobile payments	
Economic Value	3	My current mobile payment application offers a good value for money.	Wang, L., Luo, X. R., Yang, X., & Qiao, Z，2019
		My current mobile payment application is a good service for the price.	
		My current mobile payment application is economical.	
Mobility	3	I believe the mobile payment service provided on the platform is independent of time	Shao, Z., Zhang, L., Li, X., & Guo, Y. (2019)
		I believe the mobile payment service provided on the platform is independent of place	
		I can use the mobile payment service provided on the platform anytime while traveling	
Switching Cost	3	I have already put a lot of time and effort into mastering the current transaction method	Kim, H.-W., & Kankanhalli, A. (2009)
		It would take a lot of time and effort to switch to the new way of making payments with the mobile payment	
		Switching to a new payment method with the MEPS will result in unexpected hassle for me	
Perceived Risk	8	Security risk 1. That the transaction information will be hacked. 2.Hackers or viruses caused by security lapses of operation system or online payment tools. 3.That my account information will be illegally used and that payment platform cannot work properly	Yang, Q., Pang, C., Liu, L., Yen, D. C., & Tarn, J. M. (2015）

		Privacy risk 1. That my personal information can be stolen in transaction because of carelessness or illegal activities of others including banks,third parties, etc. 2.That my personal information can be improperly collected and used by vendors, banks, or service providers (such as junk mail) 3.That hackers can steal my personal information from service providers' databases and use it illegally	
		Service risk 1. That if I apply for an online payment account, it's difficult to communicate with the bank or third party platform when I need help . 2.That if I use an online payment account, it's difficult to communicate with the bank or third party platform when I need help	
Complexity	3	Mobile payments requires a lot of mental effort	Al-Jabri,I.M., & Sohail, M. S. (2012)
		Mobile payments requires technical skills	
		Mobile payments can be frustrating	

1.2 Personal Innovativeness.

Personal innovativeness is defined as the willingness of an individual to tr y out any new information technology (Liebana-Cabanillas, F., Marinkovic, V., de Luna, I.R. & Kalinic, Z., 2018).

The questionnaire was modified and refined from the previous study on a 5-point Likert scale (1 not at all, 5 very good) as shown in <Table 3-2>.

<Table 3-2> Measurement Items (2)

Construct		Measurement items	Sources
Personal Innovativeness	3	If I find out about new mobile payment technology, I seek ways to experience it	Liébana-Cabanillas, F., Marinkovic, V., de Luna, I. R., & Kalinic, Z. (2018).
		I am usually one of the first among my colleagues/peers to explore new mobile payment technology	
		In general, I am reluctant to try new mobile payment technologies	

1.3 Impulse Buying Tendency

Impulse buying tendency is defined as both the tendency to experience spontaneous and sudden urges to make on-the-spot purchases and to act on these urges with little deliberation or evaluation of the consequences (Xiang, L., Zheng, X., Lee, M.K. & Zhao, D., 2016). Impulse buying tendency is where the habitual, unconscious, automatic purchases made by consumers without awareness of price can replace the complex decision-making process for purchases.

The questionnaire was modified and refined from the previous study on a 5-point Likert scale (1 not at all, 5 very good) as shown in <Tables 3-3>.

<Table 3-3> Measurement items (3)

Construct		Measurement items	Sources
Impulse Buying Tendency	4	When I go shopping, I often buy things spontaneously	Xiang, L., Zheng, X., Lee, M. K., & Zhao, D. (2016).
		As I browse on shopping websites, I often buy things online without thinking.	
		"I see it, I buy it" describes the way I buy things online	
		Browsing shopping websites, sometimes I am a bit reckless about what I buy.	

1.4 Data Analysis Capability

Data analysis capability is defined as the ability of an enterprises to asse mble, integrate, and deploy data analytic-related resources in combination with marketing resources and capabilities (Xiao, X., Tian, Q. & Mao, H., 2020).

The questionnaire was modified and refined from the previous study on a 5-point Likert scale (1 not at all, 5 very good) as shown in <Table 3-4>.

<Table 3-4> Measurement items (4)

Construct		Measurement items	Sources
Data Analytic Capabilities	10	Connectivity 1.Compared to rivals within industry,TenPay/Kakao pay's organization has the foremost available analytic systems. 2. All remote,branch and mobile offices are connected to the central office for analysis. 3. TenPay/Kakao pay's organization utilizes open systems network mechanisns to boost analytic connectivity.	Xiao, X., Tian, Q., & Mao, H. (2020).
		Compatibility 1.Software applications can be easily transported across multiple analysis platforms. 2.Our user interfaces provide transparent access to all platforms an applications. 3.Analytical-driven information is shared seamlessly across our organization,regardless of the location	
		Modularity 1.Reusable software models are widely used in new analysis model development. 2.End-users utilize object-oriented tools to create	

		their own analysis applications. 3.Object-oriented technologies are utilized to minimize the development time for new analysis applications.	

1.5 Complementary in Alliance

Complementary in Alliance is defined as any formal collaborative relationship between independent firms (Zhang, C.B., Li, Y.N., Wu, B. & Li, D.J., 2017). Digital connection between enterprises with information technology as a medium is inter-enterprise cooperation, information partnership , digital partnership, digital integratio, quasi-integration and coupling decisions, digital connection (Teo & Benbasat, 2003) and relational learning.

The questionnaire was modified and refined from the previous study on a 5-point Likert scale (1 not at all, 5 very good) as shown in <Tables 3-5>.

<Table 3-5> Measurement items (5)

Construct		Measurement items	Sources
Complementary in Alliance	4	A wide range of applications are available on TenPay/KakaoPay.	Zhang, C. B., Li, Y. N., Wu, B., & Li, D. J. (2017).
		A wide range of supporting tools on TenPay/KakaoPay	
		A wide range of news and information I can subscribe to TenPay /KakaoPay	
		A wide range of games are available on TenPay/KakaoPay	

1.6 Perceived Value

Perceived value is the consumer's subjective evaluation of the trade-off bet ween benefits obtained and sacrifices made from a product or service (Liu, F., Zhao, X., Chau, P.Y. & Tang, Q., 2015).

The questionnaire was modified and refined from the previous study on a 5-point Likert scale (1 not at all, 5 very good) as shown in <Tables 3-6>

<Table 3-6 > Measurement items(6)

Construct		Measurement items	Sources
Perceived Value	4	Compared to the fee I need to pay, the use of mobile payments applications offer value for money	Zhang, C. B., Li, Y. N., Wu, B., & Li, D. J. (2017).
		Compared to the effort I need to put in, the use of mobile payments applications is beneficial to me	
		Compared to the time I need to spend, the use of mobile payments applications is worthwhile to me	
		Overall, the use of mobile payments applications delivers me good value	

1.7 Continuous Intention to Use

Continuous intention to use is defined as a user's Continuous Intention to Use a new service (Shao, Z., Zhang, L., Li, X. & Guo, Y., 2019).

The questionnaire was modified and refined from the previous study on a 5-point Likert scale (1 not at all, 5 very good) as shown in <Tables 3-7>.

<Table 3-6 >Measurement items (6)

Construct		Measurement items	Sources
Continuous Intention to Use	3	I intend to continue using the mobile payment platform rather than discontinue its use	Liébana-Cabanillas, F., Marinkovic, V., de Luna, I. R., & Kalinic, Z. (2018).
		My intentions are to continue using the mobile payment platform than use any alternative means	
		My intentions are to continue using the mobile payment platform than use any alternative means	

2.Organize the Questionnaire

The questionnaire used in this study was designed in eight sections with fifty-one measurements. First, there were nine measurements to measure the beneficial factors of the mobile payment platform, and fourteen measurements for the sacrificial factors. Four measurements were used to measure Impulse Buying Tendency. Ten measurements were used to measure data analysis capability. Four measurements were used to measure compliance of alliances. Four measurements were used to measure perception value. Three measurements were used to measure continuous intention to use. Three measurements were used to measure personal innovativeness. Lastly, four measurements were used to examine demographic characteristics. The composition of the questionnaire is shown in <Table3-8>.

<Table 3-8> Composition of the Questionnaire

Construct		Measurements	Number	Scale
Mobile payment Platform	Benefits	Social Influence (3) Economic Value (3) Mobility (3)	9	Five point scale
	Sacrifice	Switching Cost (3) Perceived risk (8) Complexity (3)	14	Five point scale
The perceived value		Perceived value (4)	4	Five point scale
Continuous Intention to Use		Continuous Intention to Use (3)	3	Five point scale
Personal Innovativeness			3	Five point scale
Impulse Buying Tendency			4	Five point scale
Data Analysis Capability			10	Five point scale
Complementary in Alliance			4	Five point scale
Demographic characteristics		Gender, Age, Education degree, and Average monthly income	4	Five point scale
Total			56	

2. Survey Objects and Data Collection

In this study, the most representative mobile payment platforms within China and South Korea, TenPay and KakaoPay, were both incredibly successful mobile payment platforms in their own countries. Their basic features and user base are extremely similar, both upstream and downstream. They provide messaging-based remittance services, while being able to be handle payment services online and offline.

<Table 3-9>Research on mobile payment platform

Country	Platform
China	TenPay
South Korea	KakaoPay

To understand how the characteristics of each mobile payment platform, affect user Perceived value and the continuous intention to use, this study conducted a questionnaire for Chinese and South Korean people who had used TenPay and KakaoPay in China and South Korea. The questionnaire lasted from 13 July to 13 September 2021. After removing dishonest and other no respondents, there were valid responses from 415 Chinese respondents, and 388 South Korean respondents which were used for analytical data.

3.Analysis Method

This study performed statistical processing of questionnaire data collected for empirical analysis using the SPSS24.0 statistical package and Amos 24.0. The specific statistical analysis method used to test the study hypotheses is as follows:

First, a frequency analysis was performed to understand the demographic characteristics of the respondents.

Second, to verify the reliability of the measured parameters, the Cronbach's α coefficient was calculated.

Third, an exploratory factor analysis (EFA) was performed to verify the c

onceptual feasibility of the measurement, and a confirmatory factor analysis (C FA) was performed to verify the centralized feasibility of the measurement too l.

Fourth, to verify the conceptual feasibility of these measured items, a corr elation analysis was performed. Lastly, to test the research hypotheses, a struct ural equation model was using IBM SPSS Amos 24.0.

IV. Empirical Analysis

1. Demographic Characteristics

1.1 Demographic Characteristics (South Korea)

The demographic characteristics of the South Korean respondents are show n in <Table 4-1>. In terms of the gender, there were 213 women (54.9%) and 175 men (45.1%). In terms of the age, 137 people (35.3%) were in their 20s, representing the largest share. This was followed by 128 people (33.0%) in t heir 30s; 58 people (14.9%) in their 40s, 53 people (13.7%) in their 50s; and 12 people (3.1%) in their 10s. For the highest level of academic qualifications, whether currently studying or graduated, four-year university had the largest s hare with 143 people (36.9%); followed by master's degree students with 103 people (26.5%); two-year university with 61 people (15.7%); below high schoo l, there were 57 people (14.7%); Doctorate degree students (studying or gradua te)there were 24 people (6.2%). In terms of average monthly income, there we re 126 people (32.5%) that ranged from 1 million won to 2 million won; 124 people (32.0%) from 2 million won to 3 million won; 71 people (18.3%) fro m 3 million won to 4 million won, 59 people (15.2%) with less than 1 millio n won; and 8 people with more than 4 million won (2.1%).

<Table 4-1> Demographic Analysis (South Korea)

Division	Item	Frequency (N)	Percentage
Gender	Male	175	45.1
	Female	213	54.9
Age	In their 10s	12	3.1
	In his 20s	137	35.3
	In their 30s	128	33
	In their 40s	58	14.9
	Over 50s	53	13.7
Education degree	High School and below	57	14.7
	Two-year university (studying or graduate)	61	15.7
	Four-year university (studying or graduate)	143	36.9
	Master's degree (studying or graduate)	103	26.5
	Doctorate degree (studying or graduate)	24	6.2
Average monthly income	Less than 1 million won	59	15.2
	1 million won-2 million won	126	32.5
	2 million won-3 million won	124	32
	3 million won - 4 million won	71	18.3
	Over 4 million won	8	2.1
Total		388	100

1.2 Demographic Characteristics (China)

The demographic characteristics of the Chinese respondents are shown in <Table 4-2>.In terms of gender, there were 251 females (60.5%) and 164 mal es (39.5%). In terms of age, 223 people (53.7%) were their 20s, followed by 115 people (27.7%) in their 30s. 40 people (9.6%) were in their 50s; 32 peopl

e (7.7%) were in their 40s; 5 people (1.2%) were in their 10s. For the highest level of academic qualifications, whether currently studying or graduated, four -year university had 263 people (63.4%); two-year university had 69 people (1 6.6%); high schools and below had 51 people (12.3%); Master's degree stude nts had 20 people (4.8%); Doctorate degree (studying or graduate) had 12 peo ple (2.9%). In terms of average monthly income, there were 139 people (33. 5%) with less than 5,000 yuan;114 people (ranging from) 10,000 to 15,000 yu an (27.5%); 98 (23.6%) from 5,000 to 10,000 yuan; 43 (10.4%) from 15,000 t o 20,000 yuan; and 21 people (5.1%) with more than 20,000 yuan.

<Table 4-2> Demographic Analysis (China)

Division	Item	Frequency (N)	Percent （%）
Gender	Male	164	39.5
	Female	251	60.5
Age	In their 10s	5	1.2
	In his 20s	223	53.7
	In their 30s	115	27.7
	In their 40s	32	7.7
	Over 50s	40	9.6
Education degree	High School and below	51	12.3
	Two-year university (studying or graduate)	69	16.6
	Four-year university (studying or graduate)	263	63.4
	Master's degree (studying or graduate)	20	4.8
	Doctorate degree (studying or graduate)	12	2.9

Average monthly income	Less than 1 million won	139	33.5
	1 million won-2 million won	98	23.6
	2 million won-3 million won	114	27.5
	3 million won - 4 million won	43	10.4
	Over 4 million won	21	5.1
Total		415	100

2. Reliability Analysis and Confirmatory Factor Analysis

2.1 Reliability Analysis

Exploratory factor analysis (EFA) is a technique used to find the essential structure of multivariate observational constructs and process them for dimensi on reduction, which allows constructs with intricate relationships to be integrate d down into a few core factors. The reliability coefficient is an important indi cator to measure the consistency of all items in the questionnaire. The most c ommonly used detection method is the Cronbach's α coefficient, which is the most commonly used reliability metric, to verify the reliability of the questionn aire. In general, Cronbach's α coefficient between 0.70 and 0.80 is acceptable, while anything above 0.80 is good (George & Mallery, 2016). Before explora tory factor an alysisiscarried out, the KMO test and Bartlett's Test of Sphericit y should be performed (Watson, 2017). In general, the KMO index should be more than 0.70, while Bartlett's Test of Sphericity should be less than the des ired significant value of 0.05. If the two tests meet the standard at the same t ime, then the sample is suitable for exploratory factor analysis (Leech et al., 2

005).

2.1.1 Exploratory Factor Analysis and Reliability Analysis (South Korea)

The tentative factor analysis and reliability validation results of South Korean respondents are shown in <Table 4-3>. The KMO index is 0.886. The evaluated validation values for Bartlett were 4,576.756, df=276, sig=0.000, the null hypothesis of zero inter variable correlation matrix was rejected. In addition, the factor's Igen values ranged between 2.325 and 2.520. The variance ranged from 9.687% to 10.502% and accumulated to 81.000%. The factor load for all items were above 0.5, which proved the factors were properly measured. According to the reliability analysis results, the Cronbach's reliability values of each measurement were all above 0.8, indicating that the measurement can be acceptable with high reliability.

<Table 4-3> Reliability Analysis (South Korea)

Variable	Item	Factor								Cronbach's
		1	2	3	4	5	6	7	8	
Social Influence	SI1	0.161	-0.05	-0.141	-0.055	0.217	0.109	0.135	**0.762**	0.81
	SI2	0.088	-0.102	-0.16	-0.044	-0.007	0.218	0.096	**0.776**	
	SI3	0.098	-0.099	-0.2	-0.036	0.131	0.131	0.105	**0.832**	
Economic Value	EV1	0.196	-0.022	-0.056	-0.023	**0.802**	0.178	0.221	0.147	0.846
	EV2	0.083	-0.16	-0.206	-0.105	**0.794**	0.2	0.092	0.062	
	EV3	0.183	-0.204	-0.034	-0.088	**0.801**	0.154	0.142	0.14	
Mobility	M1	0.211	-0.195	-0.223	-0.037	0.227	**0.775**	0.17	0.245	0.924
	M2	0.176	-0.15	-0.187	-0.036	0.214	**0.809**	0.201	0.213	
	M3	0.173	-0.183	-0.154	-0.088	0.219	**0.809**	0.194	0.159	

Switching Cost	SC1	-0.086	0.071	-0.021	**0.858**	-0.022	0.023	-0.117	-0.098	0.863
	SC2	-0.097	-0.039	0.124	**0.882**	-0.058	-0.063	-0.1	-0.042	
	SC3	-0.07	0.044	0.087	**0.873**	-0.099	-0.078	-0.063	0.019	
Perceived Risk	PR1	-0.084	**0.9**	0.102	-0.027	-0.177	-0.116	-0.124	-0.02	0.875
	PR2	-0.063	**0.857**	0.16	0.102	-0.152	-0.09	-0.117	-0.042	
	PR3	-0.171	**0.791**	0.066	0.011	-0.02	-0.199	-0.085	-0.207	
Complexity	C1	-0.157	0.146	**0.792**	0.045	-0.135	-0.224	-0.169	-0.235	0.876
	C2	-0.157	0.087	**0.824**	0.092	-0.019	-0.101	-0.18	-0.159	
	C3	-0.095	0.137	**0.812**	0.087	-0.162	-0.162	-0.183	-0.175	
Perceived Value	PV1	**0.821**	-0.089	-0.171	-0.135	0.246	0.125	0.146	0.128	0.897
	PV2	**0.832**	-0.135	-0.049	-0.096	0.121	0.169	0.194	0.148	
	PV3	**0.851**	-0.114	-0.191	-0.087	0.112	0.167	0.12	0.101	
Continuous Intention to Use	CIU1	0.154	-0.091	-0.175	-0.12	0.144	0.136	**0.826**	0.083	0.89
	CIU2	0.155	-0.178	-0.179	-0.128	0.137	0.144	**0.819**	0.182	
	CIU3	0.184	-0.118	-0.219	-0.123	0.22	0.243	**0.769**	0.134	
The Igen value		2.52	2.504	2.448	2.422	2.414	2.411	2.397	2.325	-
Description Distribution (%)		10.502	10.432	10.202	10.09	10.057	10.045	9.986	9.687	
Accumulated variance (%)		10.502	20.934	31.135	41.225	51.282	61.327	71.313	81	
KMO=0.886 Bartlett' Structure Validation =4576.756 df=276 sig=0. 000 Total descriptive variance =81.000										

2.1.2 Exploratory Factor Analysis and Reliability Analysis (China)

Exploratory factor analysis and reliability analysis results of Chinese samples are shown in <Table 4-4>. The KMO index is 0.880. The evaluated validation values for Bartlett were 5,135.139, df=276, sig=0.000. The null hypothesis of the zero inter variable correlation matrix was rejected. In addition, the factor's Igen values ranged between 2.324 and 2.582. The variance ranged from 9.684% to 10.758% and accumulated to 81.621%. All items had a factor load above 0.5, which proved the factors was properly measured. According to the reliability analysis results, the Cronbach's reliability values of each measurement were all above 0.8, indicating that the measurement can be acceptable with high reliability.

<Table 4-4> Reliability Analysis (China)

Variable	Item	Factor								Cronbach's
		1	2	3	4	5	6	7	8	
Social Influence	SI1	0.033	0.189	0.021	-0.169	0.098	**0.805**	0.228	-0.154	0.849
	SI2	-0.134	0.073	0.111	-0.22	0.24	**0.778**	0.121	-0.043	
	SI3	-0.127	0.154	0.099	-0.147	0.058	**0.829**	0.131	-0.152	
Economic Value	EV1	-0.109	0.152	-0.002	-0.209	**0.792**	0.165	0.172	-0.24	0.871
	EV2	-0.028	0.192	0.047	-0.099	**0.811**	0.022	0.208	-0.183	
	EV3	-0.074	0.107	0.019	-0.147	**0.833**	0.213	0.111	-0.17	
Mobility	M1	-0.037	0.08	**0.865**	0.004	-0.04	0.033	0.112	-0.101	0.873
	M2	0.035	0.082	**0.892**	-0.092	0.074	0.05	0.069	-0.026	
	M3	-0.018	0.073	**0.885**	-0.088	0.027	0.109	0.064	-0.004	
Switching	SC1	**0.938**	-0.04	0.046	0.026	-0.049	-0.072	-0.1	-0.023	0.904

Cost	SC2	**0.893**	-0.036	-0.068	0.037	-0.108	-0.084	-0.077	0.007	
	SC3	**0.884**	-0.089	0.002	0.104	-0.014	-0.035	-0.003	0.118	
Perceived Risk	PR1	0.131	-0.239	-0.076	**0.78**	-0.216	-0.219	-0.188	0.247	0.926
	PR2	0.06	-0.186	-0.074	**0.822**	-0.159	-0.21	-0.202	0.219	
	PR3	0.051	-0.195	-0.097	**0.816**	-0.152	-0.212	-0.223	0.17	
Complexity	C1	0	-0.17	-0.056	0.126	-0.165	-0.203	-0.12	**0.772**	0.811
	C2	0.037	-0.107	-0.02	0.175	-0.215	-0.033	-0.139	**0.759**	
	C3	0.072	-0.126	-0.075	0.189	-0.157	-0.109	-0.138	**0.822**	
Perceived Value	PV1	-0.077	**0.814**	0.128	-0.151	0.184	0.228	0.16	-0.151	0.896
	PV2	-0.073	**0.837**	0.089	-0.188	0.081	0.108	0.174	-0.138	
	PV3	-0.052	**0.839**	0.081	-0.179	0.196	0.106	0.173	-0.145	
Continuously Intention	CIU1	-0.044	0.181	0.098	-0.124	0.183	0.164	**0.827**	-0.115	0.896
	CIU2	-0.125	0.179	0.124	-0.215	0.167	0.141	**0.803**	-0.206	
	CIU3	-0.075	0.197	0.117	-0.262	0.184	0.237	**0.773**	-0.157	
The Igen value		2.582	2.521	2.457	2.455	2.439	2.414	2.397	2.324	-
Description Distribution (%)		10.758	10.503	10.24	10.23	10.161	10.057	9.989	9.684	
Accumulated variance (%)		10.758	21.26	31.5	41.73	51.891	61.948	71.937	81.621	
KMO=0.880 Bartlett' Structure Validation =5135.139 df=276 sig=0.000 Total descriptive variance =81.621										

2.2 Confirmatory Factor Analysis

After exploratory factor analysis and reliability analysis, Confirmatory Fact or Analysis (CFA) is performed to verify the centralized feasibility of the mea surement item. The standardized factor loading critical value needs to be greate r than 0.70, which indicates that the aggregation validity is good. The Construc t Reliability (CR) value and Average Variance Extracted (AVE) value can be calculated from the factor loading value. When the CR value is greater than 0.

70 and the AVE is greater than 0.50, that indicates that the internal quality is perfect.

2.2.1 Confirmatory Factor Analysis (South Korea)

The results of confirmatory factor analysis of the South Korean samples s how that the constitutive concepts used in <Table 4-5> all represent CR values greater than 0.7 and AVE values greater than 0.5, which have intrinsic consis tency. Furthermore, with observing the results, (p)=310.318, df=224, p=0.000, x 2/df=1.385, GFI=0.919, CFI=0.981, TLI=0.976, IFI=0.981, and RMSEA=0.037. Given this, the confirmatory factor analysis model is appropriate.

<Table 4-5> Confirmatory Factor Analysis（South Korea）

Variable	Item	SD Estimate	SE	T-value	CR	AVE
Social Influence	SI1	0.747	0.069	13.691	0.818	0.601
	SI2	0.717	0.073	12.992		
	SI3	0.855	0.064	16.306		
Economic Value	EV1	0.806	0.074	15.521	0.849	0.652
	EV2	0.773	0.071	14.656		
	EV3	0.842	0.064	16.499		
Mobility	M1	0.92	0.059	20.036	0.925	0.805
	M2	0.901	0.058	19.372		
	M3	0.87	0.064	18.292		
Switching Cost	SC1	0.772	0.065	14.649	0.865	0.683
	SC2	0.88	0.057	17.443		
	SC3	0.823	0.059	15.929		
Perceived Risk	PR1	0.942	0.065	19.952	0.882	0.715
	PR2	0.849	0.068	17.059		
	PR3	0.733	0.07	13.966		
Perceived Complexity	C1	0.899	0.059	18.68	0.879	0.708
	C2	0.776	0.055	15.061		
	C3	0.844	0.063	16.976		
Perceived	PV1	0.888	0.065	18.49	0.897	0.744

Value	PV2	0.833	0.071	16.803		
	PV3	0.866	0.069	17.801		
Continuous Intention to Use	CIU1	0.79	0.058	15.54	0.891	0.732
	CIU2	0.873	0.053	18.031		
	CIU3	0.9	0.054	18.902		
(p)=310.318(.000), df=224, x^2/df=1.385 GFI=0.919, CFI=0.981, TLI=0.976,IFI=0.981, RMSEA=0.037						

2.2.2 Confirmatory Factor Analysis(China)

The results of the confirmatory factor analysis of the Chinese samples sho w that the composition fundamental?? Key??) concepts(variables??) used in <T able 4-6> all represent CR values greater than 0.7 and AVE values greater tha n 0.5, which have intrinsic consistency. In addition, with observing the results, (p)=321.261, df=224, p=0.000, x2/df=1. 434, GFI=0.923, CFI=0.981, TLI=0.97 6, IFI=0.981, and RMSEA=0.037. Given this, the confirmatory factor analysis model is appropriate.

<Table 4-6> Confirmatory Factor Analysis（China）

Variable	Item	SD Estimate	SE	T-value	CR	AVE
Social Influence	SI1	0.825	0.071	16.76	0.852	0.658
	SI2	0.778	0.069	15.47		
	SI3	0.829	0.062	16.883		
Economic Value	EV1	0.898	0.056	19.402	0.874	0.698
	EV2	0.776	0.051	15.675		
	EV3	0.828	0.061	17.212		
Mobility	M1	0.79	0.062	15.926	0.875	0.7

	M2	0.865	0.055	18.036		
	M3	0.853	0.056	17.669		
Switching Cost	SC1	0.962	0.064	21.994	0.907	0.766
	SC2	0.848	0.065	18.099		
	SC3	0.808	0.068	16.882		
Perceived Risk	PR1	0.922	0.056	21.061	0.926	0.807
	PR2	0.897	0.057	20.112		
	PR3	0.875	0.061	19.301		
Perceived Complexity	C1	0.768	0.066	14.905	0.819	0.603
	C2	0.714	0.075	13.554		
	C3	0.842	0.062	16.85		
Perceived Value	PV1	0.889	0.062	19.413	0.897	0.745
	PV2	0.819	0.069	17.156		
	PV3	0.879	0.066	19.063		
Continuous Intention to Use	CIU1	0.797	0.054	16.544	0.896	0.743
	CIU2	0.878	0.05	19.136		
	CIU3	0.907	0.051	20.129		
(p)=321.261(.000), df=224, x^2/df=1.434 GFI=0.923, CFI=0.981, TLI=0.976, IFI=0.981, RMSEA=0.037						

3.Correlation Relationship Analysis and Discriminant Validity Testing

To further test the hypothesis, correlation matrix analysis and discriminatio n feasibility analysis were first performed. The steps to test the discriminant v alidity of each construct are mainly based on the method of Fornell and Larck er (1981). It is believed that if the square root of the AVE value is greater th an the value of the correlation coefficient, then the measurement model of eac h latent construct is significantly distinguishable. We found the discrimination f easibility of the measurement model was acceptable when the AVE value for each factor was greater than both 0.50 and the correlation coefficient square v

alue and other factors.

3.1 Correlation Relationship Analysis and Discriminant Validity Testing (South Korea)

The results of correlation relationship analysis and discriminant validity an alysis of South Korean samples are shown in <Table 4-7>. The AVE values o f the confirmatory factor analysis table were used to compare the correlation v alues with the square root values ofAVE. The square root values of AVE are relatively large; therefore, the feasibility of this variable has been fully analyze d.

The results of the discriminant validity test are shown in the <Table 4-7>. For all the below constructs, the value of the AVE is greater than its correlat ion coefficient with other factors. For Social Influence, the AVE is 0.775; for Economic Value, the AVE is 0.807;for Mobility, the AVE is 0.897; for Switch ing Cost, the AVE is 0.826; for Perceived Risk,the AVE is 0.846; for Comple xity, the AVE is 0.841; for Perceived Value, the AVE is 0.863; and for Conti nuous Intention to Use, the AVE is 0.856. According to the test standard of d iscriminant validity, the value of the square root of AVE for each construct is greater than the corresponding absolute value of the correlation coefficient, w hich indicates thatthe measurement scale has good discriminant validity.

<Table 4-7> Correlation Analysis and Discriminant Validity Testing (South Korea)

Variable	CR	AVE	1	2	3	4	5	6	7	8
1.Social Influence	0.818	0.601	0.775							
2.Economic Value	0.849	0.652	.365**	0.807						
3.Mobility	0.925	0.805	.504**	.540**	0.897					
4.Switching Cost	0.865	0.683	-.154**	-.202**	-.180**	0.826				
5.Perceived Risk	0.882	0.715	-.287**	-.357**	-.435**	0.113	0.846			
6.Perceived Complexity	0.879	0.708	-.484**	-.367**	-.515**	.210**	.352**	0.841		
7.Perceived Value	0.897	0.744	.377**	.445**	.493**	-.258**	-.329**	-.413**	0.863	
8.Continuous Intention to Use	0.891	0.732	.399** -0.159	.469** -0.22	.531** -0.282	-.291** -0.085	-.362** -0.131	-.510** -0.26	.466** -0.217	0.856

*p<0.05, **p<0.01, Square root of diagonal AVE

3.2 Correlation Relationship Analysis and Discriminant Validity Testing (China)

The results of correlation relationship analysis and discriminant validity analysis of Chinese samples are shown in <Table 4-8>. The AVE value of the confirmatory factor analysis table is used to compare the correlation value with the square root value of AVE. The square root value of AVE is relatively large; therefore, the feasibility of this variable has been fully analyzed.

The results of the discriminant validity test are shown in the <Table 4-8>. For all the below constructs, the value of the AVE is greater than its correlation coefficient with other factors. For Social Influence, the AVE is 0.811; for Economic Value, the AVE is 0.835. For Mobility, the AVE is 0.837; for Switching Cost, the AVE is 0.875; for Perceived Risk, the AVE is 0.898; for Complexity, the AVE is 0.777; for Perceived Value, the AVE is 0.863; and for Continuous Intention to Use, the AVE is 0.862. According to the test standard of discriminant validity, the value of the square root of the AVE for each construct is greater than the corresponding absolute value of the correlation coefficient between the constructs, which indicates that the measurement scale has good discriminant validity.

<Table 4-8> Correlation Analysis and Discriminant Validity Testing (China)

Variable	CR	AVE	1	2	3	4	5	6	7	8
1.Social Influence	0.852	0.658	0.811							
2.Economic Value	0.874	0.698	.412**	0.835						
3.Mobility	0.875	0.7	.204**	0.107	0.837					
4.Switching Cost	0.907	0.766	-.194**	-.187**	-0.039	0.875				
5.Perceived Risk	0.926	0.807	-.534**	-.491**	-.215**	.202**	0.898			
6.Perceived Complexity	0.819	0.603	-.376**	-.504**	-.157**	.129*	.520**	0.777		
7.Perceived Value	0.897	0.745	.427**	.437**	.239**	-.178**	-.526**	-.421**	0.863	

8.Continuous Intention to Use	0.896	0.743	.491**	.487**	.263**	-.203**	-.567**	-.450**	.505**	0.862

*p<0.05, **p<0.01, Square root of diagonal AVE

4. Validating the Research Model and Hypotheses

This research is based on a conceptual model and the structural equation model (SEM) was used for analysis. Khine (2013) considers that SEM can measure the indirect and direct influences between variables in a theoretical model. SEM is widely used in empirical information systems studies (Urbach & Ahlemann, 2010), and it is one of the most powerful research methodologies (Richter et al., 2016). Model evaluation is verifying each hypotheses path in the SEM and judging whether the model hypotheses has reached statistical significance through the P value or T value (Wen et al., 2004). The direct path existing between the constructs was tested. The P value was used to judge whether the model hypothesis reached statistical significance. P value should be less than 0.05, at the significance level. SE is the standard error. ST-Estimate is the standardized value of each path coefficient.

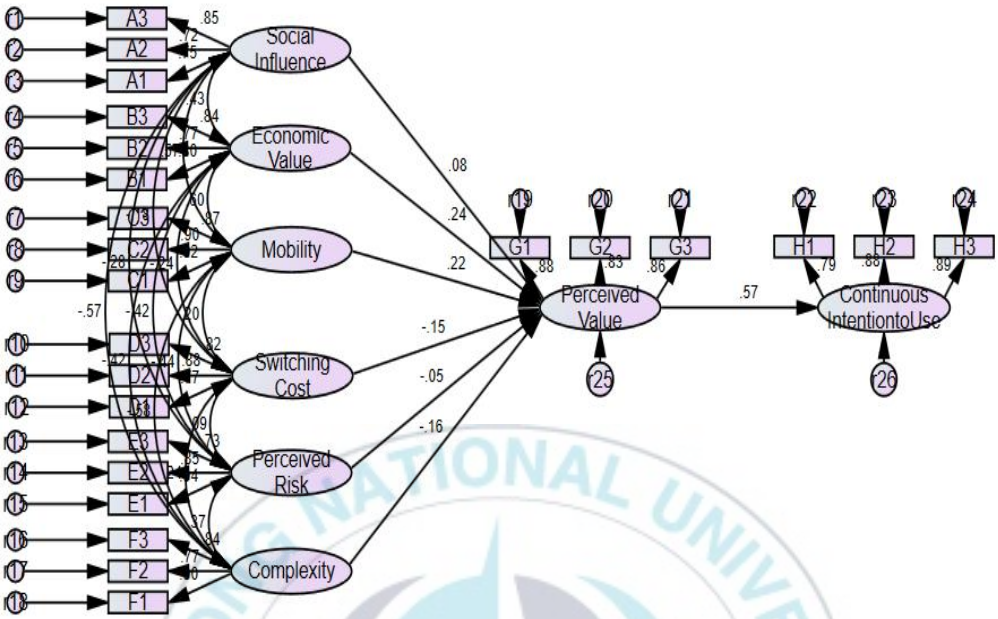
4.1 Validating the Research Model (South Korea)

To validate the overall structure model of the Korean sample, the optimal estimation method (maximum likelihood method) was analyzed with the results as shown in <Table 4-9> with the following: x^2(CMIN)=390.614, df=230, p=0.000, x^2/df=1.698, GFI=0.902, CFI=0.964, TLI=0.957, IFI=0.964, and RMSEA=0.049. The optimal model, the SEM in this paper is at an excellent level of data fitting, and the external quality of the model is perfect.

In addition, to explore the structural causal relationship in South Korea be tween Social Influence, Economic Value, Mobility, Switching Cost, Perceived Risk, Perceived Complexity, Perceived Value, and Continuous Intention to Use, the results of the study model analysis are shown in <Figures 4-1>. The anal ysis results show that, with the seven researched pathways, there are five path ways with significant causal relationships.

<Table 4-9>Research Model Fit (South Korea)

Fit index	Acceptance criteria	Model fitting	Acceptability
x^2(CMIN)	p>0.05	390.614	Inadequate to accept
df		230	
p		0.000	
x^2/df	less than 3.00	1.698	Acceptable
Correct Fit Index (GFI)	higher than 0.90	0.902	Acceptable
Comparative Fit Index (CFI)	higher than 0.90	0.964	Acceptable
Tucker Lewis Index (TLI)	higher than 0.90	0.957	Acceptable
Incremental Matching Index (IFI)	higher than 0.90	0.964	Acceptable
Root mean square error of approximation (RMSEA)	less than 0.08	0.049	Acceptable



<Figure. 4-1>. Structural Model (South Korea)

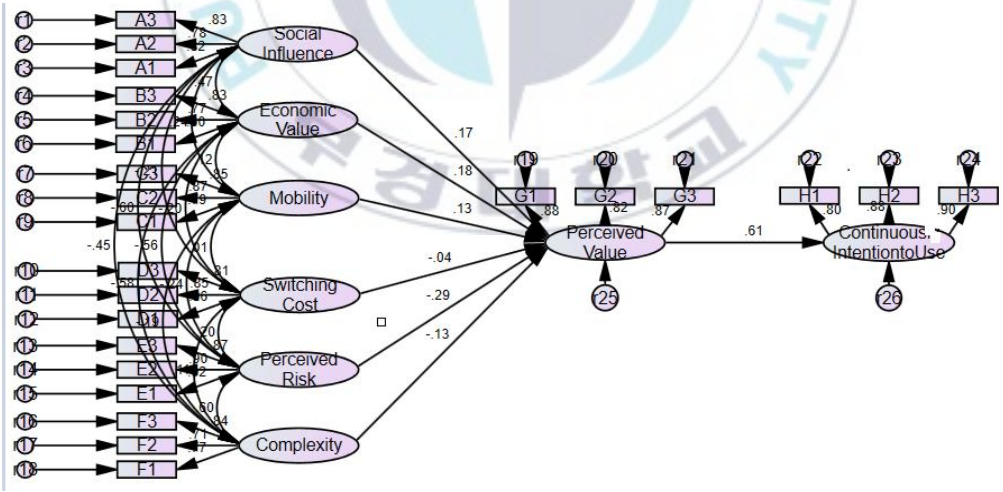
4.2 Validating the Research Model (China)

To validate the overall structural model of Chinese samples, analysis was performed using the optimal estimation method (maximum likelihood method) a nd the results are shown in <Table 4-9> with the following: 2 (CMIN)=405.2 61, df=230, p=0.000, x2/df=1.762, GFI=0.908, CFI=0.965, TLI=0.958, IFI=0.96 5, and RMSEA=0.049. The optimal model, it can be seen that the structural e quation model in this paper is the external quality of the model is perfect and at an excellent level of data fitting. To explore the structural causal relationsh ip in China between Social Influence, Economic Value, Mobility, Switching Co st, Perceived Risk, Complexity, Perceived Value, and Continuous Intention to Use, the results of the study model analysis are shown in <Figure4-2>. The an

alysis results show that, with the seven researched pathways, there are 5 pathw ays with significant causal relationships.

<Table 4-10> Research Model Fit (China)

Fit index	Acceptance criteria	Model fitting	Acceptability
x^2 (CMIN)	p>0.05	405.261	Inadequate to accept
df		230	
p		0.000	
x^2 /df	less than 3.00	1.762	Acceptable
Correct index (GFI)	higher than 0.90	0.908	Acceptable
Comparative Fit Index(CFI)	higher than 0.90	0.965	Acceptable
Tucker Lewis Index(TLI)	higher than 0.90	0.958	Acceptable
Incremental Matching Index (IFI)	higher than 0.90	0.965	Acceptable
Root mean square error of approximation (RMSEA)	less than 0.08	0.049	Acceptable



<Figure4-2> Structural Model (China)

4.3 Validating the Hypothesis

4.3.1 Validating the Hypothesis(South Korea)

1) Hypothesis 1 Testing

The beneficial factors of the mobile payment platform will have a significant positive (+) impact on perceived value. Given that there are three beneficial factors, Hypothesis 1 is separated into H1a, H1b, and H1c. The analysis results are as follows:

H1a Social influence has a significant positive (+) effect on perceived value. This was rejected with a standardized path coefficient of 0.081 ($p>0.05$).

H1b Economic value has a significant positive (+) effect on perceived value. This was accepted with a standardized path coefficient of 0.244 ($p<0.01$).

H1c Mobility will have a significant positive (+) effect on perceived value. This was accepted with a standardized path coefficient of 0.224 ($p<0.01$).

2) Hypothesis 2 Testing

The sacrificial factors of the mobile payment platform will have a significant negative (-) impact on perceived value. Given that there are three sacrificial factors, Hypothesis 2 is separated into H2a, H2b, and H2c. The analysis results are as follows:

H2a Switching Cost will have a significant negative (-) effect on perceived value. This was accepted with a standardized path coefficient of 0.149 ($p<0.01$).

H2b Perceived risk will have a significant negative (-) effect on perceived value. This was rejected with the standardized path coefficient of -0.050 ($p>0.05$).

H2c Complexity will have a significant negative (-) effect on perceived va

lue. This was adopted with a standardized path coefficient of -0.162 ($p<0.05$).

3) Hypothesis 3 Testing

H3 The perceived value of the mobile payment platform will have a signi ficant positive (+) effect on continuous intention to use. This was accepted wit h a standardized path coefficient of 0.566 ($p<0.001$).

<Table 4-11> Results of Causal Relationship Hypothesis Testing (South Korea)

Hypothesis	Regression Weights	Estimate	SE	SD Estimate	T-value	P-value
H1a	Social influence →Perceived Value	0.104	0.096	0.081	1.073	0.283
H1b	Economic Value →Perceived Value	0.256	0.079	0.244	3.24	0.001**
H1c	Mobility →Perceived Value	0.228	0.084	0.224	2.713	0.007**
H2a	Switching Cost →Perceived Value	-0.189	0.071	-0.149	-2.656	0.008**
H2b	Perceived Risk →Perceived Value	-0.047	0.056	-0.05	-0.832	0.406
H2c	Complexity →Perceived Value	-0.176	0.082	-0.162	-2.158	0.031*
H3	Perceived Value →Continuous Intention to Use	0.424	0.048	0.566	8.823	0.000***

*p<0.05,**p<0.01,***p<0.001

4.3.2 Validating the Hypothesis (China)

1) Hypothesis 1 Testing

The beneficial factors of the mobile payment platform will have a significant positive (+) impact on perceived value. Given that there are three beneficial factors, Hypothesis 1 is separated into H1a, H1b, and H1c. The analysis results are as follows:

H1a Social influence has a significant positive (+) effect on perceived value. This was adopted with a standardized path coefficient of 0.166 ($p<0.05$).

H1b Economic value has a significant positive (+) effect on perceived value. This was accepted with a standardized path coefficient of 0.183 ($p<0.01$).

H1c Mobility will have a significant positive (+) effect on perceived value. This was accepted with a standardized path coefficient of 0.129 ($p<0.05$).

2) Hypothesis 2 Testing

The sacrificial factors of the mobile payment platform will have a significant negative (-) impact on perceived value. Given that there are three sacrificial factors, Hypothesis 2 is separated into H2a, H2b, and H2c. The analysis results are as follows:

H2a Switching Cost will have a significant negative (-) effect on perceived value. This was rejected with a standardized path coefficient of -0.039 ($p>0.05$).

H2b Perceived risk will have a significant negative (-) effect on perceived value. This was adopted with the standardized path coefficient of -0.291 ($p<0.001$).

H2c Complexity will have a significant negative (-) effect on perceived va

lue. This was rejected with a standardized path coefficient of -0.126 (p>0.05).

3) Hypothesis 3 Testing

H3 The perceived value of the mobile payment platform will have a signi ficant positive (+) effect on continuous intention to use. This was accepted wit h a standardized path coefficient of 0.607 (p<0.001).

<Table 4-12> Results of Causal Relationship Hypothesis Testing (China)

Hypothesis	Regression Weights	Estimate	SE	SD Estimate	T-value	P-value
H1a	Social influence →Perceived Value	0.167	0.069	0.166	2.408	0.016*
H1b	Economic Value →Perceived Value	0.203	0.077	0.183	2.63	0.009**
H1c	Mobility →Perceived Value	0.157	0.064	0.129	2.476	0.013*
H2a	Switching Cost →Perceived Value	-0.034	0.042	-0.039	-0.798	0.425
H2b	Perceived Risk →Perceived Value	-0.292	0.076	-0.291	-3.848	0.000***
H2c	Complexity →Perceived Value	-0.154	0.091	-0.126	-1.691	0.091
H3	Perceived Value →Continuous Intention to Use	0.455	0.045	0.607	10.049	0.000***

*p<0.05,**p<0.01,***p<0.001

4.3.3 Moderating Results (South Korea)

1) Hypothesis 4 Testing

The effect of factors of mobile payment platform on perceived value will vary due to different personal innovativeness.To test these hypotheses, this stud y performed hierarchical regression analysis. The results of the validation are s hown in <Table 4-13>.

The results of the analysis showed that only the relationship between mob ility and personal innovativeness has significant positive (+) effects on perceive d value. Therefore, H4a3 was accepted.

<Table 4-13> Moderating Test of Personal Innovativeness (South Korea)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.091	1.535	0.126	0.089	1.506	0.133	-0.137	-0.896	0.371
Economic Value (b)	0.192	3.237	0.001**	0.194	3.273	.001**	0.342	2.056	0.041*
Mobility (c)	0.219	3.264	0.001**	0.218	3.253	.001**	0.708	3.659	0.000***
Switching Cost (d)	-0.129	-2.583	0.010*	-0.13	-2.602	.010*	-0.048	-0.333	0.739
Perceived Risk (e)	-0.079	-1.431	0.154	-0.078	-1.415	0.158	0.125	0.76	0.448
Complexity (f)	-0.131	-2.168	0.031*	-0.131	-2.167	.031*	0.083	0.441	0.659
Personal Innovativeness (m)				-0.04	0.82	0.413	-0.791	2.06	0.040*
a×m							0.376	1.503	0.134
b×m							-0.211	-0.892	0.373
c×m							0.733	2.684	0.008**

d×m							-0.101	-0.558	0.577
e×m							-0.24	-1.237	0.217
f×m							-0.267	-1.134	0.258
R^2	0.341			0.342			0.37		
"R^2				0.002			0.028		
F	24.218			20.83			12.391		
sig	0.000***			0.000***			0.000***		

*p<0.05,**p<0.01,***p<0.001

2）Hypothesis 5 Testing

The effect of factors of mobile payment platform on perceived value will vary due to different impulse buying tendency. To test these hypotheses, a hier archical regression analysis was performed. The results of validation are shown in <Table 4-14>.

The impulse buying tendency had effect on switching cost and perceived value. Therefore, H5b1 was accepted.

<Table 4-14> Moderating Test of Impulse Buying Tendency (South Korea)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.091	1.535	0.126	0.095	1.614	0.108	-0.197	-1.556	0.121
Economic Value (b)	0.192	3.237	0.001**	0.199	3.378	0.001**	0.366	2.837	0.005
Mobility (c)	0.219	3.264	0.001**	0.208	3.112	0.002**	0.273	1.896	0.059
Switching Cost (d)	-0.129	-2.583	0.010*	-0.106	-2.082	0.038*	-0.26	-2.078	0.039
Perceived Risk (e)	-0.079	-1.431	0.154	-0.09	-1.64	0.102	0.007	0.058	0.954
Complexity (f)	-0.131	-2.168	.031*	-0.111	-1.826	0.069	-0.398	-2.949	0.003
Impulse Buying Tendency (m)				0.104	-2.047	0.042*	0.617	-1.565	0.119
a×m							-0.207	1.131	0.259
b×m							0.364	-1.657	0.099
c×m							0.079	-0.344	0.731
d×m							-0.611	2.632	0.009**
e×m							0.163	-1.004	0.316
f×m							-0.537	2.525	0.012
R^2	0.341			0.351			0.389		
"R^2				0.01			0.039		
F	24.218			21.592			13.442		
sig	0.000***			0.000***			0.000***		

*p<0.05,**p<0.01,***p<0.001

3）Hypothesis 6 Testing

The effect of factors of mobile payment platform on perceived value will vary due to different data analysis capability. To test these hypotheses, a hierarchical regression analysis was performed. The results of validation are shown in <Table 4-15>.

The data analysis capability had effect on economic value and perceived value,therefore, H61b was accepted.

<Table 4-15> Moderating Test of Data Analysis Capability (South Korea)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.091	1.535	0.126	0.093	1.562	0.119	0.189	1.544	0.124
Economic Value (b)	0.192	3.237	0.001	0.188	3.157	0.002	0.114	0.915	0.361
Mobility (c)	0.219	3.264	0.001	0.22	3.274	0.001	0.166	1.226	0.221
Switching Cost (d)	-0.129	-2.583	0.01	-0.133	-2.645	0.009	-0.193	-1.861	0.064
Perceived Risk (e)	-0.079	-1.431	0.154	-0.082	-1.479	0.14	-0.294	-2.588	0.01
Complexity (f)	-0.131	-2.168	0.031	-0.13	-2.14	0.033	0.054	0.42	0.675
Data Analysis Capability(m)				-0.037	-0.747	0.456	-0.169	-0.433	0.665
a×m							-0.219	-0.938	0.349
b×m							0.339	2.12	0.035
c×m							0.127	0.503	0.616

d×m							0.084	0.601	0.548
e×m							0.121	0.565	0.572
f×m							-0.286	-1.586	0.114
R^2	0.341			0.342			0.359		
"R^2				0.001			0.017		
F	24.218			20.805			11.803		
sig	.000***			.000***			.000***		

p<0.05,**p<0.01,***p<0.001

4) Hypothesis 7 Testing

The effect of factors of mobile payment platform on perceived value will vary depending on complementary in alliance. To test these hypotheses, a hiera rchical regression analysis was performed. The results of validation are shown in <Table 4-16>.

The complementary in alliance has no effect on the beneficial and sacrific ial factors and perceived value.Therefore, every hypothesis was rejected.

<Table 4-16> Moderating Test of Complementary in Alliance(South Korea)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.091	1.535	0.126	0.09	1.524	0.129	-0.072	-0.539	0.59
Economic Value (b)	0.192	3.237	0.001	0.192	3.234	0.001	0.252	2.013	0.045
Mobility (c)	0.219	3.264	0.001	0.219	3.265	0.001	0.31	2.081	0.038
Switching Cost (d)	-0.129	-2.583	0.01	-0.13	-2.59	0.01	-0.136	-1.323	0.187
Perceived Risk (e)	-0.079	-1.431	0.154	-0.079	-1.435	0.152	0.193	1.6	0.111
Complexity (f)	-0.131	-2.168	0.031	-0.132	-2.173	0.031	-0.313	-2.562	0.011
Complementary in Alliance(m)				-0.013	-0.259	0.795	-0.008	-0.02	0.984
a×m							0.339	1.356	0.176
b×m							-0.13	-0.578	0.564
c×m							-0.137	-0.528	0.598
d×m							-0.006	-0.041	0.967
e×m							0.162	1.073	0.283
f×m							0.299	1.724	0.086
R^2	0.341			0.342			0.352		
"R^2				0.001			0.01		
F	24.218			20.699			12.009		
sig	0.000***			0.000***			0.000***		

p<0.05,**p<0.01,***p<0.001

4.3.4 Moderating Results (China)

1) Hypothesis 4 Testing

The effect of factors of mobile payment platform on perceived value will v ary due to different Personal Innovativeness. To verify these hypotheses, this st udy performed hierarchical regression analysis. The results of the validation are shown in <Table 4-17>.

The personal innovativeness has a significant effect on social influence and perceived value. Therefore, H4a1 was accepted.

<Table 4-17> Moderating Test of Personal Innovativeness (China)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.133	2.395	0.017	0.133	2.37	0.018	0.426	2.953	0.003
Economic Value (b)	0.165	2.915	0.004	0.165	2.907	0.004	0.313	1.899	0.059
Mobility (c)	0.114	2.427	0.016	0.114	2.425	0.016	0.021	0.16	0.873
Switching Cost (d)	-0.045	-0.968	0.334	-0.046	-0.969	0.333	0.023	0.184	0.854
Perceived Risk (e)	-0.278	-4.545	0	-0.277	-4.498	0	-0.127	-0.735	0.463
Complexity (f)	-0.119	-2.098	0.037	-0.119	-2.092	0.037	0.021	0.124	0.902
Personal Innovation (m)				0.005	-0.116	0.907	-0.691	1.64	0.102
a×m							0.423	-2.195	0.029
b×m							-0.233	-0.941	0.347

c×m							0.155	0.722	0.471
d×m							-0.097	-0.6	0.549
e×m							-0.249	-1.001	0.318
f×m							-0.174	-0.763	0.446
R^2	0.36			0.36			0.375		
"R^2				0			0.014		
F	28.931			24.721			13.88		
sig	.000***			.000***			.000***		

*p<0.05,**p<0.01,***p<0.001

2) Hypothesis 5 Testing

The effect of factors of mobile payment platform on perceived value will vary due to different impulse buying tendency. To test these hypotheses, a hier archical regression analysis was performed. The results of validation are shown in <Table 4-18>.

The personal innovativeness has no effect on beneficial and sacrificial fact ors and perceived value.Therefore, every hypothesis was rejected.

<Table 4-18>. Moderating test of Impulse Buying Tendency(China)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.133	2.395	0.017	0.136	2.438	0.015	0.104	0.546	0.586
Economic Value (b)	0.165	2.915	0.004	0.166	2.931	0.004	0.244	1.285	0.2

Mobility (c)	0.114	2.427	0.016	0.112	2.387	0.018	0.103	0.753	0.452
Switching Cost (d)	-0.045	-0.968	0.334	-0.042	-0.896	0.371	-0.115	-0.815	0.416
Perceived Risk (e)	-0.278	-4.545	0	-0.275	-4.492	0	-0.432	-2.232	0.026
Complexity (f)	-0.119	-2.098	0.037	-0.119	-2.085	0.038	-0.041	-0.226	0.822
Impulse Buying Tendency (m)				0.038	0.822	0.412	-0.019	-0.043	0.966
a×m							0.043	0.168	0.867
b×m							-0.132	-0.473	0.637
c×m							0.018	0.084	0.933
d×m							0.091	0.553	0.58
e×m							0.193	0.857	0.392
f×m							-0.095	-0.439	0.661
R^2	0.6			0.362			0.367		
"R^2				0.001			0.005		
F	28.931			24.868			13.402		
sig	.000***			.000***			.000***		

*p<0.05,**p<0.01,***p<0.001

3）Hypothesis 6 Testing

The effect of factors of mobile payment platform on perceived value will vary due to different data analysis capability.To test these hypotheses, a hierarc hical regression analysis was performed. The results of validation are shown in <Table 4-19>.

The data analysis capability has a significant effect on economic value an d perceived value,therefore, H6b2 was accepted.

<Table 4-19> Moderating Test of Data Analysis Capability (China)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.133	2.395	0.017	0.133	2.382	0.018	-0.032	-0.293	0.769
Economic Value (b)	0.165	2.915	0.004	0.165	2.908	0.004	0.371	3.189	0.002
Mobility (c)	0.114	2.427	0.016	0.114	2.425	0.016	0.204	2.163	0.031
Switching Cost (d)	-0.045	-0.968	0.334	-0.045	-0.957	0.339	0.021	0.23	0.819
Perceived Risk (e)	-0.278	-4.545	0	-0.277	-4.52	0	-0.321	-2.536	0.012
Complexity (f)	-0.119	-2.098	0.037	-0.12	-2.1	0.037	0.02	0.178	0.859
Data Analysis Capability(m)				0.008	-0.175	0.861	-0.499	1.225	0.221
a×m							-0.34	1.729	0.085
b×m							0.472	-2.09	0.037
c×m							0.216	-1.13	0.259
d×m							0.134	-0.927	0.355
e×m							-0.1	0.554	0.58
f×m							0.236	-1.395	0.164
R^2	0.36			0.361			0.379		
"R^2				0.001			0.018		
F	28.931			24.724			14.13		
sig	.000***			.000***			.000***		

p<0.05,**p<0.01,***p<0.001

4)Results of Hypothesis 7 Testing

The effect of factors of mobile payment platforms on perceived value will vary depending on complementary in alliance. To test these hypotheses, a hiera rchical regression analysis was performed. The results of validation are shown in <Table 4-16>.

The complementary in alliance has a significant effect on economic value and perceived value.,therefore, H7a2 was adopted.

<Table 4-20> Moderating Test of Complementary in Alliance (China)

Variables	step 1			step 2			step 3		
	β	t	p	β	t	p	β	t	p
Social Influence (a)	0.133	2.395	0.017	0.133	2.386	0.018	0.075	0.582	0.561
Economic Value (b)	0.165	2.915	0.004	0.164	2.906	0.004	-0.125	-0.932	0.352
Mobility (c)	0.114	2.427	0.016	0.113	2.392	0.017	0.171	1.635	0.103
Switching Cost (d)	-0.045	-0.968	0.334	-0.044	-0.923	0.357	-0.148	-1.385	0.167
Perceived Risk (e)	-0.278	-4.545	0	-0.281	-4.576	0	-0.256	-1.732	0.084
Complexity (f)	-0.119	-2.098	0.037	-0.119	-2.092	0.037	-0.332	-2.562	0.011
Complementary in Alliance(m)				0.028	0.599	0.55	-0.732	-1.823	0.069
a×m							0.12	0.581	0.562
b×m							0.566	2.358	0.019
c×m							-0.15	-0.755	0.451
d×m							0.161	1.119	0.264

e×m							-0.032	-0.158	0.874
f×m							0.319	1.804	0.072
R^2	0.36			0.361			0.381		
"R^2				0.001			0.019		
F	28.931			24.798			14.231		
sig	.000***			.000***			.000***		

p<0.05,**p<0.01,***p<0.001

4.4 Hypothesis Testing Results

<Table 4-21>Results of hypothesis Testing

Hypothesis	Regression Weights	Accept / Reject	
		South Korea	China
H1a	Social Influence → Perceived Value	Reject	**Accept**
H1b	Economic Value → Perceived Value	**Accept**	**Accept**
H1c	Mobility → Perceived Value	**Accept**	**Accept**
H2a	Switching Cost → Perceived Value	**Accept**	Reject
H2b	Perceived Risk → Perceived Value	Reject	**Accept**
H2c	Complexity → Perceived Value	**Accept**	Reject
H3	Perceived Value → Continuous Intention to Use	**Accept**	**Accept**
H4a1	Personal Innovativeness plays a moderating role between Social Influence and Perceived Value	Reject	**Accept**
H4a2	Personal Innovativeness plays a moderating role between Economic Value and Perceived Value	Reject	Reject
H4a3	Personal Innovativeness plays a moderating role between Mobility and Continuous Intention to Use.	**Accept**	Reject
H4b1	Personal Innovativeness plays a moderating role between Switching Cost and Perceived Value	Reject	Reject
H4b2	Personal Innovativeness plays a moderating role	Reject	Reject

	between Perceived Risk and Perceived Value		
H4b3	Personal Innovativeness plays a moderating role between Complexity and Perceived Value	Reject	Reject
H5a1	Impulse Buying Tendency plays a moderating role between Social Influence and Perceived Value.	Reject	Reject
H5a2	Impulse Buying Tendency plays a moderating role between Economic Value and Perceived Value.	Reject	Reject
H5a3	Impulse Buying Tendency plays a moderating role between Mobility and Perceived Value	Reject	Reject
H5b1	Impulse Buying Tendency plays a moderating role between Switching Cost and Perceived Value.	**Accept**	Reject
H5b2	Impulse Buying Tendency plays a moderating role between Perceived Risk and Perceived Value	Reject	Reject
H5b3	Impulse Buying Tendency plays a moderating role between Complexity and Perceived Value	**Accept**	Reject
H6a1	Data Analysis Capability plays a moderating role between Social Influence and Perceived Value	Reject	Reject
H6a2	Data Analysis Capability plays a moderating role between Economic Value and Perceived Value	**Accept**	**Accept**
H6a3	Data Analysis Capability plays a moderating role between Mobility and Perceived Value	Reject	Reject
H6b1	Data Analysis Capability plays a moderating role between Switching Cost and Perceived Value	Reject	Reject
H6b2	Data Analysis Capability plays a moderating role between Perceived Risk and Perceived Value	Reject	Reject
H6b3	Data Analysis Capability plays a moderating role between Complexity and Perceived Value.	Reject	Reject
H7a1	Complementary in Alliance plays a moderating role between Social Influence and Perceived Value.	Reject	Reject
H7a2	Complementary in Alliance plays a moderating role between Economic Value and Perceived Value.	Reject	**Accept**
H7a3	Complementary in Alliance plays a moderating role between Mobility and Perceived Value	Reject	Reject
H7b1	Complementary in Alliance plays a moderating role	Reject	Reject

	between Switching Cost and Perceived Value.		
H7b2	Complementary in Alliance plays a moderating role between Perceived Risk and Perceived Value	Reject	Reject
H7b3	Complementary in Alliance plays a moderating role between Complexity and Perceived Value	Reject	Reject

VI. Conclusion

5.1 Discussion of the Research Findings

This research objectives to understand the effects of the beneficial and sacr ificial factors of China-South Korea mobile payment platforms on their perceiv ed value and continuous intention to use.

To achieve the main purpose of this research, we first researched the effe ct of beneficial factors (social influence, economic value, mobility) and sacrific ial factors (switching cost, perceived risk, complexity) on perceived value. Seco nd , we analyzed the effect of perceived value on the continuous intention to u se. Third, we analyzed whether personal innovativeness, impulse buying tenden cy, data analysis capability, and complementary in alliance play a moderating r ole on the beneficial and sacrificial factors of mobile payment platforms on pe rceived value.

In this research, data was collected by questionnaire, and reliability and e xploratory factor analysis by SPSS22.0 correlation analysis. Validation factor an alysis was done by Amos22.0, and pathway analysis for causal hypothesis veri fication. Furthermore, moderating effects hypothesis tests were also performed f or a multi-population analysis.

The beneficial factors of the mobile payment platform have significant pos itive (+) effects on perceived value.

Users in South Korea show that economic value has significant positive

(+) effects on perceived value ; Mobility has significant positive (+) effects on perceived value,while social influence has no significant effect on perceived value. These shows that the stronger the economic value and mobility perceived by South Korean users, the more they can feel the real economic interests of the mobile payment platform. This can include getting items cheaper than the purchase price, by using coupons, getting free items which can allow the users to want to increase their use of the mobile payment platform. About mobility, mobility is the outstanding advantage of mobile payment platform. Compared with other payment methods, users can feel that they can use mobile payment platform anytime and anywhere, and feel the good perceived value brought by mobility to users. In the terms of social influence, Kakao Pay in South Korea does not have a high adoption rate and it is well known enough. Matching measures with partner stores are not 100%.Most users do not receive recommendations from their surrounding friends, as social influence does not work on the use of Kakao Pay.

Users in China show that social influence has significant positive (+) effects on perceived value. Economic value has significant positive (+) effects on perceived value. Mobility has significant positive (+) effects on perceived value. These shows the more they feel the real economic revenue from mobile payment platforms, the more users want to use TenPay. At the same time, TenPay has reached 1.15 billion Chinese users, and these users will also be affected by the use of surrounding environments to use TenPay, such as friends, media and easy to use payment environments. In terms of economic value, Chinese users have reaped a lot of economic returns from TenPay at the beginning of th

eir adoption of TenPay. After using TenPay, users will receive part of their m oney back in their account. Some also receive a refund of the full amount pai d.These obvious economic values give users a good feeling.In terms of mobilit y,Chinese users have not experienced the era of bank card payment, and instea d directly went to the era of mobile payment from the cash era. Mobile paym ent platforms can pay anytime and anywhere. This mobility allows users to rec ieve a great experience.

The sacrificial factors of the mobile payment platform have a significant n egative (-) effect on perceived value.

Users in South Korea show that switching cost has a significant negative (-) effect on perceived value: The complexity has a significant negative (-) eff ect on perceived value; While perceived risk has no significant effect on perce ived value.

These shows that South Korean users believe that the more time and ener gy it takes to use the mobile payment platform, the less they will use the mo bile payment platform. Nowadays, the common payment habit of South Korean users is to use either bank card or cash payment, and that payment is seen a s more convenient. If it takes too much time and energy for using mobile pay ment platforms like Kakao Pay, the users do not think it is necessary to conv ert to a new means of payment. South Korean users see that the more comple x a mobile payment platform is, the more reluctant they want to use it. Many users believe that for some mobile payment platforms they need to register th eir information, along with bind their bank cards and biometric data. Whereas for people who are not familiar with smartphones, such as older users, it can

be highly inconvenient to operate the system, so they will not strongly want t o use mobile payment platforms. The risks that South Korean users believe are possible when using mobile payment platforms will not affect their use of the m, because Korean mobile payment started development early, and the relevant laws and provider policies are relatively mature. Accordingly, users will not b e distressed about the risks of mobile platforms.

Users in China show that perceived risk has significant negative (-) effect s on perceived value; While switching cost has no significant effect on perceiv ed value ; Complexity cost has no significant effect on perceived value.These s hows that Chinese users are use to using mobile payment platforms, so it is n ot difficult for them to use new payment methods . Users believe that existing mobile payment platforms are not complicated to use, and that the switching cost and complexity does not affect the user's perceived value. Nevertheless, if Chinese users think there exists higher risk for using mobile payment platfor ms, then the less likely they are to use mobile payment platforms. The highly conserning mobile payment platform risk of infringment of privacy, along wit h other important risks like property damage, and stolen accounts will affect th e use of mobile payment platforms.

Perceived value had significant positive (+) effects on continuous intention to use, with significant positive (+) effects in both South Korea and China.

Perceived value is the user's overall assessment of the utility of a product based on perceptions of what is received and what is given. From the user c hoice perspective, user estimate the value of the choice object by considering all relevant benefit and sacrifice factors. Value represents an overall estimation

of the choice object. Based on this overall estimation, consumers decide their continuous intention to use.This validates the purpose of our research objects that the perceived value for users affects continued use. This also proves that users of mobile payment platforms are not just adopters of technology but also the consumers themselves. The findings demonstrate the effect of perceived value on continuous intention to use, which is a finding consistent with past studies using VAM to study use intent.

4) The moderating effects of personal innovativeness on the beneficial and sacrificial factors of mobile payment platform and perceived value:

Users in South Korea show that Personal innovativeness plays moderating role between mobility and perceived value; however, the personal innovativeness plays no moderating role between social influence and perceived value; The personal innovativeness plays no moderating role between or economic value and perceived value.While personal innovativeness plays no moderating role between the sacrificial factors of mobile payment platforms and perceived value. These show that mobility is the biggest advantage that distinguishes mobile payment platforms from other payment methods. Personally innovative users can take advantage of new payment methods and ignore other disadvantages.But even if the user is highly innovative, it does not affect the effect of social influence on perceived value. If the switching cost is high, the personal innovative users will not change their perceived value. When facing the sacrificial factors of mobile payment platform, users with strong innovation will not affect their perceived value.

Users in China show that personal innovativeness only plays a moderating

role between social influence and perceived value ; But personal innovativeness plays no moderating role between economic value and perceived value; Personal innovativeness plays no moderating role between mobility and perceived value. Personal innovativeness plays no moderating role between the sacrificial factors and perceived value ;

These show that the higher the user's personal innovativeness, the greater the value of social influence on perception. In China, users with high personal innovativeness are more likely to influence and introduce new products and services to those around them. At the same time, users with high personal innovativeness are also prone to accept recommendations from others, and recommendations from people around them make users with high personal innovation feel better about products or services. However, users with high personal innovation will not affect their perceived value due to high economic value and mobility. In China, TenPay's mobility is already a well-known advantage, and TenPay users have gained economic value. This has become a very common phenomenon.As for the influence of sacrificial factors on perceived value, even users with high personal innovation will not change. Users see no need to take risks due to perceived risk, complexity, and Switching cost.

5) The moderating effects of impulse buying tendency on the beneficial and sacrificial factors of mobile payment platform and perceived value:

Users in South Korea show that impulse buying tendency plays a moderating role between switching cost and perceived value; But the impulse buying tendency plays no moderating role between the beneficial factors and perceived

value; The impulse buying tendency plays no moderating role between the perceived risk and perceived value; The impulse buying tendency plays no moderating role between complexity and perceived value;

These shows that the higher the impulse buying tendency of users, the greater the impact of Switching cost on perceived value. In South Korea, if users want to purchase quickly, they tend to use the existing familiar payment method and are unwilling to choose a new payment method at the time of payment. At the same time, if users buy goods or services with high value, the original payment method usually includes coupons or payment points. Therefore, when users make impulse purchases, they will not easily change the payment method .Even if users have a high impulse buying tendency, the social influence, mobility and economic value of mobile payment platforms will not affect their perceived value. Similarly, even if users have a high impulse buying tendency, they will still care about the complexity and perceived risk of mobile payment platforms.

Users in China show that the impulse buying tendency plays no moderating role between the beneficial factors and perceived value; Meanwhile the impulse buying tendency plays no moderating role between the sacrificial factors and perceived value.These shows that use of mobile payment platforms have become a habit. Whether a user has a tendency for impulse purchasing, with daily payment and use, it will not affect the user's evaluation of the perceived value of the beneficial and sacrificial factors of mobile payment platform.

6) The moderating effects of the data analysis capability on the beneficial and sacrificial factors of mobile payment platform and perceived value:

Users in South Korea show that data analysis capability plays a moderating role between economic value and perceived value; But the impulse buying tendency plays no moderating role between the social influence and perceived value; The impulse buying tendency plays no moderating role between the mobility and perceived value; Meanwhile the impulse buying tendency plays no moderating role between the sacrificial factors and perceived value. These shows that users believe that the higher the platform's big data analysis capability is, the more economic benefits they will feel.If the platform's big data analysis ability is high, it can identify different characteristics of different users, and the system will identify different users to give different economic benefits. For example, for new users of the platform, the platform will usually give high value economic benefits, such as high discounts, or high value vouchers, or even free orders.Despite the high capability of big data analysis, other platform factors have little impact on perceived value. This indicates that the platform focuses on analyzing users where economic benefits are returned, without too much analysis and attention in terms of social influence, mobility, perceived risk, complexity and switching cost, and without obvious perceived value for customers.

Users in China show that data analysis capability plays a moderating role between economic value and perceived value; But the impulse buying tendency plays no moderating role between the social influence and perceived value; The impulse buying tendency plays no moderating role between the mobility and perceived value; Meanwhile the impulse buying tendency plays no moderating role between the sacrificial factors and perceived value. This result is the s

ame that was reported for South Korean users. After payment, for China's mob ile payment platforms, the users receive different degrees of money back. The amount of money returned is random but based on big data analysis according to user habits and payment frequency, and it can span from a small portion of the payment amount returned to the payment being fully returned. Therefore, the higher the data analysis capability of the platform, the higher the users ca n obtain perceived value in terms of economic value.For the same reason, othe r factors in the platform do not have much perceived value for users.

The moderating effects of complementary in alliance on the beneficial and sacrificial factors of mobile payment platform and perceived value:

Users in South Korea show the complementary in alliance plays no mod erating role between the beneficial factors and perceived value; The compleme ntary in alliance plays no moderating role between the sacrificial factors and p erceived value. These shows that South Korea's mobile payment platforms have not yet realized true complementary in alliance. For example, in terms of ban king cooperation, Kakao Pay only works with its own banking service, and ot her functions like shopping, and ordering are mostly developed in-house with l ittle cooperation elsewhere. Therefore, the complementary of alliance of the mo bile payment platform has little effect with respect to the users. So the high o r low level of complementary in alliance that users think of platforms has no effect on their perceived value of characteristics of mobile payment platforms.

Users in China show that the complementary in alliance plays moderating role between the economic value and perceived value; But the complementary in alliance plays no moderating role between the social influence and perceiv

ed value; The complementary in alliance plays no moderating role between the mobility and perceived value;The complementary in alliance plays no moderating role between the sacrificial factors and perceived value. These show that the more complementary in alliance the platform has, the higher the economic value users think they can receive. For example, in terms of using the platform, TenPay has developed the Mini App interface which allows users to connect to almost any mobile application needed in life within their own mobile applications. These connected applications can deal with shopping, ordering takeaway food, taxi booking, hospital registration, delivery insurance, financial management, government affairs and nearly anything else. So users feel there is a lot of convenient that brings real economic value. Therefore, the degree of TenPay's complementary in alliance in China is remarkably high, which means the social influence and mobility of users are not affected by it. Due to high complementary in alliance, the sacrificial factors of the mobile payment platform will not affect the perceived value of users to the use the mobile payment platform.

5.2 Theoretical Contributions and Implications

Mobile payment platforms have mostly been studied from a technical perspective to verify their value to users so far. By adopting VAM, this study not only considers those same value aspects, but also the benefits and sacrifices of individuals that use a mobile payment platform. Through comparative analysis, we found the biggest difference between Chinese users and South Korean users as moderate variables. The results are presented by verifying the relationship between individual variables, and these findings provide several theoretical

implications.

1)VAM has been proven to be more suitable for research on current mobi le payment platforms, this study add some important aspects of mobile paymen t platform, reflect mobile payment platform Characteristics more comprehensivel y. This paper adds social influence and mobility in terms of beneficial factors of mobile payment platforms, and adds complexity in terms of sacrificial factor s of mobile payment platforms.In contemporary times, social influence is very important, his highly correlated relationship is due to the online medium chose n by the user, since communication between people take place within the netw ork itself and it is precisely there that users formulate their acceptance of the payment tool. At the same time, mobility is also a very obvious advantage no w, as the mobile payment facilities are more and more perfect people can use it anywhere where merchants support mobile payment.Complexity should be w hat should be considered in terms of sacrificial factors, and other cashless pay ment methods have developed to maturity, such as credit card payments.If mob ile payment platforms are too complex, users' perceived value will become poo r, thus affecting their continuous intention to use.This paper further improves t he characteristics of the mobile payment platform. By clearly dividing the bene ficial and sacrificial factors of mobile payment platform technology, along with their characteristics and effects, users can clearly judge the intention of contin uous use. The results show that reflecting mobile payment platform Characteris tics more comprehensively is very necessary, which clearly demonstrates the ef fect of various features on perceived value and intent to continuous use and pr ovides the evidence for subsequent studies. Future research on mobile payment

platforms can also consider applying VAM to other variables which include b ut are not limited to usefulness, perceived enjoyment, compatibility, platform tr ust, brand effect, technical defects, and reputation risk.

This study employs a comparative research approach to try to fill in the gaps currently present in the field. In this study, two of the most representativ e mobile payment platforms in China and South Korea were selected . China has the scale of existing mobile payments. South Korea has the head start wit h earlier development of mobile payments. Comparing these two platforms has great research value. Previous studies contributing to mobile payment platform s have raised limitations of their own studies, including sampling only from sp ecific regions or countries, and are very limited. A general future research pro spect is to study samples from other countries and conduct comparative studies. This method can be applied to other non-Asian regions such as the United St ates and European countries, the United States and South Korea, Australia and African countries and so on.

This study newly add the moderate variables,in term of users and platform s Characteristics at VAM. Based on the biggest differences between users and platforms in China and South Korea, four variables were selected for their m oderating effects. On the user side, the moderate variables are personal innovat iveness and impulse buying tendency. Regarding the platform, the moderate var iables are complementary of alliance and data analysis capability. The results s how that these moderate variables in a comparative study can maximize the co mparison analysis of the samples to obtain satisfactory results. This can provid e a reference for other comparative studies, selecting some obvious differences

such as gender, cultural differences,or pay more attention to different national policies.as moderate variables.

5.3 Practical Contributions

5.3.1 Management advice for the platform providers

1. In terms of marketing and promotion,Mobile payment platform providers should provide more economic value to their users. Because users only tend to pay attention to expected benefits of the mobile payment platform, and not its potential disadvantages, providers of the mobile payment platform need to determine how to offer greater benefits to users. In the past,most users of the mobile payment platform are likely to be innovative early adapters who care very much about economic value. Therefore, it is important to create greater benefits for them of using the mobile payment platform, so the mobile payment platform providers should try to make promotion events which can provide an economic value to users. Also, they need to concern their promotion own events, for example, deliver a discount coupon to a large amount payment user or give more deserves to users with high usage.

2.In terms of mobile payment platform technology,providers should improve the technological content of the system, and improve the R&D capabilities of enterprises, especially the data analysis capabilities.For users to continue to use the mobile payment platform, the providersc should be designed and developed to deliver value to them. As telecommunications technologies advance, the mobile payment platform providers can enhance the system characteristics without additional costs by taking advantage of the declining cost of technologies, thus the different characteristics of each user can be more clearly understood.

Mobile payment platform analyzes the different characteristics of users through big data, provider will be able to define strategies adapted to influence patter ns, thus developing differentiated value propositions (targeted marketing) which adequately satisfy users and improve their perceived value.

3.In terms of cooperation with other field,providers should improve the su pporting facilities of merchants, strengthen cooperation with mobile companies, and improve the mobility of mobile payment platforms.Mobility is the biggest feature that distinguishes it from other cashless payment methods and concerns to all users.The mobility stands out as one of the most important advantages of mobile payments because modern users have less free time due to the dyna mic nature of their lifestyles, Therefore, mobile operators and payment service providers should ensure the appropriate technological infrastructure, providing u niversally available (geographically and temporally), instant and reliable connect ion and services which provide users with a true anytime, anywhere connectivi ty experience.

4) KakaoPay should strengthen the publicity of the mobile payment platfor m, enhance the social influence, accelerate the optimization of the platform sys tem, and reduce the complexity of user operation. KakaoPay should Enhance t he release of media advertising, and then each channel to enhance their own p opularity, and launch characteristic and interesting marketing strategies, causing the effect of word of mouth among Korean users.You can also make advanta ge of the functional advantages of social software to improve the interesting g ames of mobile payment such as sending gifts and transferring money between friends.Finally, they recommend each other among the media, friends and coll

eagues, making users deeply influenced by the surrounding media, friends and colleagues, enhance users perceived value, and enhance users' continuous intenti on to use. Mobile payment platform providers should improve their influence i n business operation,which can enhance word-of-mouth marketing that strengthe ns publicity, expands social influence, and improves brand influence. Simplify t he user registration process and reduce the operational process while maintainin g safe use. This can be done in order to improve user feelings, enhance intent ion of use.

2)Increase KakaoPay's alliance capabilities and compatibility with other are as.In terms of cooperation with other fields, mobile payment platform providers should strengthen cooperation with other entities like 3rd-party companies, ban ks and the governments. That is in addition to developing and enhancing the c ompatibility of their own platforms. TenPay has strengthened cooperation in m any fields such as clothing, food, housing, and transportation will greatly impr ove the utilization of payment platforms and improve customer loyalty. Strengt hening cooperation with the banks, and all bank cards can support Kakao Pay. Strengthening cooperation with government can facilitate platform use by prov iding system interfaces and connecting to government network processing platfo rms. With these advantages, the platform can evolve from only being a mobile payment platform, to also being a payment-related business, which can becom e a necessary product in a users life. Also, users can increase dependency of t he platform by increasing the platform use through other user needs.

5) TenPay takes steps to ensure payment security to reassure users of their use.Providers must invest in and develop the resources necessary to ensure and

provide the safest operating environment for mobile transactions. In that sense, both financial entities and developers of mobile payment platform must use security as a priority in the mobile payment environment while letting users about the security methods employed.Uncertainty in mobile payment platform security may seriously hinder the adoption of mobile payment platforms, and users should view mobile payments as trustworthy, just as mobile payment providers should be considered reliable, and TenPay's marketing campaign should highlight the security measures and safeguards used to prevent information and financial losses, while encouraging users to use TenPay mobile payments as a security alternative to daily payments.To provide a high level of security for transactions, TenPay providers should adopt modern technical measures such as advanced encryption methods, as well as supporting the latest authentication methods.Avoid the risk of account theft.In addition, for user confidence, users can also clearly understand the compensation scheme after the payment loss.users will be more likely to view mobile transactions as something of a less uncertain and risky activity, thereby increasing the good perceived value of mobile payment platforms.

5.3.2 Management advice for the Government

1)The government should increase the investment in the R&D of mobile payment platform enterprises, and encourage their research, development and innovation.Mobile payment is an important part of the development of Fintech, and the high technology content is also the core competitiveness of the mobile development platform.The government should encourage providers to constantly improve their core competitiveness, increase their R&D investment in platform

providers, and give preferential policies to platform providers. Formulate policies to encourage the development of mobile payment platforms. By increasing government R&D investment into enterprises this will encourage the further development of new and existing enterprises to help continue innovation, update their technological infrastructure and existing services, meet user needs and expectations, and promote the development of mobile payment platforms in a better direction.

2) Governments should improve users' access to technology and education, as well as their personal innovativeness. Mobile payment platform is a new field of science and technology. The more users in the field of technology, the more people can accept and use mobile payment platform.

3)The South Korean government should help platform providers strengthen cooperation with other sectors. The government should push the platform providers consider promotion cooperation between mobile payment platforms that complement their platform offerings. For example, as to provide a good guarantee for the development of mobile payment platforms, government consultation can be viewed and handled through mobile payment platforms to promote cooperation between mobile payment platforms, other banks, and 3rd-party large companies.

4)The Chinese government should establish a sound supervision mechanism for the mobile payment platform, improve the current relevant laws, and ensure transaction security. Payment security is an important but conscerning factor for users. The uncertainty with security for mobile payments may be a serious obstacle for the adoption of mobile payments. On the security side, mobile

payment platform providers must invest into and develop the resources necessary to ensure and provide the most secure environment for mobile transactions. The government implement laws and regulations supporting e-commerce to ensure the security of the payment market. These ideas can help users determine whether they should consider a mobile payments provider as trustworthy and that the user's mobile payments are have the backing of legal oversight.

5.4 Limitations and Future Research

This paper studies the continuous intention to use of the mobile payment platform through empirical analysis and provides some contributions.However, there are still some limitations.

1) This research conducts comparative analysis and obtained research results.However, the national samples analyzed are only from China and South Korea, both belong to Asian countries, and the payment culture and payment environment are similar.There is no comparison of countries in the rest of the world, and the rest of the world have different payment cultures and payment environments, which deserve comparative research.In the future, comparative studies of other local samples in the United States and Europe will be conducted, and other appropriate moderate variables will be selected.

2) This study focuses on user and platform characteristics, we can also choose future research directions and pay more attention to different national policies.Study the development of mobile payment platforms from the level of state power. Including the impact of national investment in R&D on the performance of mobile payment platforms.

3) This research selects KakaoPay and TenPay for comparison, and there are other mobile payment platforms worth studying, such as Apple Pay et al. And different mobile payment platforms, there will have different platform characteristics.Future research directions can select different mobile payment platforms for research, or select different platform characteristics, such as ease of use, compatibility, reputation risk, brand effect and so on.

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Appendix

MS / MR:

Hello!I am an international student from China who is currently preparing for my doctoral thesis. This survey is for a dissertation on “Antecedents of the Continuous Intention to Use of Mobile Payment Platforms: Evidence From TenPay and KakaoPay”.

Your contribution will be a valuable resource. We promise that this questionnaire will be treated anonymously and will never be used for anything other than academic research.

Thank you.

1. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Social Influence	1.People who are important to me think that I should use mobile payments	①	②	③	④	⑤

	2.People who influence my behavior think that I should use mobile payments	①	②	③	④	⑤
	3.People whose opinions that I value prefer that I use mobile payments	①	②	③	④	⑤
Economic Value	My current mobile payment application offers a good value for money.	①	②	③	④	⑤
	My current mobile payment application is a good service for the price.	①	②	③	④	⑤
	My current mobile payment application is economical.	①	②	③	④	⑤
Mobility	I believe the mobile payment service provided on the platform is independent of time	①	②	③	④	⑤
	I believe the mobile payment service provided on the platform is independent of place	①	②	③	④	⑤
	I can use the mobile payment service provided on the platform anytime while traveling	①	②	③	④	⑤

2. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Switching Cost	I have already put a lot of time and effort into mastering the current transaction method	①	②	③	④	⑤
	It would take a lot of time and effort to switch to the new way of making payments with the mobile payment	①	②	③	④	⑤
	Switching to a new payment method with the MEPS will result in unexpected hassle for me	①	②	③	④	⑤
Perceived Risk	That the transaction information will be hacked	①	②	③	④	⑤
	Hackers or viruses caused by security lapses of operation system or online	①	②	③	④	⑤
	That my account information will be illegally used and that payment platform cannot work properly	①	②	③	④	⑤
	That my personal information can be stolen in transaction because of carelessness or illegal activities of others including banks,third parties, etc.	①	②	③	④	⑤
	That my personal information can be stolen in transaction because of carelessness or illegal activities of others including banks,third parties, etc.	①	②	③	④	⑤
	That hackers can steal my personal information from service providers' databases and use it illegally	①	②	③	④	⑤
	That if I apply for an online payment account, it's difficult to communicate with the bank or third party platform when I need help .	①	②	③	④	⑤
	That if I use an online payment account, it's difficult to communicate with the bank or third party platform when I need help	①	②	③	④	⑤
Complexity	Mobile payments requires a lot of mental effort	①	②	③	④	⑤
	Mobile payments requires technical skills	①	②	③	④	⑤
	Mobile payments can be frustrating	①	②	③	④	⑤

3. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Personal Innovativeness	If I find out about new mobile payment technology, I seek ways to experience it	①	②	③	④	⑤
	I am usually one of the first among my colleagues/peers to explore new mobile payment technology	①	②	③	④	⑤
	In general, I am reluctant to try new mobile payment technologies	①	②	③	④	⑤

4. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Impulse Buying T	When I go shopping, I often buy things spontaneously	①	②	③	④	⑤
	As I browse on shopping websites, I often buy things online without thinking.	①	②	③	④	⑤

endency	"I see it, I buy it" describes the way I buy things online	①	②	③	④	⑤
	Browsing shopping websites, sometimes I am a bit reckless about what I buy.	①	②	③	④	⑤

5. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Data Analytic Capabilities	Compared to rivals within industry,TenPay/Kakao pay's	①	②	③	④	⑤
	All remote,branch and mobile offices are connected to the central office for analysis.	①	②	③	④	⑤
	TenPay/Kakao pay's organization utilizes open systems network mechanisns to boost analytic connectivity.	①	②	③	④	⑤
	Software applications can be easily transported across multiple analysis platforms.	①	②	③	④	⑤
	Our user interfaces provide transparent access to all platforms an applications.	①	②	③	④	⑤
	Analytical-driven information is shared seamlessly across our organization,regardless of the location	①	②	③	④	⑤
	Reusable software models are widely used in new analysis model development.	①	②	③	④	⑤
	End-users utilize object-oriented tools to create their own analysis applications.	①	②	③	④	⑤
	Object-oriented technologies are utilized to minimize the development time for new analysis applications.	①	②	③	④	⑤
	That if I apply for an online payment account, it's difficult to communicate with the bank or third party platform when I need help .	①	②	③	④	⑤

6. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Complementary in Alliance	A wide range of applications are available on TenPay/KakaoPay.	①	②	③	④	⑤
	A wide range of supporting tools on TenPay/KakaoPay	①	②	③	④	⑤
	A wide range of news and information I can subscribe to TenPay /KakaoPay	①	②	③	④	⑤
	A wide range of games are available on TenPay/Kakao Pay	①	②	③	④	⑤

7. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Perceived Value	Compared to the fee I need to pay, the use of mobile payments applications offer value for money	①	②	③	④	⑤
	Compared to the effort I need to put in, the use of mobile payments applications is beneficial to me	①	②	③	④	⑤

	Compared to the time I need to spend, the use of mobile payments applications is worthwhile to me	①	②	③	④	⑤
	Overall, the use of mobile payments applications delivers me good value	①	②	③	④	⑤

8. What do you think about the following items. Please check the box (√) that best matches your usual thoughts and actions.

Factor	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Continuous Intention to Use	I intend to continue using the mobile payment platform rather than discontinue its use	①	②	③	④	⑤
	My intentions are to continue using the mobile payment platform than use any alternative means	①	②	③	④	⑤
	My intentions are to continue using the mobile payment platform than use any alternative means	①	②	③	④	⑤

9. The following questions are about your general characteristics. Please check (√) the applicable items.

(1) Gender:

① Male ② Female

(2) Age:

① In their 10s ② In his 20s ③ In their 30s ④ In their 40s ⑤ Over 50s

(3) Education degree

① High School and below ② Two-year university (studying or graduate)

③ Four-year university (studying or graduate) ④ Master's degree (studying or graduate)

⑤ Doctorate degree (studying or graduate)

(4). Average monthly household income:

① Less than 1 million won

② 1 million won-2 million won

③ 2 million won-3 million won

④ 3 million won - 4 million won

⑤ Over 4 million won