

**THE STUDY OF TECHNOLOGY ACCEPTANCE MODEL (TAM)
TOWARDS BEHAVIORAL INTENTION
TO USE PROMPTPAY
OF CUSTOMERS IN BANGKOK**



THANUTTHA VERADITTHAKIT

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE GRADUATE SCHOOL
STAMFORD INTERNATIONAL UNIVERSITY
MASTER OF BUSINESS ADMINISTRATION
ACADEMIC YEAR 2016**

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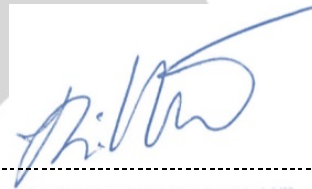
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Title: Technology Acceptance Model (TAM) Towards Behavioral
Intention to Use PromptPay of Customers in Bangkok

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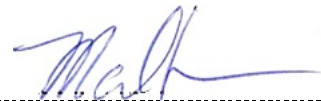
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ABSTRACT

Objectives: The objectives of this study were (1) to define the external variables in terms of system characteristics, social characteristics, user personal characteristics affecting perceived usefulness and perceived ease of use towards behavioral intention to use PromptPay of customers in Bangkok, (2) to study the technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok and (3) to measure behavioral intention to use PromptPay of customers in Bangkok.

Research Methodology: This study developed a conceptual model based on the final version of TAM, using a quantitative method through an online questionnaire from May 2017 to June 2017. The responses from 621 samples were empirically analyzed using structural equation modelling (SEM), while the data analysis was performed using LISREL 8.72 and complex correlations were observed.

Major Findings: The variables in the model were found statistically significant with causal factors affecting the behavioral intention to use PromptPay. The factors were ranked as follows: (1) system characteristics had a positive effect as strongly indicated by compatibility; (2) perceived usefulness had a positive effect as indicated that PromptPay was advantageous; and (3) perceived ease of use had a positive effect as indicated that PromptPay made it easy to complete banking transactions, while social characteristics had a negative effect as indicated by subjective norms. The causal factors affecting the perceived usefulness in a positive direction were (1) system characteristics and (2) perceived ease of use, respectively, while user personal characteristics and social characteristics had no effect on the perceived usefulness. The causal factors affecting the perceived ease of use in a positive direction were (1) system characteristics as indicated by compatibility and (2) user personal characteristics as indicated by

computer attitude, while social characteristics had a negative effect as indicated by subjective norms. Furthermore, it was found that all variables could predict the behavioral intention to use PromptPay, perceived usefulness and perceived ease of use at 69%, 85% and 79%, respectively. The factors influencing the behavioral intention to use PromptPay were ranked as follows: (1) system characteristics with TE = 0.781, DE = 0.59 and IE = 0.191, (2) social characteristics with TE = 0.242, DE = 0.17 and IE = 0.072, (3) PU with TE = 0.23, DE = 0.23 and non-indirect effects, and (4) PEOU with TE = 0.218, DE = 0.17 and IE = 0.048, respectively. The best indicator of the indirect effects of BIU PromptPay was PEOU. The survey results highlighted one outstanding hypothesis which stated that social characteristics had direct effects on behavioral intention to use PromptPay. The implications of the findings were discussed and future research directions were recommended.

Keywords: Technology Acceptance Model, PromptPay, Behavioral Intention

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CHAPTER 1

INTRODUCTION

This chapter presents the problem statement, objectives, significance, scope and limitations of the study, as well as conceptual framework and research hypotheses on the technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok.

1.1 Statement of the Problem

In the early years of the 21st century, global banking players witnessed the fast-changing global banking transactions and a shift in the cash management industry towards the global non-cash transaction environment. According to Capgemini and BNP Paribas (2016), 2016 World Payments Report showed that developing markets drove the global non-cash transaction volume growth at 8.9% to reach 387.3 billion in 2014. The highest growth rate of 31.5% was recorded in Emerging Asia. The top ten markets were the U.S., Eurozone, Brazil, China, the U.K., South Korea, Japan, Canada, Russia and Australia, respectively. The report also showed that the higher global growth was continuously driven by high growth in Emerging Asia, Central Europe, Middle East and Africa and Mature Asia-Pacific. The global payment services mix in 2014 consisted of 65% cards, 12% direct debits, 17% credit transfers and 6% checks. China and India would have significant growth in Emerging Asia, as regulatory intervention, increased card penetration, and increased mobile payments contributed to non-cash transactions.

According to the Bank of Thailand (2015), in the Payment Systems Report 2014, the chairman of the Payment Systems Committee stated, “Last year, Thailand witnessed a major shift of the digital payment systems. Both bank and non-bank service providers introduced new payment innovations to the market through smartphone and tablet applications as well as other advanced technologies; for example, mutual funds trading with the call center via VDO calling, funds transfer using mobile phone numbers in place of account numbers, contactless technology, and two-dimensional barcodes called QR (Quick Response) codes.

At the same time, users also stepped up toward the adoption of electronic payment services and electronic commerce.”

In the Payment Systems Report 2014, the Bank of Thailand (2015) reported the numbers of transactions (per person per year) in different countries. The use of e-Payment was highlighted as, in 2013, there were 684 transactions in Singapore, 451 transactions in Finland, 331 transactions in South Korea, 296 transactions in England, 65 transactions in Malaysia and 31 transactions in Thailand. Additionally, according to Thailand Internet User Profile 2014 by the Electronic Transactions Development Agency (Public Organization) (2014), the number of Thai Internet users increased from 19.79 million to 38.02 million, while that of mobile phone subscribers increased from 71.62 million to 83.05 million from 2010 to 2015, respectively.

Based on the Bank of Thailand Payment Systems Annual Reports from 2002 to 2014, researchers recognized the significant adoption of new digital payment systems. The new payment innovations were introduced to markets along with advanced wireless technology and mobile devices. In particular, smartphones and tablets rapidly became popular among Thai customers who commonly used the devices for mobile banking services, payments and shopping. Researchers found that Thai economy and its citizen's quality of life depended substantially on the security and availability of the national payment system; therefore, the main focus of this study was on the opportunities and challenges in banking transactions towards this digital transformation project promoted by the Thai government called “PromptPay”.

In recent years, all levels of the Thai government have made significant collaboration with public and private sectors to develop the national electronic payment system since 2012 when launching a government-sponsored e-payment system conforming to the Payment Systems Roadmap 2012- 2016 (Bank of Thailand, 2016), which clearly stated that the Roadmap would be used as a framework for a development of the Thailand's payment systems during 2012-2016 to establish effective and safe payment systems that comply with international standards. Both public and private agencies concerned worked collaboratively to ensure that they devise business plans according to the direction of the Roadmap.

On 15 June 2016, the Bank of Thailand (BOT) officially introduced “PromptPay” to public, announcing that “ PromptPay, a new service to transfer funds, developed by commercial banks to support the Any ID National e-Payment project under the government’s master plan to develop the national e-payment infrastructure. PromptPay is a service that will allow individuals and businesses to transfer funds more quickly and easily by using mobile phone numbers or citizen identity card numbers instead of bank account numbers to receive funds. In the first phase, it will enable individuals to make person-to-person payments (P2P), while providing such services to businesses subsequently. In the near future, government agencies can transfer social benefits, financial aids and tax refunds to citizens via PromptPay services.”

As for further development, the Thai Bankers Association collaborated with the Bank of Thailand (BOT) to promote “PromptPay”. Pinijparakarn (2016) reported that people could register for PromptPay at all Thai state-run and commercial banks starting July 2016. In addition, the association and its members jointly invested in laying the payment and technological infrastructure for PromptPay, along with the commitment to maintain low transaction fees until the end of 2019 to attract customers to migrate to the new national e-Payment system. This was in line with the objective of the Payment Systems Roadmap 2012-2016 which stated that Thailand would transform into a cashless society.

Even though the Thai Bankers’ Association and the Bank of Thailand as well as all Thai state-run and commercial banks have been cooperating with all businesses and private sectors to convince people to register for a PromptPay account, customers still hesitate to do so and prolong their decision to register for it. Therefore, the researcher used the technology acceptance model (TAM) to examine behavioral intention to use PromptPay of customers in Bangkok. The researcher believes that the findings of this study can be used as a guideline for further collaboration between the Thai government, banks and private sectors to enlarge their value proposition, to develop PromptPay services to meet the customers’ needs and expectations as well as develop promotions to improve customers’ behavioral intention to use PromptPay along with the growing social commerce market in Thailand.

1.2 Objectives

In this research, the researcher attempted to find out whether the customers' behavioral intention to use PromptPay was affected by their perceived usefulness, perceived ease of use, system characteristics, social characteristics and user personal characteristics in order to gain a greater understanding of the target customers in Bangkok.

The objectives of this research were:

1. To define the external variables in terms of system characteristics, social characteristics, user personal characteristics affecting perceived usefulness, and perceived ease of use towards behavioral intention to use PromptPay of customers in Bangkok.
2. To study the technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok.
3. To measure behavioral intention to use PromptPay of customers in Bangkok.

1.3 Significance of the Study

The development of non-cash transactions is essential for the countries that are making transition to becoming a cashless society. The use of PromptPay is one of the key drivers to accelerate the fast-changing transaction banking and cash management industry towards the non-cash transaction environment. To promote PromptPay, the delivery of advice to new customers and targeted interventions can increase customers' behavioral intention to use PromptPay.

Since the low PromptPay fees will be maintained for limited time period or only until the end of 2019, theoretical approaches will help better the understanding of the technology acceptance model towards behavioral intention to use PromptPay as follows:

- 1) The better understanding of the influencing factors will result in an increase in the behavioral intention to use PromptPay of customers in Bangkok.
- 2) Businesses and private sectors can apply the research findings in designing their marketing strategies for new market segments to attract PromptPay users.
- 3) The government and banks can use the findings to develop PromptPay services to meet the customer expectations.

- 4) Government offices can draw on the findings to develop promotions for PromptPay and social commerce in Thailand.

1.4 Scope and the limitations of the study

1.4.1 Scope of the study

For the study of technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok, the researcher developed and designed the research according to the new payment system development and process studies. Results from previous research were shown in Chapter 2 (Literature Review). The conceptual framework and hypotheses for this study were adapted from the final version of technology acceptance model (TAM). As defined in Chapter 3 (Research Methodology), this study used quantitative method for survey research, the instrument was a 5 rating scales online questionnaire. distributed to 621 Thai customers, who are over 15 years of age and live in Bangkok. The reliability test of small samples was conducted prior to the actual survey of large samples. The collected data were analyzed using statistical program LISREL 8.72 and examining correlations in a complex manner. As defined in Chapter 4 (Research Findings), the researcher used structural equation modeling (SEM) for data analysis to study the causalities among all parameters constructed in each model. The various model-fit measures were used to assess the model's overall goodness-of-fit; Chi-square test value (χ^2) to degrees-of-freedom (df); goodness-of-fit index (GFI); adjusted goodness-of-fit index (AGFI); comparative fit index (CFI); standardized root mean square residual (SRMR); root mean square error of approximation (RMSEA); Critical N (CN). Then the proposed model with minor modifications fit better with the data. The research findings were analyzed in Chapter 4, and the summary, conclusion and recommendations were finally discussed in Chapter 5.

1.4.2 Limitations of the study

This study investigated a limited number of Bangkok population; therefore, these following important issues should be verified carefully.

- The questionnaire was developed based on previous research as well as data related to this study which had been available until May 2017 prior to actual survey.

- Since the survey data were collected through an online questionnaire, the respondents' answers were based on their basic understanding and previous experience.
- As PromptPay, a new payment system, was recently introduced to public, the respondents could be unfamiliar with it. They might have different answers after they gain more knowledge and experience with PromptPay in the future.

The data were randomly collected online; therefore, the results represented a wide range of respondents with different backgrounds; thus, they might not represent the population's opinions.

1.5 Conceptual Framework

The conceptual framework and hypotheses for this study were adapted from the final version of technology acceptance model (TAM) as an appropriate theoretical tool to understand customers' behavioral intention to use PromptPay in Bangkok.

Therefore, the researcher proposed a conceptual framework model of customer's technology acceptance and behavioral intention, mainly based on the theory of technology acceptance model (TAM) as shown in Figure 1.1.

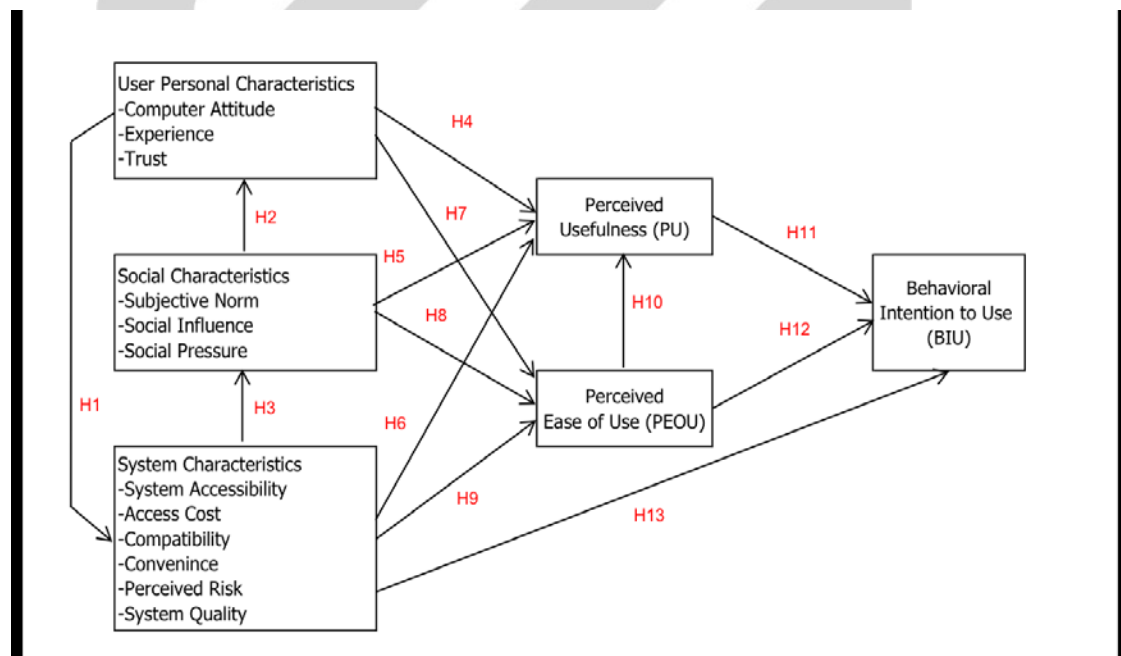


Figure 1.1 Conceptual Framework Model

Source: Adapted from the final version of TAM (Venkatesh & Davis, 1996, p.453)

1.6 Research Hypotheses

In accordance with the previously stated objectives and related literature, the present study tested the following hypotheses.

H1: User personal characteristics, including computer attitude, experience and trust, affect the system characteristics in terms of system accessibility, access cost, compatibility, convenience, perceived risk and system quality.

H2: Social characteristics, including subjective norms, social influence and social pressure, affect the user personal characteristics in terms of computer attitude, experience and trust.

H3: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the social characteristics in terms of subjective norms, social influence and social pressure.

H4: User personal characteristics, including computer attitude, experience and trust, affect the perceived usefulness of PromptPay.

H5: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived usefulness of PromptPay.

H6: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality affect the perceived usefulness of PromptPay.

H7: User personal characteristics, including computer attitude, experience and trust, affect the perceived ease of use of PromptPay.

H8: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived ease of use of PromptPay.

H9: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the perceived ease of use of PromptPay.

H10: Perceived ease of use affects the perceived usefulness of PromptPay.

H11: Perceived usefulness affects the behavioral intention to use PromptPay.

H12: Perceived ease of use affects the behavioral intention to use PromptPay.

H13: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the behavioral intention to use PromptPay.

1.7 Definition of Terms

Table 1.1: Definition of Terms

Term	Definition
e-Payment systems	or electronic payment systems refers to the processing of payment instructions carried out by the banking system electronically (Papameletiou,1999:12).
e-commerce	or electronic commerce refers to trade and business processes that take place electronically (typically over the Internet), involving several components, such as a means of doing a deal, the exchange of information, the on-line or off-line delivery of the product (or service) purchased and the payment for that product. The payment can be made using “electronic money” or an “electronic access” (both defined below) or by some other methods for exchanging value in a broader sense (Papameletiou,1999: 12).
PromptPay	or initial name “Any ID” refers to a service that allows individuals and businesses to transfer funds more quickly and easily by using mobile phone numbers or citizen ID numbers instead of bank account numbers to receive funds (BOT, 2016).
System characteristics	refers to the participating banks’ system accessibility, access cost, compatibility, convenience, information quality, perceived risk and system quality, influencing customer’s behaviors that affect their interactions with payment transactions.

Table 1.1: Definition of Terms (Cont.-)

Term	Definition
Social characteristics	refer to the subjective norms, social influence and social pressure influencing customer's behaviors that affect their interactions with payment transactions.
User personal characteristics	refer to customer's computer attitude, experience and trust, influencing customer's behaviors that affect their interactions with payment transactions.
Perceived usefulness	refers to the degree to which an individual believes that using PromptPay would enhance his or her productivity and performance in conducting payment transactions.
Perceived ease of use	refers to the degree to which an individual believes that using PromptPay would be free of physical and mental effort.
Behavioral intention to use	refers to the customer's likelihood to engage in using PromptPay.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a review of previous research related to the present study. It explores the background of payment systems development, the previous studies of e-payment systems witnessed by central banks of the major European countries, the United States and Thailand, and the background of PromptPay service. The review of literature enabled the researcher to determine the most appropriate theory for the study.

From all previous research, the researcher observed the trends of new payment innovations adopted globally. Factors influencing customers' behavioral intention depended on conditions in each country. Currently there are many alternative payment services with new technology systems offered to Thai customers, but the factors influencing Thai customers' behavioral intention to use payment services are various and unpredictable. Therefore, the theory of technology acceptance model (TAM), the most widely researched and applied to examine behavioral intention to use the different type of information technology systems, was studied as well as the various factors that influence the determining factors of new technology adopted from previous research as defined in chapter 2.4. According to Davis (1989), perceived usefulness (PU) is defined as "the degree to which an individual believes that using a particular system would enhance his or her job performance," while perceived ease of use (PEOU) is defined as "the degree to which an individual believes that using a particularly system would be free of physical and mental effort". In the work of Davis, Bagozzi and Warshaw (1989), the main finding was that both PU and PEOU were found to have a direct influence on behavioral intention, thus eliminating the need for the attitude construct from the first TAM model. Therefore, the researcher decided to apply the final TAM model for this study.

The conceptual framework and hypotheses as well as the definitions of key elements based on the final TAM model were developed in chapter 2.5. The researcher studied the external variables proposed in previous research and proposed external variables that were divided into three main categories of system characteristics, social characteristics and user personal characteristics. The system characteristics, social characteristics and users' personal

characteristics were determined as significant external variables affecting the perceived usefulness (PU) and perceived ease of use (PEOU), while PU and PEOU and system characteristics were determined to have a direct effect on the behavioral intention to use (BIU) for this study. Furthermore, the research hypotheses were developed in relation to system characteristics, social characteristics and user personal characteristics, PU, PEOU and BIU in accordance with the theory of the TAM. The thirteen hypotheses based on the specific topic of this study, “Technology Acceptance Model (TAM) Towards Behavioral Intention to Use PromptPay of Customers in Bangkok,” were proposed and presented in Figure 2.3 Conceptual Framework Model Development, which is the main purpose of this literature review, was presented at the end of this chapter.

2.1 Background of Payment Systems Development

The Payment System (2010) provided the knowledge of how transactions involved money and financial instruments in the European Central Bank. The principal objective of payment, clearing and settlement arrangements is to facilitate transactions between economic agents and to support effective allocation of resources in the economy. Market infrastructure for payments and financial instruments represents one of the three core components of the financial system, together with markets and institutions. A key priority for European Central Banks (ECB), as the issuers of the currency, has played a significant role of payment system which includes financial market infrastructure for payments, securities and derivatives. The European System of Central Banks (ESCB) and European Central Bank (ECB) have unique responsibilities to promote smooth operation of payment systems. The banks and financial institutions are primary payment and financial service providers to consumers. Private individuals and merchants and firms need to have an effective and convenient way for making and receiving payments, while the public trust in payment instruments and systems is a key factor for them to effectively support transactions.

Papameletiou’s (1999) IPTS Study on Electronic Payment System, IPTS was requested by the European parliament to observe and follow up technological change, in the broadest sense, in order to gain a better understanding of its links with society and the economy. IPTS study provided the overview of currently available analyses on six key policy

statements and questions about the deployment of electronic commerce and the introduction of new payment systems. In co-operation with the European Science and Technology Observatory (ESTO), it showed that apart from security of electronic payment systems, there are several factors affecting the deployment of e-commerce, including cultural, generational, linguistic and computer literacy barriers, as well as the growth of internet infrastructure, to telecommunication costs, to the added value of on-line business solutions, to standardization and finally to legal issues, in particular regarding consumer protection. The security solutions and future prospects regarding the consumers' preferences and demand on electronic payment systems are needed. Trust and confidence among the parties to a transaction are commonly acceptable key requirements for the growth of e-commerce.

According to Federal Reserve System (2015), the U.S. payment system has improved in the recent years. The Federal Reserve played an important role in promoting these qualities as a leader, catalyst for change and provider of payment services to financial institutions and the U.S. Treasury. The Federal Reserve believed that the U.S. payment system was at a critical juncture in its evolution. Technology has rapidly been changing many elements that support the payment process. Meanwhile, payment security and the protection of sensitive data, which are foundational to public confidence in any payment system, are challenged by dynamic, persistent and rapidly escalating threats. Finally, an increasing number of U.S. citizens and businesses routinely transfer value across borders and demand better payment options to swiftly and efficiently do so. Fives core strategies were found and emphasized that the desired outcomes of the payment system would be realized only through collective efforts with all stakeholders; they are not the sole responsibility of the Federal Reserve. The final desired outcomes are speed, security, efficiency, internationalization and collaboration, respectively.

The Federal Reserve Payments' study (2016) presented the growth of the U.S. payments based on 2012- 2015 payments data, the number of domestic core non-cash payments totaled an estimated 144 billion with a value of almost \$178 trillion in 2015, up almost 21 billion payments or about \$17 trillion since 2012. Total non-cash payments increased at an annual rate of 5.3 percent by number or 3.4 percent by value from 2012 to 2015. Taken together, debit cards (including prepaid and non-prepaid cards), credit cards,

automated clearinghouse (ACH) credit transfers, ACH debit transfers, and checks compose a core set of noncash payment types commonly used today by consumers and businesses in the United States. The use of checks by number had peaked in the mid-1990s, the distribution of non-cash payments in 2015 is the outcome of many decade of change, just starting from 2007 non-prepaid debit card, then credit card, and then ACH payments were growing substantially overlook checks respectively.

The Bank of Thailand Payments Annual Reports year 2002 – 2014 provided a lot of knowledge and background about how Thailand’s payment systems have been developing in the past decade. The Bank of Thailand (BOT) has conducted work on policy, organizational structures, and systems development with an emphasis on the following major concerns:

- In 2001 – 2002 : Effectiveness of operations
- In 2003 : Cost and fee control
- In 2004 : Improvement in procedures, and direction of cash usage behavior
- In 2005 : Shift of role from payment service provider to private sectors
- In 2006 : Transformation from cash and cheque-usage to electronic
- In 2007 : Importance of payment systems to overall economy and social welfare
- In 2008-2010 : BOT’s appointment of new members to its PSC for maintenance of payment PSC entrusted with an important role in fostering the efficiency, safety and reliability of Thailand's payment systems.
- In 2011 : BOT’s definition of domestic and cross-border payment systems development to formulate a Payment Systems Roadmap 2012 – 2016
- In 2012 : Beginning of Payment Systems Roadmap 2012 – 2016
- In 2013-2014 : New payment innovations towards digitalization

Chairman of the Payment Systems Committee stated that “last year, Thailand witnessed a major shift of payment systems towards digitalization. Both bank and non-bank service providers introduced new payment innovations to the market through smartphone and tablet applications as well as other advanced technologies; for example, mutual funds trading with the call center via VDO calling, funds transfer using mobile phone number in place of account number, contactless technology, and two-dimensional barcode called quick response

(QR) code. At the same time, users also stepped up adoption of electronic payment services and electronic commerce.” (BOT, 2015)

It was observed that the reformation of Thai payment systems took place in the 1990s when BOT established three core electronic payment systems, designed to meet the needs of both wholesale and retail markets. In 2001, BOT set up the payment systems committee (PSC) and has so far approved three roadmaps for the payment systems. These roadmaps provided the framework for the development of Thailand’s payment systems during 2002 – 2004, 2005 – 2010 and 2012 – 2016, respectively.

In recent years, all levels of the Thai government have made significant collaboration with public and private sectors to develop the national electronic payment system since 2012 when the Thai government launched a government-sponsored e-payment system in line with the Bank of Thailand. The 2012-2016 payment systems roadmap stated that “the roadmap will be used as a framework for Thailand’s payment systems developed during 2012-2016 with the aim of establishing payment systems that are efficient, sound, safe and comply with international standards. Concerned agencies both public and private were communicated with regarding the direction of the roadmap so that they can devise business plans accordingly.” The aforementioned trend was in line with the government’s policy on digital economy which was aimed at applying information technology to everyday economic and social activities and processes of all economic sectors, including public, private and individuals, to uplift Thailand’s efficiency and competitiveness at a global stage.

From literature review about the payment systems developed in European, U.S.A. and Thailand in the past decade, the researcher found that the non-cash payment types are widely used today by consumers and businesses in all countries. These core non-cash payment types are used both in traditional ways, such as in-person purchases, payroll deposits, and bill payments, and in relatively new ways, such as mobile payments, e-commerce payments, and online bill payments. Several factors influenced the customers’ behavioral intention to use e-payment services, which are different in each country, continual change over the time depends on the market infrastructure for payments and financial instruments that are in line with the improvement of national payment systems and the growth of e-commerce. Furthermore, it is well-recognized that all parties, meaning central banks, banks, financial institutions, private

individuals, merchants, firms and public, are key players of the national payment system development, leading to the national economy system.

2.2 Previous Studies of new e-payment systems

An annual survey conducted in 2011 examined trends in adoption and use of mobile banking and payments, and how the emergence of mobile financial services affected how consumers interacted with financial institutions (Board of Governors of the Federal Reserve System, 2014). Key findings of this 2013 survey showed that mobile phones were used widespread; that was, 87 percent of the U.S. adult population had a mobile phone and 61 percent of mobile phones were smartphones or Internet-enabled. The conclusion and recommendations stated that the smartphones have become more common and versatile. They can play an increasing role in the interactions between consumers and financial service providers, retailers, and other businesses. The constant presence of mobile phones in consumers' lives also made them a potentially useful tool for delivery of just-in-time financial information or as an aid in decision making. The main factors limiting consumer adoption of mobile banking and payments were concerns about security and some beliefs that these services failed to offer any real benefits to users over existing methods for banking or payments.

A study of mobile payments in Thailand (Federal Reserve Bank of Boston, 2015) introduced that “most Thais have typically favored cash – 68% stated that it is their preferred mode of payment in a 2013 Nielson survey. However, Thailand’s payment environment is changing as more people adopt smartphones, use online and mobile banking, and the financial infrastructure becomes more supportive of electronic payments, including mobile. This case study briefing examined the mobile payment landscape in Thailand – key drivers of mobile payment adoption as well as some of the challenges. Key drivers assessed included broad smartphone adoption, developed financial infrastructure, and consumer interest in payment innovation. Although mobile payment availability is currently limited in Thailand, consumers are eager to try digital wallets and other new technologies. Barriers evaluated included preference for cash, security concerns, and consumer behavior.” This study found that implementation of enhanced security will increase consumer confidence in using digital and

mobile payments. Broader education and marketing programs can build consumers' awareness of the value and convenience afforded by mobile payments. Retailer incentives, such as promotional offers and loyalty rewards, can play an instrumental role in boosting adoption as well.

According to Deorukhkar (2015), digital banking in emerging Asia – progress and prospects, “Asia Banking Watch” reported in October 2015 that personal finance trends across Asia have seen a visible shift towards digital banking over the past five years. In his report highlighted that emerging Asia has seen a sharper increase in digital banking penetration (3.3 times) compared to developed Asia (1.6 times). More specifically, internet banking penetration has increased 2.8 times while smartphone penetration has surged 5.2 times in Emerging Asia between 2010 and 2014. This watch examined the current state of digital banking transformation across emerging Asian economies. It also showed that mobile banking transactions surpassed internet banking transactions in Thailand during the first half of 2015.

Payment Statistics reported payment statistics between 2010-2015 that the monthly average value of credit card payments increased from 3,753 baht to 5,477 baht per card and the monthly average value of debit card payments increased from 76 baht to 248 baht per card, as shown in Table 2.1 below:

Table 2.1: Use of credit cards and debit cards via EFTPOS (monthly average per card, baht)

	2010	2011	2012	2013	2014	2015
Credit card	3,753	4,011	4,598	4,871	5,325	5,477
Debit card	76	181	191	194	196	248

Source: Bank of Thailand. (2016). Payment Statistic 2016.

While the monthly average value of cash withdrawals via ATM card increased from 6,767 baht to 7,586 baht per card, the monthly average value of cash withdrawals via debit card increased from 8,961 baht to 11,678 baht per card from year 2010 to 2015 respectively as shown in Table 2.2 below:

Table 2.2: Cash withdrawal via ATM (monthly average per card, baht)

	2010	2011	2012	2013	2014	2015
ATM card	6,767	7,711	8,265	8,381	8,229	7,586
Debit card	8,961	9,198	9,956	10,579	10,979	11,678

Source: Bank of Thailand. (2016). Payment Statistic 2016.

BOT also witnessed the number of electronic payment cards from 2010 to 2015. The number of debit cards increased 47% from 34.13 to 50.41 million cards, surpassing the ATM cards which decreased 12% from 24.31 to 21.74, while the number of credit cards increased 53% from 14.18 to 21.76 million cards from year 2010 to 2015 respectively as shown in Table 2.3 below:

Table 2.3: Number of electronic payment cards (million cards)

	2010	2011	2012	2013	2014	2015
Total	72.62	77.81	83.96	87.97	93.49	93.91
Credit card ¹	14.18	15.32	16.87	18.63	20.30	21.76
ATM card	24.31	23.76	24.11	24.10	25.07	21.74
Debit card	34.13	38.73	42.98	45.24	48.12	50.41

Source: Bank of Thailand. (2016). Payment Statistic 2016.

¹ Data includes non-banks

The above financial data presented the e-payment trends in Thailand over the last five years since 2010. The researcher observed that the digital banking penetration in Thailand has been rising rapidly but still remained at a low level. Customers seemed to prefer using credit cards more than debit cards to purchase goods or services even though the number of debit cards increased more than that of ATM cards, but customers preferred using debit cards mainly only for cash withdrawal.

2.3 Background of PromptPay Service

The advancement of the payment systems is a key and significant connection for the country's economy towards e-Payment. With e-payment, all economic sectors would be able to conduct a complete process of electronic transactions. The Bank of Thailand officially introduced "PromptPay to Public, announcing that "PromptPay, a new service to transfer funds, has been developed by banks to support the Any ID National e-payment project under the government's master plan to develop a national e-payment infrastructure. PromptPay is a service that will allow individuals and businesses to transfer funds more quickly and easily by using mobile phone numbers or citizen ID numbers instead of bank account numbers to receive funds. In the first phase, it will enable individuals to make a person-to-person payment (P2P), while providing such services to businesses later on. In the near future, government agencies can transfer social benefits, financial aids and tax refunds to citizens via PromptPay services." (BOT, 2016)

Further, the Thai Bankers' Association have collaborated with the Bank of Thailand (BOT) to promote "PromptPay". Pinijsarakarn (2016) reported in The Nation Multimedia that all Thai state-run and commercial banks allow people to register for PromptPay starting July, 2016. The PromptPay service promoted the new money-transfer system including payments made to merchants, with recipients able to provide only a citizen ID or a mobile-phone number instead of their bank account details under the first phase. Then PromptPay fees will be applied for bill payment and request-to-pay services under the second phase of the project. In addition, the Thai association and its bank members have jointly invested in laying the payment and technological infrastructure for PromptPay, along with a commitment to maintain low transaction fees until the end of 2019 to attract customers to migrate to the new national e-payment system, in line with the aim of Payment Systems Roadmap 2012-2016; that is, Thailand will be a cashless society.

According to the Bank of Thailand Payment Systems service PromptPay (2016), there are top ten frequently asked questions provided by BOT as Table 2.4 below:

Table 2.4: Top ten frequently asked questions of PromptPay service

	Question	Answer										
1	<p>What is the benefit of PromptPay?</p> <p>Does everyone have to register for PromptPay?</p>	<p>- PromptPay, previously known as “Any ID,” is a new money transfer method that eliminates the use of a bank account number. The only number being required is either a mobile phone number, a citizen ID number, or both for the transfer service through various channels such as Internet banking, mobile banking, and ATM. Money transfers through PromptPay are more convenient and secured. PromptPay is one of the five national e-payment strategies developed by the government.</p> <p>- It is the consumers’ decision whether to register for PromptPay. Consumers will gain benefits from PromptPay fees, which are lower than the existing transfer fees.</p> <p>- In the first phase, PromptPay provides services for individuals’ transaction with lower fees.</p> <p>- PromptPay fee for individuals’ transaction are as follows;</p> <table border="1"> <thead> <tr> <th>Value per Transaction (Baht)</th> <th>Fee per Transaction (Baht)</th> </tr> </thead> <tbody> <tr> <td>Less than 5,000</td> <td>Free of charge</td> </tr> <tr> <td>Between 5,000 - 30,000</td> <td>Less than 2 Baht</td> </tr> <tr> <td>Between 30,000 - 100,000</td> <td>Less than 5 Baht</td> </tr> <tr> <td>Between 100,000 - *Maximum Value</td> <td>Less than 10 Baht</td> </tr> </tbody> </table> <p>*Maximum value depends on each Bank</p>	Value per Transaction (Baht)	Fee per Transaction (Baht)	Less than 5,000	Free of charge	Between 5,000 - 30,000	Less than 2 Baht	Between 30,000 - 100,000	Less than 5 Baht	Between 100,000 - *Maximum Value	Less than 10 Baht
Value per Transaction (Baht)	Fee per Transaction (Baht)											
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Between 30,000 - 100,000	Less than 5 Baht											
Between 100,000 - *Maximum Value	Less than 10 Baht											

	Question	Answer
2	Is the PromptPay service safe?	<ul style="list-style-type: none"> - The PromptPay service provides more convenient and secured monetary transfers in compliance with international standards under the control of the Bank of Thailand, similar to other payment systems. - The PromptPay system is carefully implemented starting from registration process to development process for security of its centralized system until the process of consumers' utilization is complete. - Registration: Banks will carefully validate consumer's identity with citizen ID or mobile-phone number. - Safeguard of Centralized System: PromptPay enhanced the existing money transfer system, resulting in more security. It is connected between banks and PromptPay's centralized service provider called NITMX Company. The PromptPay service offers a closed service system connecting with international standards of highly innovative secured compliance technology. PromptPay is not a mobile application, and does not connect to the Internet. Therefore, there will not be a risk of cyber-hacking. - The BOT monitors and controls the PromptPay security system development, and guarantees its security and information technology (IT) control system in compliance with international standards, information accessibility, backup information as well as backup plan in case of emergency.
3	Do consumers need to register for PromptPay for the money transfer service?	<ul style="list-style-type: none"> - Transferor: The transferor can transfer money without registering for PromptPay as usual. Only the transferors who register for PromptPay can gain the benefit of lower transaction fees. - Transferee: Transferees needs to register for PromptPay. Then transferors can transfer money to the transferee's account by using the transferee's mobile-phone number or ID number.

	Question	Answer
4	Do consumers need to register for PromptPay for all bank accounts?	<p>No, the consumer does not need to register for PromptPay for all bank accounts.</p> <p>It depends on his preference whether to register for PromptPay for only one or more bank accounts.</p> <p>However, one citizen ID or mobile phone number can be linked to only one bank account; it is not allowed to register for PromptPay with the same number for additional bank accounts.</p>
5	Can other people use my ID number or mobile phone number to transfer money from my account?	<ul style="list-style-type: none"> - The PromptPay service provides a convenient method for a transferee to receive money. - Consumers need to send or withdraw money from their accounts via a normal withdrawal process. Thus, it is impossible for other people to withdraw money from your bank account with only your citizen ID or mobile phone number. - Mobile banking or Internet banking services are protected by the account authentication with a unique username and password. The ATM service requires an ATM card with password. The bank counter service requires a bank book and signature as usual. These activities do not require a citizen ID or mobile phone number. - Banks provide a consumer protection in terms of security and privacy such as Know Your Customer (KYC) in accordance with BOT's regulation and identify the consumer's mobile phone number during the registration process. Furthermore, the consumer's personal information must be the same as recorded one in the bank account.

	Question	Answer
6	What are the PromptPay guidelines and precautions?	<p>Guidelines for Transferee/Recipient:</p> <ul style="list-style-type: none"> - A transferee must register for PromptPay prior to informing citizen ID or mobile phone number to a transferor. - One citizen ID or mobile phone number can be linked to only one bank account. - If a consumer wishes to change a bank account for the PromptPay service, he must cancel the existing bank account first. Then a new bank account can be registered for the service. If the consumer has changed or cancelled the mobile phone number which links to the bank account, he will need to cancel the PromptPay service as soon as possible. Afterward, the consumer can register for PromptPay with a new mobile phone number. <p>Guidelines for Transferor:</p> <ul style="list-style-type: none"> - A transferor should check transferee's full name prior to confirming the transaction at all times. <p>Precautions for PromptPay service:</p> <ul style="list-style-type: none"> - Consumers should protect their own information such as mobile phone devices linking to the PromptPay service from others the same way as their debit card or ATM card. The transferor should study PromptPay service guidelines, such as, verification of the personal information prior to confirming a transaction. - Consumers should set up their own username and password and should not disclose these credentials to anyone. - Some transaction incidents may occurred because of human errors, not system errors. Consumers should be aware of scams involving money transfer to a third party or fraudulent consumers' username and password.

	Question	Answer
7	<p>Can a pre-paid mobile phone number be used to register for PromptPay? How can the owner of the pre-paid mobile phone number be identified?</p>	<p>-The pre-paid mobile phone number registered at a mobile phone service provider can be used to register for the identity qualification process with PromptPay.</p> <p>- The other pre-paid mobile phone numbers can used to register for PromptPay only if the owner of that phone number gives a power attorney to apply for PromptPay application on his behalf.</p> <p>- Consumers can check with the mobile phone service provider whether or not their mobile phone number is registered with the ID number by calling *179*ID number#starting July 15, 2016.</p>
8	<p>What needs to be done in case of transaction errors with the PromptPay service?</p>	<p>-Consumers should keep reference details of each transaction and inform the initiated bank to investigate the transaction error. All banks have their standard process to investigate and countermeasure such problems for consumers.</p>
9	<p>(1) Will social welfare be cancelled if registering for PromptPay? senior citizens over 60 years of age, so consumers need to register for PromptPay?</p>	<p>(1) PromptPay is an alternative way of the existing payment services.</p> <p>Consumers can continue receiving the social welfare funds such as senior monthly allowance from the government with or without registering for PromptPay.</p>

	Question	Answer
9	(2) If a bank account is currently linked with social welfare or monthly allowance for	(2) It is recommended for consumers who currently receive social welfare funds to register PromptPay with a bank account to receive funds so that the government can directly transfer funds promptly to them.
10	Is consumer's personal information secured and protected?	Consumer's personal information will be secured with highly innovative secured technology. Law and Regulation of Bank of Thailand (BOT) strictly protected and controlled that banks or NITMX cannot disclose any personal information to others.

Currently, SCB PromptPay (Any ID Project) promoted on its that the new money transfer service was developed in line with the government policy. SCB introduced that “This service would facilitate more convenient and secure monetary transfers. Simply link the mobile phone number and/or the citizen ID number to the SCB bank account. If the customer already owns a SCB bank account, there is no need to open a new account for this service. The registration is free of charge as a voluntary option. Changes or cancellations of the service regarding the registration can be made at any time simply inform the bank issuing the account. Changes and cancellations are also processed free of charge.”

The benefits of SCB PromptPay were promoted as follows:

➤ **Transfer between SCB accounts using SCB PromptPay**

Convenient money transfers with only a mobile phone number or citizen ID number
(Bank account number is not needed)

➤ **Interbank transfer using SCB PromptPay**

Convenient money transfers with only a mobile phone number or citizen ID number
(Bank account name and number are not needed)

➤ **Receive money directly from the government using the citizen ID number**

Government benefits, tax returns, and other benefits

➤ **High security. No need to carry cash.**

Reduced risk from carrying cash. All transactions can be checked.

PromptPay was introduced to customers nationwide in correspondence to the 2012-2016 roadmap project. All participating banks opened more channels for free registration, such as website, mobile banking, ATM machines, and branches effective from January 1, 2017. All banks also guaranteed that PromptPay services were provided with a highly standardized data management system in addition to a recognized expertise in doing business for their sustainable growth over the years.

From all previous research, the researcher observed the trends of new payment innovations adopted globally. Factors influencing customers' behavioral intention depended on conditions in each country. Currently there are many alternative payment services with new technology systems offered to Thai customers, but the factors influencing Thai customers' behavioral intention to use payment services are various and unpredictable.

The Bank of Thailand (2016) clearly stated that "PromptPay service is the important step in the development of national e-payment infrastructures and services which will reduce cash usage, increase the efficiency and accuracy, and make it easy to verify past transactions. This service will promote the use of e-Payment in order to reduce the overall cost in the payment systems and enhance the competitiveness of our country." The researcher focused on the fact that the Thai economy and its citizens' quality of life depended substantially on the security, and availability of a national payment system; therefore, the core theme for this study is the existing opportunities and challenges of transaction banking towards digital transformation project promoted by the Thai government called "PromptPay".

Even though the Thai Bankers' Association and the Bank of Thailand as well as all Thai state-run and commercial banks have cooperated with all businesses and private sectors in order to convince customers to register for PromptPay, they still hesitate to do so and prolong their decision to register for PromptPay. Therefore, the researcher focused on factors influencing customers' behavioral intention to use PromptPay of customers in Bangkok. The

researcher believed that the results of this study can be a guideline for the Thai government, financial institutions and their partners in the private sector to follow to gain more collaboration as well as to enlarge their value proposition and to accelerate their time to develop PromptPay services to meet the customers' needs and expectations. In addition, the results will contribute to accelerating the customers' behavioral intention to use PromptPay as well as their shift towards digitalization along with the growth of social commerce in Thailand.

2.4 Technology Acceptance Model (TAM) Studies

2.4.1 Overview of Technology Acceptance Model

Chuttur (2009) provided a historical overview of the origins, developments and future directions of the technology acceptance model (TAM) by considering the fact that user acceptance of technology has been an important field of study. It was also pointed out that "Although many models have been proposed to explain and predict the use of a system, the Technology Acceptance Model has been the only one which has captured the most attention of the Information Systems community." (Chuttur, 2009, p. 1)

The researcher learned that the TAM was developed to meet the needs of growing technology along with the organizations' system adoption in the late 20th century. Davis (1985) suggested that users' motivation can be explained by three factors: PEOU, PU and attitudes towards using the system and proposed the TAM. David had continually developed a conceptual model that produced more reliable measures to explain system acceptance or rejection, mainly relying on Fishbein and Ajzen (1975), who formulated the theory of reason action (TRA), and other related research studies.

Further the first modified version of TAM (Davis et al., 1989) included behavioral intention as a new variable that would be directly influenced by the perceived usefulness of a system. It was found during the later development of the TAM that the BIU would be directly influenced by two individual beliefs: PU and PEOU. In recently years, the theory of technology acceptance Mmodel (TAM) became the most widely applied in many research studies when considering new technology (Venkatesh & Davis, 1996).

2.4.2 Determination of appropriate TAM

Chuttur (2009) explored the evolution of the TAM and found that the later development of the TAM (Davis, 1989) suggested that there would be cases when, given a PU system, an individual might form a strong BIU of the system without forming any attitude, thus giving rise to a modified version of the TAM model, as illustrated in Figure 2.1 below.

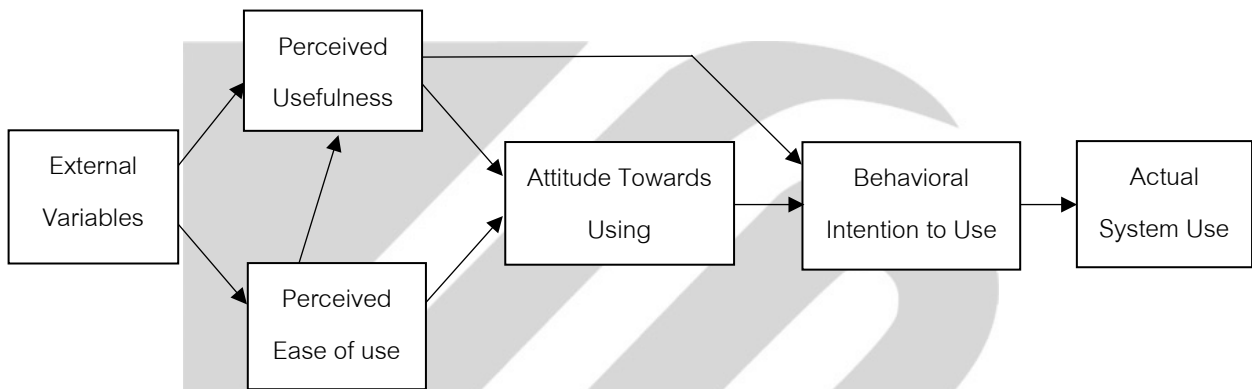


Figure 2.1: First Modified Version of TAM

Source: Davis, Bagozzi and Warshaw, 1989: 985

Chuttur (2009) further explored that “Davis et al. (1989) used the above model to conduct a longitudinal study, whereby the main finding was that both PU and PEOU were found to have a direct influence on behavioral intention, thus eliminating the need for the attitude construct” the first modified version of the TAM in Figure 2.1 was revised to the result of the final version of the TAM as shown in Figure 2.2 below.

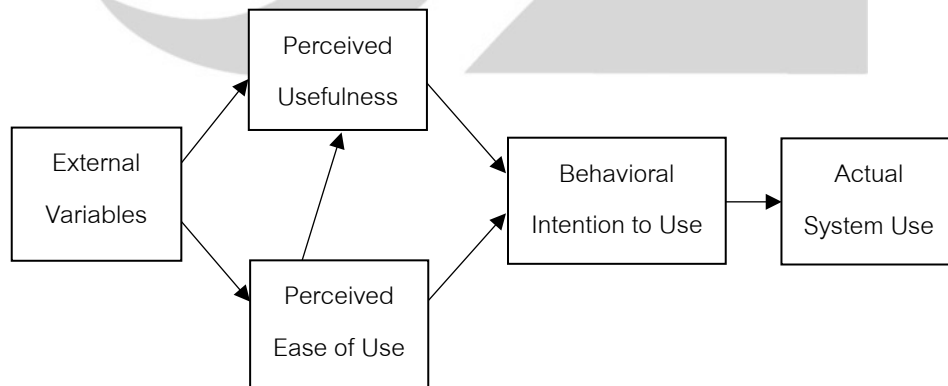


Figure 2.2: Final Version of TAM

Source: Venkatesh & Davis (1996, p. 453)

The theory of technology acceptance model (TAM) is the most widely researched and applied to examine behavioral intention to use different types of information technology systems. For instance, many researchers applied the TAM to analyze the new payment services adoption over the other theories (e.g. Chandra et al., (2010); Shin (2010); Singh et al. (2010); Mojtahed et al. (2011); Zhou (2011); Amoroso & Watanabe (2012); Rezaei et al. (2013); Kazi & Mannan (2013); Alsamydai (2014); Al-Jabri (2015); Phonthanukitithaworn et al. (2015).

Therefore, the researcher considered that the final version of the TAM is an appropriate theoretical tool to gain a better understanding of the influencing factors that result in the consumers' behavioral intention to use PromptPay in Bangkok. The theory was applied by maintaining the major constructs of perceived usefulness, perceived ease of use and behavioral intention to use, while extending the external variables into three main categories of system characteristics, social characteristics and user personal characteristics in helping to explain why customers reject or accept new technology towards behavioral intention to use PromptPay of customers in Bangkok.

2.5 Concepts and Hypothesis Development

Park (2009) determined that the external variables could be grouped into four categories: individual context, system context, social context, and organizational context for an analysis of the TAM in understanding university student's behavioral intention to use e-learning. Durodolu (2016) applied the TAM as a predictor of using information system to acquire information literacy skills. Winarto (2011) identified that many external variables can be used along with the theory of TAM to find the use and adaptation of new skills. The first external variable was output quality (Davis et al., 1992), and since then more than 70 external variables had been popularly added to the TAM in previous research reviewed by Yousafzai et al. (2007, p.252-268). The external variables for PU and PEOU were divided into four main categories of organizational, system, users' personal characteristics and other variables as shown in Table 2.5 below:

Table 2.5: External variables proposed to affect the internal beliefs (PU and PEOU)

Organizational Characteristics	System Characteristics	User personal Characteristics	Other Variables
Competitive environment	Accessibility	Age	Argument for change
End-user support	Access cost	Awareness	Cultural affinity
Group's	Compatibility	Cognitive Absorption	External computing support
Innovativeness norm			
Implementation gap	Confirmation Mechanism	Computer anxiety	External computing training
Internal computing Support	Convenience	Computer attitude	Facilitating conditions
Internal computing Training	Image/interface	Computer Literacy	Subjective norms
Job insecurity	Information quality	Education level	Situational Normality
Management Support	Media style	Experience	Social influence
Organizational Policies	Navigation	Gender	Social pressure
Organizational Structure	Objective usability	Intrinsic motivation	Task technology fit
Organizational Support	Output quality	Involvement (situational/intrinsic)	Task characteristics
Organizational usage	Perceived attractiveness	Personality	Vendor's co-operation
Peer influence	Perceived complexity	Perceived developer's Responsiveness	
Peer usage Training	Perceived importance	Perceived enjoyment	
	Perceived software Correctness	Perceived playfulness	
Transitional support	Perceived risk	Perceived resources	
	Relevance with job	Personal innovativeness	
	Reliability and accuracy	Role with technology	
	Response time Result	Self-efficacy	
	Result demonstrability	Shopping orientation	
	Screen design	Skills and knowledge	
	Social presence	Trust	
	System quality	Tenure in work force	
	Terminology	Voluntariness	
	Trial ability		
	Visibility		
	Web security		

Source: (Yousafzai, et al. 2007) "A meta-analysis of the TAM"

From aforementioned research, the researcher proposed to apply the external variables which are constructed into three main categories as follows:

2.5.1 System Characteristics

System characteristics rely on organization's technology adoption along with the fast-changing technological infrastructures and marketing techniques. Park (2009) found that system accessibility was a determinant construct towards PEOU based on the TAM in understanding university students' behavioral intention to use e-learning. Shin (2010) confirmed that a perceived risk also affected consumers' acceptance of mobile payment systems. Mojtahed et al. (201) indicated that while the value of perceived risk increased and the intention to use mobile banking declined, the perceived risk was also found to have an influence on PU. Alsamydai (2014) focused on quality factors of system in adaption of the TAM to the use of mobile banking services. Zhou (2011) indicated that perceived security, perceived ubiquity and PEOU have significant effects on initial trust. Phonthanukitithaworn et al. (2015) used the compatibility, perceived trust, perceived costs as key constructs into his study about user intentions to adopt mobile payment services in the Thai market. Al-Jabri (2015) showed that the factors directly affecting mobile banking adoption were compatibility and risk and indicated that compatibility was the strongest effect on the intention while perceived risk was a barrier to the intention to use mobile banking. Amoroso, and Watanabe (2012) found a low perceived risk, thereby creating trust and positive attitude and strong intention to use Mobile Suica in Japan. Kazi and Mannan (2013) stated that the nature of risk in online banking has always been an inhibitor factor in customers' behavioral intention to adopt mobile banking services. Additionally, Rezaei et al. (2013) studied the factors affecting Isfahanian mobile banking adoption, concluding that compatibility had a strong direct effect to PEOU, PU & BIU.

Yousafzai, et al. (2007) summarized proposed constructs in this particular field based on various research studies that adopted the theory of TAM to analyze the relationship between external variables towards PU, PEOU, BIU; therefore, the researcher proposed the system characteristics as a significant determinant for this study. The system characteristics are defined as "the participated banks' system accessibility, access cost, compatibility,

convenience, information quality, perceived risk and system quality which influenced customers' behaviors in a way that interacted with the payment transaction.”

Taking the TAM model and related studies into consideration, the hypotheses for this study with regard to System Characteristics were formulated as follows:

H3: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the social characteristics in terms of subjective norms, social influence and social pressure.

H6: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality affect the perceived usefulness of PromptPay.

H9: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the perceived ease of use of PromptPay.

H13: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the behavioral intention to use PromptPay.

2.5.2 Social Characteristics

In previous research (e.g. Venkatesh & Davis, 2000), social influence construct consists of family, relatives, and friend items. Schepers and Wetzels (2007) conducted a quantitative meta-analysis research on the TAM attempting to make well-grounded statements on the role of subjective norms. The results indicated a significant influence of subjective norms on PU and behavioral intention. Singh et al. (2010) highlighted strong social influence of family and friends on technology adoption. Moeser et al. (2013) found that social norms have a strong indirect influence via PU on attitudes and intention, creating a network effect for peer users. Kazi and Mannan (2013) concluded that social influence was found most significant in the intention to adopt mobile banking. Park (2009) concluded that subjective norms play an important role in affecting attitude behavioral intention towards use e-learning. Similarly,

Phonthanukitithaworn et al. (2015) stated that subjective norms are another construct that were found to have a significant influence on Thai consumers' intention to adopt m-payment services and the perception of the usefulness of the services. Amoroso and Watanabe (2012) explained that beyond advertising, social influence was a significant factor among younger people who tend to carry newer models for mobile wallets, seen in a case study of Mobile Suica in Japan.

Social characteristics are considered as significant external variables that influence the users' personal lifestyles, such as culture, religion, economic status or family. Businesses need to be aware of social characteristics because they are very important elements for proper decision marketing. Yousafzai et al. (2007) also summarized proposed constructs in other various fields; therefore, social characteristics for this study are defined as "the subjective norms, social influence and social pressure that influence customers' behavior in a way that interaction with payment transaction" (p.269).

Taking the TAM model, the hypotheses for this study with regard to Social Characteristics were formulated as follows:

H2: Social characteristics, including subjective norms, social influence and social pressure, affect the user personal characteristics in terms of computer attitude, experience and trust.

H5: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived usefulness of PromptPay.

H8: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived ease of use of PromptPay.

2.5.3 User Personal Characteristics

According to Venkatesh et al. (2000), PU affected attitudes at the workplace where external suggestions shaped female attitudes. Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980) linked attitudes to BI as early as 1980. Their work garnered good support (Pavlou, 2003). Gaining trust could reduce fears and worries (Pavlou & Gefen, 2004). Trust

is an important element which affected consumers' decisions to adopt technologies, such as e-commerce. Chandra et al. (2010) confirmed that trust affected users' adoption of mobile payment through PU and PEOU. Shin (2010) confirmed that trust also affected consumers' acceptance of mobile payment systems. Zhou (2011) explained that due to the high perceived risk and low switching costs, it was critical to build users' initial trust to facilitate their usage of mobile payment. His results showed that perceived security, PEOU and perceived ubiquity significantly affected initial trust, which in turn determined perceived usefulness. Both initial trust and PU affected usage intention. Amoroso and Watanabe (2012) pointed out on the issue of trust using a new payment system that the credibility of the issuer and the confidence of potential users are of prime importance. Kazi and Mannan (2013) recommended building trust level for potential consumers in order to reduce the nature of perceived risk in Pakistan. Alsamydai (2014) pointed out that the use of mobile banking services depended on the user's experience, whereby the strongest correlation was found between PEOU and experience. Al-Jabri (2015) found that perceived trust had a significant effect on PEOU, and perceived trust affected intention to use mobile banking indirectly through perceived risk. Madan et al. (2016) pointed out that the growth of m-commerce contributed to a better understanding of how trust could be built on a mobile device. Amoroso and Watanabe (2012) observed that social influence in using mobile wallets in Japan was stronger for younger than older people, and that gender was not a differentiator. However, PromptPay provides individuals and businesses with faster fund transfers. It enables individuals to make a person-to-person payments (P2P) and later government agencies can transfer social benefits, financial aids, and tax refunds to its citizens. Thus, age and gender were not significant factors for this study.

Previous literature review on background of payment systems development highlighted that individuals or User Personnel Characteristics were significant external variables widely used in research constructions in conformity with the validity of the TAM model as presented by Yousafzai et al. (2007); therefore, User Personnel Characteristics are defined as "customers' characteristics such as computer attitudes, experience and trust which influence customers' behaviors in a way that interact with payment transaction". Taking the TAM model into consideration, the hypotheses used for this study with regard to User Personnel Characteristics were formulated as follows:

H1: User personal characteristics, including computer attitude, experience and trust, affect the system characteristics in terms of system accessibility, access cost, compatibility, convenience, perceived risk and system quality.

H4: User personal characteristics, including computer attitude, experience and trust, affect the perceived usefulness of PromptPay.

H7: User personal characteristics, including computer attitude, experience and trust, affect the perceived ease of use of PromptPay.

2.5.4 Perceived Usefulness (PU)

According to Davis (1989), perceived usefulness (PU) is defined as “the degree to which an individual believes that using a particular system would enhance his or her job performance”. Rezaei et al. (2013) perceived usefulness was found to be one of the factors that influence consumers’ behavior intention in adopting mobile banking. Al-Jabri (2015) defined PU as the extent to which the customer believed that mobile banking channels, like ATM or phone banking, for conducting banking services. Phonthanukitithaworn et al. (2015) pointed out that however, PU in the context of M-payment services can be explained as the extent to which an individual believes that using M-payment services will enhance his or her productivity and performance in conducting payment transactions. PU also captures how M-payment can help users to achieve task-related goals, such as being more effective and efficient in activities. For instance, a consumer may feel that M-payment services will allow him/her to pay via their mobile phone at anytime from anywhere.

In this study, “job” was replaced with “daily life of customer has an interaction with payment transactions by using PromptPay”, and PU in the context of PromptPay can be explained as “the degree to which an individual believes that using PromptPay would enhance his or her productivity and performance in conducting payment transactions”. Taking the TAM model and related studies into consideration, the hypotheses for this study with regard to PU were formulated as follows:

H11: Perceived usefulness affects the behavioral intention to use PromptPay.

2.5.5 Perceived Ease of Use (PEOU)

According to Davis (1989), perceived ease of use (PEOU) is defined as “the degree to which an individual believes that using a particular system would be free of physical and mental effort”. Mojtaheed et al. (2011) confirmed that PEOU was found to have an influence on perceived usefulness. Rezaei et al. (2013) also found PEOU to be one of the factors that influence consumers’ behavior intention in adopting mobile banking. Al-Jabri (2015) summarized the recent research studies on mobile banking, and developed his study, hypothesizing that PEOU would have a direct relationship with perceived usefulness as well as the intention to use mobile banking services.

Phonthanukitithaworn et al. (2015) pointed out that PEOU is related more to the assessment of the intrinsic characteristics of using information technology. This suggested that an individual’s perception of PEOU is based on the assessment of ease of use and ease of learning, flexibility, and clarity of the interface and the processes involved in using it. For instance, some people may find that conducting a payment transaction through a mobile device is difficult since there are several steps involved, such as registering with a service provider as well as initializing and authorizing the transaction.

Previous studies explored that PEOU depended on the technical limitations of study cases, for this study, PromptPay is not a mobile phone application and this new technology offers the simplest application of a new payment system in Thailand. Therefore, PEOU in the context of PromptPay service can be explained as “the degree to which an individual believes that using PromptPay would be free of physical and mental effort.”

Taking the TAM model and related studies into consideration, the hypotheses for this study with regard to PEOU were formulated as follows:

H10: Perceived ease of use affects the perceived usefulness of PromptPay.

H12: Perceived ease of use affects the behavioral intention to use PromptPay.

2.5.6 Behavioral Intention to Use (BIU)

The behavioral intention to use (BIU) is a dependent variable used for this study to determine whether customers will make a decision or an intention to use PromptPay services.

BIU) in the context of PromptPay services can be explained as “the customer’s likelihood to engage the PromptPay” (Davis, 1989; Fishbein and Ajzen, 1975).

Many research studies (e.g. Chuttur, M.Y., 2009, p.10) recognized that there was a direct and significant influence between behavioral intention and actual usage of the system and BIU is affected by PU and PEOU as the final version of TAM (Venkatesh & Davis, 1996). Therefore, the hypotheses formulated for this study with regard to BIU focused on whether the PEOU and PEOU will affect the behavioral intention to use PromptPay.

In accordance with the previously stated objectives and the related literature, this study tested the following hypotheses:

H1: User personal characteristics, including computer attitude, experience and trust, affect the system characteristics in terms of system accessibility, access cost, compatibility, convenience, perceived risk and system quality.

H2: Social characteristics, including subjective norms, social influence and social pressure, affect the user personal characteristics in terms of computer attitude, experience and trust.

H3: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the social characteristics in terms of subjective norms, social influence and social pressure.

H4: User personal characteristics, including computer attitude, experience and trust, affect the perceived usefulness of PromptPay.

H5: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived usefulness of PromptPay.

H6: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality affect the perceived usefulness of PromptPay.

H7: User personal characteristics, including computer attitude, experience and trust, affect the perceived ease of use of PromptPay.

H8: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived ease of use of PromptPay.

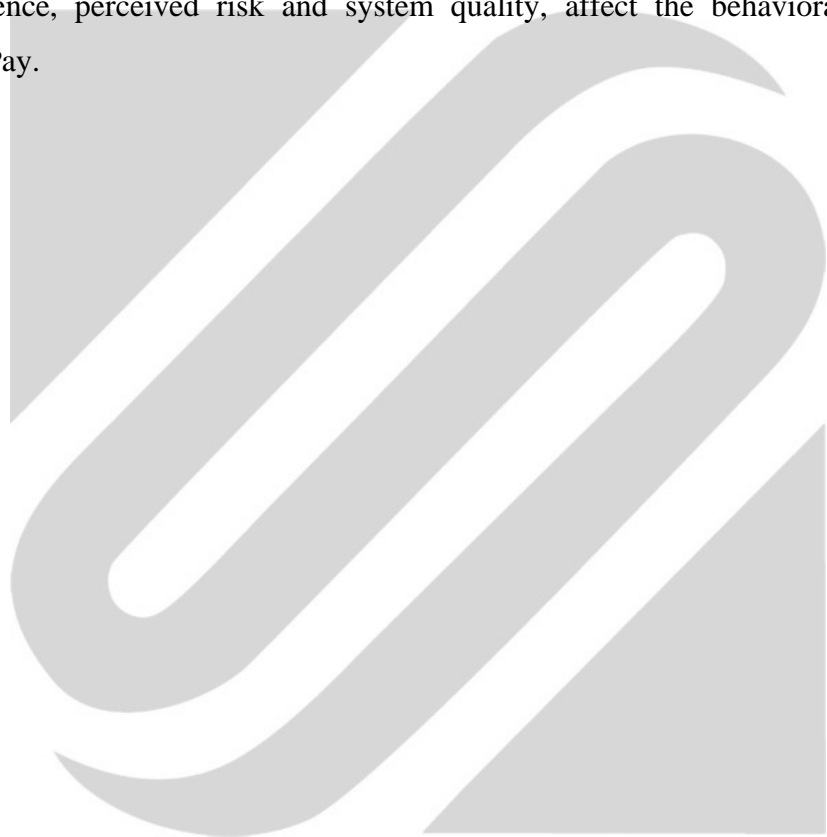
H9: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the perceived ease of use of PromptPay.

H10: Perceived ease of use affects the perceived usefulness of PromptPay.

H11: Perceived usefulness affects the behavioral intention to use PromptPay.

H12: Perceived ease of use affects the behavioral intention to use PromptPay.

H13: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the behavioral intention to use PromptPay.



2.5.7 Conceptual Framework Model Development

According to Venkatesh and Davis (1996) and various related studies, the researcher adopted the conceptual framework model as shown in Figure 2.3

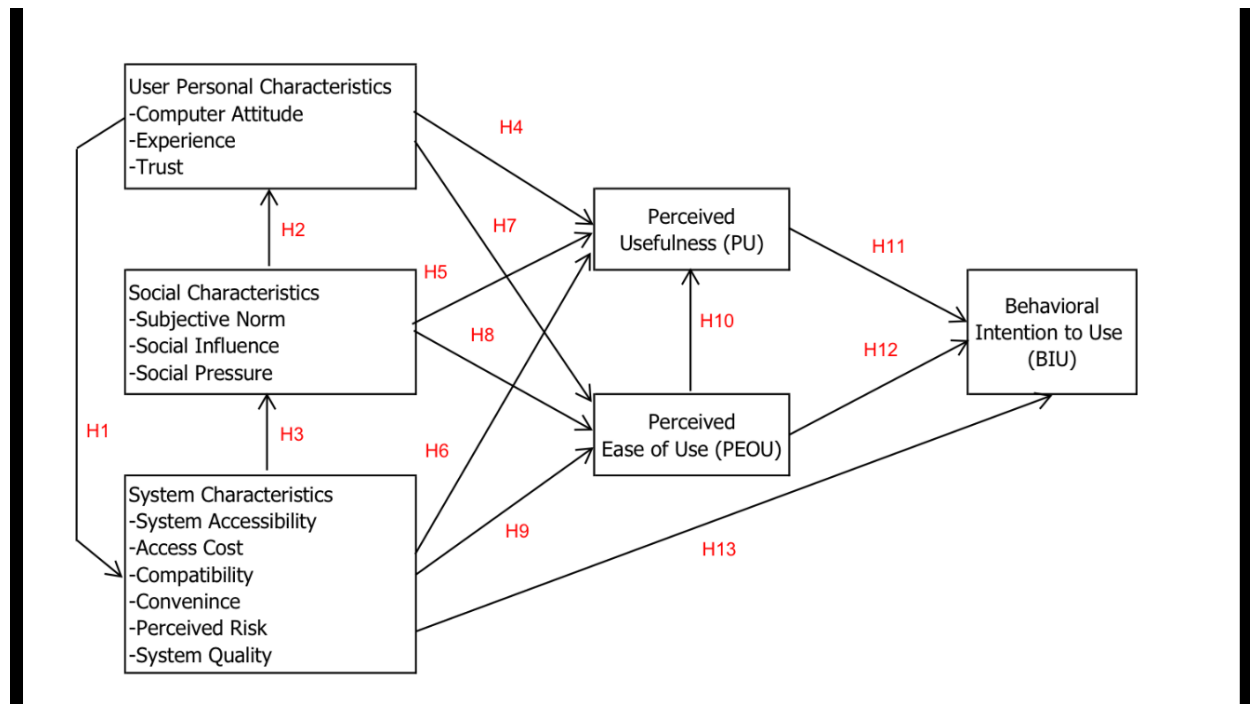


Figure 2.3 Conceptual Framework Model Development

Source: Adapted from the final version of TAM (Venkatesh & Davis, 1996: 453)

CHAPTER 3

RESEARCH METHODOLOGY

In the study of technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok, the researcher developed and designed the research based on this new payment system development and process studies. This survey research used a quantitative method. The instrument used for data collection in this study was a . The proposed conceptual framework and hypotheses were developed from the theory of TAM and related research. The data were collected using an online 5-rating scale questionnaire from a sample of 621 Thai customers, who were over 15 years of age and living in Bangkok. The reliability of the questionnaire was tested with a small sample of the population prior to the actual survey. As a result, the statistical data analysis was conducted using LISREL 8.72 and complex correlations were examined.

Since the quality of survey questions was essential, the validity test was conducted in the first step and the reliability test was carried out in the second step of the questionnaire development. The final questions had to pass the validity and reliability test to confirm that the questions were reliable and acceptable for conducting the actual survey. The online questionnaire was conducted with a large number of potential respondents from May 2017 to June 2017. The researcher analyzed the collected data using descriptive statistics, confirmatory factor analysis and structural equation model (SEM). The descriptive statistics used in this study included mean and standard deviation, while confirmatory factor analysis (CFA) was carried out to determine significant variables and structural equation model (SEM) was used to to assess the correlations as a network of interconnected variables and to interpret the fit of the model to the data.

The research methodology presented in this chapter include:

1. Population and Sample Size Determination
2. Research Instrument Design
3. Tests of Measurement and Quality
4. Data Collection Procedure
5. Quantitative Data Analysis

3.1 Population and Sample Size Determination

The World Bank reported that, in 2014, 78% of the country's population over 15 years of age had a bank account. 41% of the accounts were for formal saving and 15% of them were for formal borrowing; therefore, in this study, the researcher decided to select Thai customers who are over 15 years of age and living in Bangkok as the population.

According to the Official Statistic Registration Systems, there were 4,649,576 people over 15 years old in year 2015. The size of the sample group was determined based on Lindeman, Merenda and Gold (1980) and Weiss (1972) who indicated that the sample size should be calculated by the ratio of the sample unit and the number of parameters or variables (at least 20 samples per each variable).

Based on the conceptual framework model, there were 13 variables as shown in Figure 3.1 below. The researcher was to collect the data from 48 samples for each variable and thus the size of the sample group was 624 samples.

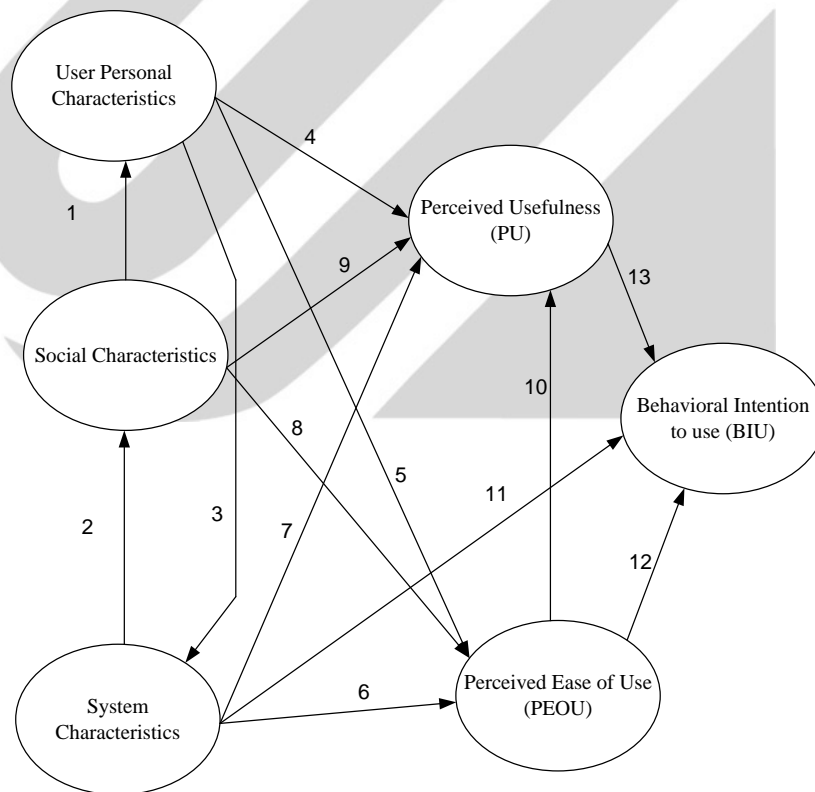


Figure 3.1 Parameters or Variables for Sample Sizing

3.2 Research Instrument Design

Adams, Khan, Raeside and White (2007) explained, “Quantitative research is used in almost every sphere of life, such as in clinical, biological, epidemiological, sociological and business research.” Regarding the use of different research methods primarily about social scientific research, Dr. Beatriz Reyes-Foster (2013) stated, “Quantitative research is really good for answering broad questions about very large groups of people if researchers want to know something specific about a particular population.”. According to Mojtahed, Nunes and Peng (2011), explored that TAM originated from positivistic quantitative study (Davis, 1989), quantitative methodology is generally adopted in research projects that apply the TAM model (Wu, 2009). Many researchers who conducted research related to mobile technology application adopted their quantitative approach (Abu-Dalbouh, 2013; Mojtahed, Nunes & Peng, 2011; Zhou, 2011; Amoroso & Watanabe, 2012; Alsamydai, 2014; Al-Jabri, 2015; Phonthanukitithaworn et al., 2015).

As previous research on new payment and banking services used quantitative method, this study used a quantitative method. The instrument used in this study was a research questionnaire for data collection. The survey questions were designed based on the proposed conceptual framework and the hypotheses developed from the theory of technology acceptance model (TAM) and related research.

The questionnaire included 5-rating scale questions which were divided into six dimensions as follows:

First Dimension: 14 questions related to user personal characteristics

Second Dimension: 14 questions related to social characteristics

Third Dimension: 35 questions related to system characteristics

Fourth Dimension: 6 questions related to perceived usefulness (PU)

Fifth Dimension: 6 questions related to perceived ease of use (PEOU)

Sixth Dimension: 5 questions related to behavioral intention to use (BIU)

For Part 1 – Part 6, the questions were close ended and each answer represented the score from each respondent as follows:

Strong agree	=	5 points
Agree	=	4 points
Uncertain	=	3 points
Disagree	=	2 points
Strongly disagree	=	1 point

The level of attitude was be divided into 5 classess as defined as follows:

$$\begin{aligned} \text{The width of class interval} &= \frac{\text{Highest value} - \text{Lowest value}}{\text{Number of classes}} \\ &= \frac{5 - 1}{5} = 0.80 \end{aligned}$$

The width of class interval was 0.80; therefore, the criteria of the average scores were used to interpret the meaning as follows:

<u>Average Score</u>	<u>Meaning</u>
4.21 – 5.00	Strongly agree
3.41 – 4.20	Agree
2.61 – 3.40	Uncertain
1.81 – 2.60	Disagree
1.00 – 1.80	Strongly disagree

The survey questions were organized in a suitable format and sequence for quality testing as shown in APPENDIX A.

3.3 Tests of Measurement and Quality

Adams, Khan, Raeside and White (2007) explained, “Three criteria are generally used for testing and evaluating measurements of variables and ensuring the quality of data, research design methods and the overall accuracy of study results. These criteria are known as reliability, validity and generalisability. These are very important, both in qualitative as well as in quantitative research.”

Since the instrument used in this study was a survey questionnaire, the quality of questions was essential. They needed to be developed and undergone both validity test and reliability test.

The content validity was important as it could indicate the ability of the selected questions to reflect the variables of the construct. In constructing a questionnaire, it was necessary to select each question of which its content was related to the topic and objectives of this study. Therefore, the researcher designed the constructs and question items based on the previous studies as defined in Table 3.1.

Adams, Khan, Raeside and White (2007) explained, “Construct validity is the hardest to understand. This type of validity is conducted to ensure there is a relationship between how the researcher operationalized concepts in the study to the actual causal relationship that he/she is trying to study.” Bartholomew, Steele, Galbraith and Moustaki (2008) explained that factor analysis was related to principal component analysis (PCA). Therefore, the researcher conducted a validity test in order to determine significant variables. Jolliffe (2002) introduced the oldest and best known techniques of multivariate analysis invented in 1901 by Karl Pearson. He stated, “The central idea of principal component analysis (PCA) is to reduce the dimensionality of a dataset consisting of a large number of interrelated variables, while retaining as much as possible of the variation present in the data set. This is achieved by transforming to a new set of variables, the principal components (PCs), which are uncorrelated, and which are ordered so that the first *few* retain most of the variation present in *all* of the original variables.”

3.3.1 Validity Test

Adams, Khan, Raeside and White (2007) explained that validity was the strength of conclusions, inferences or propositions. It involved the degree of accuracy of measurement. The construct validity test was conducted to confirm the validity of survey questions as reported in Chapter 4. Adams, Khan, Raeside and White (2007) explained, “Construct validity is the hardest to understand. This type of validity is conducted to ensure there is a relationship between how the researcher operationalized concepts in the study to the actual causal relationship that he/she is trying to study.”

Table 3.1: Constructs and Sources of Question Items

Construct	Definition and Item	Adapted from
First Dimension	User Personal Characteristics	
<u>Computer attitude</u>	is defined as an individual's positive or negative feeling about performing computer behavior.	Amoroso & Watanabe (2012)
1.	Transferring money through PromptPay is a good idea.	Park (2009)
2.	Transferring money through PromptPay is a wise idea.	Park (2009)
3.	I am positive towards the PromptPay system.	Park (2009)
4.	Using PromptPay would make it easier to do my transactions.	Researcher
<u>Trust</u>	is defined as the customers' relative confidence in the PromptPay services.	Al-Jabri (2015)
1.	PromptPay is trustworthy.	Al-Jabri (2015)
2.	PromptPay keeps its promise.	Al-Jabri (2015) Zhou (2011)
3.	PromptPay has a high level of integrity.	Researcher
4.	Trust in PromptPay affects my perceived usefulness of PromptPay.	Researcher
5.	Trust in PromptPay affects my perceived ease of use of PromptPay.	Researcher
6.	Trust in PromptPay affects my perceived risk of the PromptPay system.	Researcher
<u>Experience</u>	is defined as an individual's experience in which technical support of new technology being examined.	Alsamydai (2014)
1.	My experience affects my perceived usefulness of PromptPay.	Alsamydai (2014)
2.	My experience affects my perceived ease of use of PromptPay.	Researcher
3.	My experience affects my perceived risk of the PromptPay system.	Researcher
4.	My experience affects my perceived compatibility of the PromptPay system.	Researcher

Table 3.1: Constructs and Sources of Question Items (Cont.-)

Construct	Definition and Item	Adapted from
Second Dimension	Social Characteristics	
<u>Subjective norms</u>	is defined as an individual's attention to and being influenced by the opinions of people who are important to him/her while considering PromptPay.	Phonthanukitithaworn (2015)
1.	What PromptPay stands for is important for me as a customer.	Park (2009)
2.	I like using PromptPay based on the similarity of my values and societal values underlying its use.	Park (2009)
3.	My subjective norms affect my perceived usefulness of PromptPay.	Researcher
4.	My subjective norms affect my perceived ease of use of PromptPay.	Researcher
<u>Social influence</u>	is defined as an individual's perceptions affected by others who believe that he/she should use PromptPay.	Amoroso & Watanabe (2012)
1.	People who influence my behavior think that I should use the PromptPay.	Bjoern, Elena & Ralf (2012)
2.	People who are important to me think that I should use the PromptPay.	Bjoern, Elena & Ralf (2012)
3.	A high proportion of people in my social environment use the PromptPay.	Bjoern, Elena & Ralf (2012)
4.	In general, my peers have supported the use of PromptPay.	Bjoern, Elena & Ralf (2012)
5.	My social influence affects my perceived usefulness of PromptPay.	Researcher
6.	My social influence affects my perceived ease of use of PromptPay.	Researcher

Table 3.1: Constructs and Sources of Question Items (Cont.-)

Construct	Item	Adapted from
Second Dimension	Social Characteristics (Continued)	
<u>Social pressure</u>	is defined as motivation of an individual who believes you should use PromptPay to obtain a higher social status or a more important position in the society.	Kwon & Chidambaram (2000)
1.	My relatives' or friends' or work colleagues' pressure affects my behavioral intention to use PromptPay.	Researcher
2.	Using PromptPay release me from social pressure.	Researcher
3.	My social pressure affects my perceived usefulness of PromptPay.	Researcher
4.	My social pressure affects my perceived ease of use of PromptPay.	Researcher
Third Dimension	System Characteristics	
<u>System accessibility</u>	is defined as an individual with physical access to the PromptPay system, or the ability to retrieve the desired information from the PromptPay system.”	Djamasbi, Tullis, Girouard, Hebner, Krol & Terranova (2006)
1.	I have no difficulty accessing PromptPay.	Park (2009)
2.	I have no difficulty using PromptPay.	Researcher
3.	I have no difficulty to retrieve the desired information from PromptPay.	Researcher
4.	My system accesibility affects my perceived usefulness of PromptPay.	Researcher
5.	My system accesibility affects my perceived ease of use of PromptPay.	Researcher
6.	My system accesibility affects my intention to use PromptPay.	Researcher

Table 3.1: Constructs and Sources of Question Items (Cont.-)

Construct	Item	Adapted from
Third Dimension	System Characteristics (Cont.-)	
<u>Access cost</u>	is defined as the use PromptPay services involving costs, such as service fees and communication fees or benefits of using PromptPay services that do not offer value for money.	Phonthanukitithaworn (2015)
1.	Using PromptPay is cheaper than other services.	Researcher
2.	Using PromptPay will help me save cost for my money transactions.	Researcher
3.	Access cost affects my perceived usefulness of PromptPay.	Researcher
4.	Access cost affects my perceived ease of use of PromptPay.	Researcher
5.	Access cost affects my intention to use PromptPay.	Researcher
<u>Compatibility</u>	is defined as a service perceived as consistent with customers' existing values, beliefs, habits and needs for money transactions.	Al-Jabri (2014)
1.	Using PromptPay is compatible with most aspects of my money transactions.	Al-Jabri (2015) Lin (2011)
2.	Using PromptPay fits my lifestyle.	Al-Jabri (2015)
3.	Using PromptPay fits well with the way I engage in transactions.	Al-Jabri (2015)
4.	Compatibility affects my perceived usefulness of PromptPay.	Researcher
5.	Compatibility affects my perceived ease of use of PromptPay.	Researcher
6.	Compatibility affects my intention to use PromptPay.	Researcher

Table 3.1: Constructs and Sources of Question Items (Cont.-)

Construct	Item	Adapted from
<u>Convenience</u>	is defined as an individual's preference for convenient money transaction services, in terms of place, time and execution.	Hsu & Chang (2013)
1.	It would be more convenience to use PromptPay for my money transaction.	Researcher
2.	It would be faster to use PromptPay for my money transaction.	Researcher
3.	I can use PromptPay anywhere and anytime.	Researcher
4.	Convenience affects my perceived usefulness of PromptPay.	Researcher
5.	Convenience affects my perceived ease of use of PromptPay.	Researcher
6.	Convenience affects my behavioral intention to use PromptPay.	Researcher
<u>Perceived risk</u>	is defined as "the probability or possibility that a customer might incur losses in the form of financial losses or personal account information by using PromptPay services.	Al-Jabri (2015)
1.	I feel safe providing personal information over the PromptPay system.	Al-Jabri (2015)
2.	I am confident to use PromptPay because other people are unable to access my account.	Al-Jabri (2015)
3.	I feel secure sending sensitive information across the PromptPay system.	Al-Jabri (2015)
4.	When transferring money using PromptPay, I am certain that my money is secure.	Al-Jabri (2015)
5.	Perceived risk does not affect my perceived usefulness of PromptPay.	Al-Jabri (2015)
6.	Perceived risk does not affect my perceived ease of use of PromptPay.	Researcher
7.	Perceived risk does not affect my intention to use PromptPay.	Researcher

Table 3.1: Constructs and Sources of Question Items (Cont.-)

Construct	Item	Adapted from
Third Dimension	System Characteristics (Cont.-)	
<u>System quality</u>	is defined as the ability of the information system to conduct transactions accurately and reliably.”	Alsamydai (2014)
1.	Accurate transactions are important to my decision to adopt new payment systems.	Researcher
2.	Reliable transactions are important to my decision to adopt new payment systems.	Researcher
3.	System quality affects my perceived usefulness of PromptPay.	Researcher
4.	System quality affects my perceived ease of use of PromptPay.	Researcher
5.	System quality affects my intention to use PromptPay.	Researcher
Fourth Dimension	Perceived Usefulness (PU) is defined as the degree to which an individual believes that using PromptPay would enhance his/her productivity and performance in conducting payment transactions.	
1.	Using PromptPay for my money transactions would enable me to accomplish the tasks more quickly.	Davis (1989) Al-Jabri (2015)
2.	Using PromptPay would enhance my effectiveness on the job.	Davis (1989)
3.	Using PromptPay would make it easier to do my money transactions.	Davis (1989) Al-Jabri (2015)
4.	I would find PromptPay useful.	Al-Jabri (2015) Lee (2009)
5.	Overall, using PromptPay is advantageous.	Al-Jabri (2015)
6.	Perceived usefulness affects my behavioral intention to use PromptPay.	Researcher

Table 3.1: Constructs and sources of question items (Cont.-)

Construct	Item	Adapted from
Fifth Dimension	Perceived Ease of Use (PEOU) is defined as “the degree to which an individual believes that using PromptPay would be free of physical and mental effort.	
1.	Learning to use PromptPay would be easy for me.	Davis (1989) Al-Jabri (2015)
2.	I would find PromptPay easy to use to accomplish my money transaction tasks.	Davis (1989) Al-Jabri (2015)
3.	I would find PromptPay flexible to interact with.	Davis (1989) Al-Jabri (2015)
4.	I would find PromptPay easy to use.	Davis (1989)
5.	Perceived ease of use affects my perceived usefulness of PromptPay.	Researcher
6.	Perceived ease of use affects my behavioral intention to use PromptPay.	Researcher
Sixth Dimension	Behavioral Intention to Use (BIU) is defined as a customer's likelihood to engage in using PromptPay.”	
1.	I intend to use PromptPay as my first choice.	Davis (1989)
2.	I intend to use PromptPay frequently because it is more convenient and faster.	Davis (1989)
3.	I intend to use PromptPay because it is suitable for my lifestyle.	Davis (1989)
4.	I intend to use PromptPay because I feel confident in its system quality.	Davis (1989)
5.	I intend to use PromptPay because it is promoted by my organization/bank/government.	Davis (1989)

3.3.2 Reliability Test

According to Adams, Khan, Raeside & White (2007), “Reliability estimates the consistency of the measurement or more simply, the degree to which an instrument measures the same way each time it is used under the same conditions with the same subjects. Reliability is essentially about consistency. That is, if we measure something many times and the result is always the same, then we can say that our measurement instrument is reliable” (p. 235-236).

Reliability test was conducted as the second step after revising the research questionnaire according to the validity test results obtained at the first step of the development stage. Then an initial survey was tested with a small group of samples online. The main purpose of the reliability test was to ensure that the questionnaire was clear to the respondents and could be completed properly in a reasonable time. The coefficient alpha was defined according to Cronbach’s alpha method and it was widely used as a lower bound estimate of the reliability of a psychometric test to consider whether the level of reliability was high enough and suitable enough or not. When the value of Cronbach's alpha, was higher than 0.7, it meant that a question is adequately reliable and acceptable. After passing the quality tests, the questions were re-fined and re-organized in a suitable format and sequence.

Finally, the research questionnaire was translated into Thai for the actual survey to ensure that the respondents clearly understand all the questions (Zhou, 2011). The reliability test results were shown in APPENDIX B.

3.4 Data Collection Procedure

Adams, Khan, Raeside and White (2007) defined the term “survey” any research method, such as questionnaires, focus group dicussion, telephone and face-to-face interviews or any other suitable techniques, used to gather information from a group of respondents. In this study, the researcher used an online questionnaire to approach potential 624 respondents from May 2017 to June 2017.

The research procedure included the following tasks.

- 1) Conducting an online questionnaire
- 2) Analyzing the data and testing the hypotheses
- 3) Concluding and making recommendations

According to Adams, Khan, Raeside and White (2007), there were two phases of collecting data. The pre-test was conducted in the first phase and the main study was completed in the second phase.

3.4.1 Pre-testing Phase

The researcher conducted a pre-tested survey with the sub-samples. In this phase, the questionnaire was self-administered as it was distributed to 30 respondents in May 2017.

The pre-tested survey was conducted to test the wording of the questions, the sequence and layout of the questionnaire, the fieldwork arrangement and the analysis procedure. Therefore, the researcher used a small-scale pre-test study to investigate the errors in data collection. Other benefits were the opportunities to train fieldworkers, evaluate the questionnaire and seek feedback from respondents.

3.4.2 Main Study Phase

The researcher used a structured survey questionnaire to collect the data from the samples, potential 624 respondents who were Thai customers over 15 years of age and living in five districts in Bangkok from May 2017 to June 2017.

3.5 Quantitative Data Analysis

Structural equation modeling (SEM) was a powerful technique used to combine complex path models with latent variables or factors. It was widely used in behavioral sciences. According to Wothke (2010), SEM analytics showed which ones fit and where there were redundancies and helped pinpoint what particular model aspects were in conflict with the data. The purpose of SEM was to study complex relationships among variables and where some variables could be hypothetical or unobserved.

According to Saleh (2006), the structural equation modeling (SEM) technique was adopted for the confirmatory factor analysis using LISREL 8.72. SEM was widely used as a quantitative data analytical technique which estimated and tested theoretical relationships between/among latent and/or observed variables as well as combined regression and factor analysis. SEM was also a path analytical method for handling multiple relationships and assessing relationships from exploratory analysis to confirmatory analysis.

Therefore, the researcher used SEM to test the proposed model in this study. The researcher analyzed the variables as follows:

1. Check the completeness of responses, sort out the uncompleted responses and assign codes to the completed responses.
2. Input the data and compute using LISREL 8.72.
3. Analyze the data regarding all dimensions included in the questionnaire, using descriptive statistics, means (\bar{x}) and standard deviations (SD).
4. Analyze the data to test the normality of the data set, using a statistical method, skewness and kurtosis. A general rule of thumb was as follows:
 - 4.1 Skewness was a measure of symmetry of the probability distribution or a random variable about its mean. If skewness was 0, the data were perfectly symmetrical.
 - If skewness was less than -1 or greater than 1, the distribution was highly skewed.
 - If skewness was between -1 and -0.5 or between 0.5 and 1, the distribution was moderately skewed.
 - If skewness was between -0.5 and 0.5, the distribution was approximately symmetric.
 - 4.2 Kurtosis was a measure of whether the data were heavy-tailed or light-tailed relative to a normal distribution. Kurtosis for a normal distribution was 3. The positive kurtosis indicated a heavy-tailed distribution and negative kurtosis indicated a light-tailed distribution.
5. Refine the data prior to the confirmatory factor analysis using the Pearson's product-moment correlation coefficient (r) to measure the linear correlation

between two variables X and Y. It had a value between +1 and -1, where 1 was total positive linear correlation, 0 was no linear correlation, and -1 was total negative linear correlation as the following criteria.

- If $r = 0.81 - 1.00$ meant very high linear correlation
- If $r = 0.61 - 0.80$ meant high linear correlation
- If $r = 0.41 - 0.60$ meant moderate linear correlation
- If $r = 0.21 - 0.40$ meant low linear correlation
- If $r = 0.01 - 0.20$ meant very low linear correlation
- If $r = 0$ meant no linear correlation

This data refining was conducted to check whether the data set was in accordance with the conditions or not. The correlation value of each two variables prior to path analysis should fall in between 0.3 and 0.8; otherwise, it would cause the multi collinearity trouble.

6. Conduct factor analysis to investigate variable relationships. Kaiser-Meyer-Olkin (KMO) test was carried out to measure whether the distribution of values was adequate to conduct factor analysis. KMO varied from 0 to 1, and KMO overall should be 0.60 or higher to proceed with factor analysis. The p-value should be less than 0.05, so that the correlation matrix was not an identity matrix. Regarding a rule of thumb, each variable should have a factor loading from +0.4 to -0.4 onto one of the factors in order to be considered important.
7. Conduct confirmatory factor analysis (CFA) to construct the validity between the observed latent variables and latent variables created by the researcher. This was considered the first step to assess the proposed measurement model in the structural equation model.
8. Evaluate the data-model fit using the goodness-of-fit model to locate statistics to determine whether the model fitted to the empirical data or suggested how model would be good fit to the data.

The detailed information about the fit indices was given below.

8.1 Chi-square statistics

Chi-square measured the significance of the difference between two structural equation models of the same data, in which one model was a nested subset of the other. Mainly, Chi-square difference was the standard test statistic for comparing a modified model with the original model. If Chi-square difference showed non-significant difference between the unconstrained original model and the nested, constrained modified model, then the modification was accepted. For the studies using larger samples, it tended to give significant values.

8.2 Goodness-of-fit index (GFI)

GFI was based on the ratio of the sum of the squared differences between the observed and reproduced matrices to the observed variances. GFI ranged from 0 to 1, the values exceeding 0.9 indicated a good fit to the empirical data.

8.3 Adjusted goodness-of-fit index (AGFI)

AGFI was a variant of GFI for the degrees of freedom of a model relative to the number of variables. Like GFI, AGFI tended to be larger as sample size increases correspondingly. AGFI ranged from 0 to 1, the values exceeding 0.9 indicated a good fit to the empirical data.

8.4 Comparative fit index (CFI)

CFI was also known as the Bentler Comparative Fit Index. CFI analyzed the model fit by examining the discrepancy between the data and the hypothesized model, while adjusting for the issues of sample size inherent in the chi-squared test of model fit, and the normed fit index. CFI values were ranged from 0 to 1, with larger values indicating better fit. CFI value of 0.9 or larger was considered to indicate acceptable model fit.

8.5 Standardized root mean square residual (SRMR)

SRMR was average difference between the predicted and observed variances and covariances in the model, based on standardized residuals. SRMR was ranged from 0 to 1, the values lower than 0.05 was indicative

of acceptable model fit. The smaller the SRMR, the better the model fit and if SRMR was equal to 0 then model fit was perfect.

8.6 Root mean square error of approximation (RMSEA)

RMSEA was also called RMS or RMSE or discrepancy per degree of freedom. Like SRMR, RMSEA was ranged from 0 to 1, the values lower than 0.05 was indicative of acceptable model fit. The smaller the RMSEA, the better the model fit and if RMSEA was equal to 0 then model fit was perfect.

8.7 Critical N (CN)

CN was critical N or size of samples which could be acceptable for conformity test. The general rule of thumb indicated that the appropriated samples should have CN of more than 200.

8.8 Model modification

Model modification was determined by the modification indices which clearly indicated for the researcher to add or cut off path between each variable in order to adjust model good fit to the data. The researcher was also primarily determined to modify the model by considering the empirical correlations based on the theory of TAM and various research.

CHAPTER 4

RESEARCH FINDINGS

4.1 Overview of Research Findings

The study of technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok adopted the structural equation modeling (SEM) for data analysis to study the causalities among all parameters constructed in each model.

A variety of model-fit measures were used to assess the model's overall goodness-of-fit: the ratio of Chi-square test value (χ^2) to degree-of-freedom (df) was 1.971. According to criteria, the ratio should be lower than 2; therefore, the result passed the benchmark, which meant that the sample size was appropriate to degree of freedom. The goodness-of-fit index (GFI) was 0.96, which was greater than the 0.90 benchmark suggested by Bentler. The adjusted goodness-of-fit index (AGFI) was 0.95, greater than the 0.90 benchmark. The result passed the benchmark, which meant that the adjusted structural equation model, greater than 90%, corresponded with the empirical dataset. The sample size was appropriate to degree of freedom. The comparative fit index (CFI) was 0.98, which was greater than the 0.90 benchmark suggested by Bentler. The standardized root mean square residual (SRMR) was 0.036, making it lower than the recommended value of 0.05 by Bentler. The root mean square error of approximation (RMSEA) was 0.047, making it lower than the recommended value of 0.05 by Bentler. The Critical N (CN) was 621 greater or equal to the 200 benchmark suggested by Bentler. Therefore, all statistics met the recommended values, meaning that the structural equation model according to the technology acceptance model (TAM) corresponded with the empirical dataset. The direct, indirect, and total effects of all factors were summarized in Table 4.31.

After the great amount of data was collected, they were analyzed with assistance of software engineering. The researcher calculated a correlation coefficient between all variables. The statistical significance of the correlations was further determined. The descriptive and inferential data analysis, were analyzed and presented in the current chapter and further concluded in chapter 5 respectively.

As reported in this research, the proposed model with minor modifications fit better with the data. The findings supported most of the hypotheses relationships in the modified competing quantitative model. These findings extended the application of the underpinned theory in explaining the behavioral intention to use PromptPay of customers in Bangkok according to the TAM and contributing to the body of knowledge. Implications of the findings were discussed in this chapter.

4.2 Hypothesis Testing

The results of hypotheses testing based on the results of all respondents were presented into seven main parts as follows:

- Part 1 Analysis of the significance level of the User Personal Characteristics, Social Characteristics, System Characteristics, Perceived Usefulness, Perceived Ease of Use and Behavioral Intention to Use PromptPay by mean and standard deviation
- Part 2 Data refining prior to Confirmatory Factor Analysis
- Part 3 Factor analysis
- Part 4 Confirmatory Factor for exogenous and endogenous latent variables
- Part 5 Confirmatory Factor Analysis (CFA) for TAM towards behavioral intention to use PromptPay of customers in Bangkok according to model of the TAM
- Part 6 Testing hypotheses for three predicted exogenous latent variables: (1) user personal characteristics, (2) social characteristics, (3) system characteristics by regression analysis
- Part 7 Path analysis to identify direct and indirect effects, including the total effects.

Legend for analysis

n	=	number of samples
\bar{x}	=	average of samples
S.D.	=	Standard deviation
t	=	t – test value
F	=	F – test value
SKEW	=	Skewness value
KUS	=	Kurtosis value
r	=	Pearson’s correlation coefficient
SE	=	Standard error

R^2	=	Squared multiple correlation
χ^2	=	Chi - square test value
df	=	degree of freedom
p-value	=	level of statistical significance
ξ	=	exogenous latent variable (Ksi)
η	=	endogenous latent variable (Eta)
γ	=	causal effects from ξ to η
GFI	=	Goodness of Fit Index
AGFI	=	Adjusted Goodness of Fit Index
CFI	=	Comparative Fit Index
SRMR	=	Standardized Root Mean Square Residual
RMSEA	=	Root Mean Square Error of Approximation
CN	=	Critical N
DE	=	Direct Effects
IE	=	Indirect Effects
TE	=	Total Effects

Abbreviation of this study

Latent Variables

BIU	means	Behavioral Intention of Use
PEOU	means	Perceived Ease of Use
PU	means	Perceived Usefulness
SYSTEM	means	System Characteristics
SOCIAL	means	Social Characteristics
USE	means	User Personal Characteristics

Empirical Variables

CA	means	Computer Attitude
TR	means	Trust
EXP	means	Experience
SBJN	means	Subjective Norm
SOCII	means	Social Influence
SOCIP	means	Social Pressure
SYSAC	means	System Accessibility
ACCOST	means	Access Cost
COMPT	means	Compatibility
CONVEN	means	Convenience
PERCRSK	means	Perceived Risk
SYSQUL	means	System Quality
PUF1	means	question no.1 PromptPay accomplish Transaction quicker
PUF2	means	question no.2 PromptPay enhance effectiveness
PUF3	means	question no.3 PromptPay make transaction easier
PUF4	means	question no.4 PromptPay is useful
PUF5	means	question no.5 PromptPay is advantageous
PUF6	means	question no.6 Affects behavioral intention to use
PEOU1	means	question no.1 PromptPay easy to learn

PEOU2	means question no.2 Easy to accomplish transaction tasks
PEOU3	means question no.3 Flexible to interact with
PEOU4	means question no.4 PromptPay easy to use
PEOU5	means question no.5 Affects perceived usefulness
PEOU6	means question no.6 Affects behavioral intention to use
BHAIU1	means question no.1 Be first choice
BHAIU2	means question no.2 Convenient and Faster
BHAIU3	means question no.3 Suitable with lifestyle
BHAIU4	means question no.4 Confident in system quality
BHAIU5	means question no.5 Promoted by Organization

Part 1 Analysis of the significance level of the User Personal Characteristics, Social Characteristics, System Characteristics, Perceived Usefulness, Perceived Ease of Use and Behavioral Intention to Use PromptPay by mean and standard deviation

Table 4.1: Measurement of the variables of user personal characteristics

User Personal Characteristics	Mean	Standard Deviation	Significance level
1. Computer Attitudes	3.705	0.858	High
2. Trust	3.411	0.744	High
3. Experience	3.570	0.814	High
Total	3.562	0.805	High

Findings, as revealed in Table 4.1, suggested that the samples' user personal characteristics to use new technology were at a high significance level (mean = 3.562). Computer attitudes was at the highest significance level (mean = 3.705) while experience was at the second highest significance level (mean = 3.570), and trust was at the lowest significance level (mean = 3.411).

Table 4.2: Mean and standard deviation of computer attitude of user personal characteristics

Computer Attitudes	Mean	Standard Deviation	Significance Level
1. Transferring money through PromptPay is a good idea.	3.773	0.966	High
2. Transferring money through PromptPay is a wise idea.	3.638	0.965	High
3. I am positive towards the PromptPay system.	3.559	0.970	High
4. Using PromptPay would make it easier to do my transactions.	3.849	0.977	High
Total	3.705	0.970	High

As revealed in Table 4.2, findings suggested that the samples with computer attitudes to use new technology were at a high significance level (mean = 3.705). When considering each construct, findings suggested that using PromptPay makes transaction easier showed the highest significance level (mean = 3.849) while money transfer through PromptPay being a good idea and money transfer through PromptPay being a wise idea showed high significance levels at 3.773 and 3.638 mean scores, respectively. The samples' positive towards the PromptPay system also showed a high significance level (mean = 3.559).

Table 4.3: Mean and standard deviation of trust of user personal characteristics

Trust	Mean	Standard Deviation	Significance Level
1. PromptPay is trustworthy.	3.296	0.972	Moderate
2. PromptPay keeps its promise.	3.367	0.863	Moderate
3. PromptPay has a high level of integrity.	3.291	0.911	Moderate
4. Trust in PromptPay affects my perceived usefulness of PromptPay.	3.448	0.938	High
5. Trust in PromptPay affects my perceived ease of use of PromptPay.	3.556	0.936	High
6. Trust in PromptPay affects my perceived risk of the PromptPay system.	3.510	0.948	High
Total	3.411	0.928	High

As revealed in Table 4.3, findings suggested that the samples who had trust in the use of new technology were at a high significance level (mean = 3.411). When considering each construct, findings suggested that those trust in PromptPay affecting PEOU showed the highest significance level (mean = 3.556) while that affecting perceived risk of PromptPay showed high a significance level at the 3.510 mean score and that affecting PU showed high a significance level at the 3.448 mean score. The samples who think that PromptPay keeps its promise showed a moderate significance level (mean = 3.367). The samples who think that PromptPay is trustworthy showed a moderate significance level (mean = 3.296) and that PromptPay has a high level of integrity showed a moderate significance level (mean = 3.291).

Table 4.4: Mean and standard deviation of experience of user personal characteristics

Experience	Mean	Standard Deviation	Significance Level
1. My experience affects my perceived usefulness of PromptPay.	3.585	0.937	High
2. My experience affects my perceived ease of use of PromptPay.	3.630	0.936	High
3. My experience affects my perceived risk of the PromptPay system.	3.543	0.904	High
4. My experience affects my perceived compatibility of the PromptPay system.	3.525	0.904	High
Total	3.570	0.920	High

As revealed in Table 4.4, findings suggested that samples had experience in using new technology at a high significance level (mean = 3.570). When considering each construct, findings showed that experience affected PEOU of PromptPay at the highest significance level (mean = 3.630) while the effects on PU of PromptPay showed a high significance level (mean = 3.585). The samples' experience that affected perceived risk of PromptPay showed a high significance level (mean = 3.543), and that affecting perceived compatibility of PromptPay showed a high significance level (mean = 3.525).

Table 4.5: Measurement of the variables of social characteristics

User Personal Characteristics	Mean	Standard Deviation	Significance Level
1. Subjective Norm	3.425	0.801	High
2. Social Influence	3.138	0.911	Moderate
3. Social Pressure	2.719	1.021	Moderate
Total	3.094	0.911	Moderate

As shown in Table 4.5, findings suggested that the samples had social characteristics to decide whether or not to PromptPay at a moderate significance level (mean = 3.094). When considering each variable, findings suggested that subjective norm had the highest significance level (mean = 3.425), while social influence had a moderate significance level (mean = 3.138), and social pressure had a moderate significance level (mean = 2.719), respectively.

Table 4.6: Mean and standard deviation of subjective norms of social characteristics

Experience	Mean	Standard Deviation	Significance Level
1. What PromptPay stands for is important for me as a customer.	3.324	1.041	Moderate
2. I like using PromptPay based on the similarity of my values and societal values underlying its use.	3.237	1.057	Moderate
3. My subjective norms affect my perceived usefulness of PromptPay.	3.578	0.924	High
4. My subjective norms affect my perceived ease of use of PromptPay.	3.562	0.941	High
Total	3.425	0.991	High

As revealed in Table 4.6, findings suggested that the samples' social characteristics determined the use of PromptPay in terms of subjective norm at a high significance level (mean = 3.425). When considering each construct, findings suggested that the samples' subjective norm affected PU of PromptPay at the highest significance level (mean = 3.578), while affecting PEOU at a high significance level (mean = 3.562). Those who viewed PromptPay based on similarity of their values and society values underlying its use was at a high significance level (mean = 3.237), and those who thought what PromptPay stands to others for was important to them as customers showed a moderate significance level (mean = 3.324).

Table 4.7: Mean and standard deviation of social influence of social characteristics

Experience	Mean	Standard Deviation	Significance Level
1. People who influence my behavior think that I should use the PromptPay.	3.143	1.120	Moderate
2. People who are important to me think that I should use the PromptPay.	3.105	1.093	Moderate
3. A high proportion of people in my social environment use the PromptPay.	3.114	1.078	Moderate
4. In general, my peers have supported the use of PromptPay.	2.995	1.071	Moderate
5. My social influence affects my perceived usefulness of PromptPay.	3.219	1.029	Moderate
6. My social influence affects my perceived ease of use of PromptPay.	3.250	1.057	Moderate
Total	3.138	1.075	Moderate

As shown in Table 4.7, findings suggested that the samples' social characteristics determined the use of PromptPay in terms of social influence at a moderate significance level (mean = 3.138). When considering each construct, findings suggested that the samples' social influence affected PEOU showed a moderate significance level (mean = 3.250), while affecting PU at a moderate significance level (mean = 3.219). People who influence the samples' behavior think that they should use PromptPay showed a moderate significance level (mean = 3.143), A high proportion of people from the samples' social environment used the PromptPay at a moderate significance level (mean = 3.114), People who were important to the samples think that they should use PromptPay was at a moderate significance level (mean = 3.105), and in general, the samples' peers supported the use of PromptPay at a moderate significance level (mean = 2.995).

Table 4.8: Mean and standard deviation of social pressure of social characteristics

Experience	Mean	Standard Deviation	Significance Level
1. My relatives' or friend's or work colleagues' pressure affects my behavioral intention to use PromptPay.	2.720	1.123	Moderate
2. Using PromptPay release me from social pressure.	2.585	1.119	Moderate
3. My social pressure affects my perceived usefulness of PromptPay.	2.763	1.122	Moderate
4. My social pressure affects my perceived ease of use of PromptPay.	2.807	1.139	Moderate
Total	2.719	1.126	Moderate

As shown in Table 4.8, findings suggested that the samples' social characteristics determined the use of PromptPay in terms of social pressure at a moderate significance level (mean = 2.719). When considering each construct, findings suggested that social pressure affected PEOU at a moderate significance level (mean = 2.807), while social pressure affected PU at a moderate significance level (mean = 2.763). The samples' relatives, friends or colleagues' pressure affected their BIU at a moderate significance level (mean = 2.720), and using PromptPay reduced social pressure at a moderate significance level (mean = 2.585).

Table 4.9: Measurement of the variables of system characteristics

User Personal Characteristics	Mean	Standard Deviation	Significance Level
1. System Accessibility	3.686	0.854	High
2. Access Cost	3.687	0.854	High
3. Compatibility	3.469	0.891	High
4. Convenience	3.681	0.864	High
5. Perceived Risk	3.074	0.947	Moderate
6. System Quality	3.722	0.847	High
Total	3.553	0.876	High

As shown in Table 4.9, findings suggested that the samples' system characteristics determined the use of PromptPay at a high significance level (mean = 3.553). When considering each variable, findings suggested that system quality had the highest significance level (mean = 3.722), while access cost had a high significance level (mean = 3.687), system accessibility had a high significance level (mean = 3.686), convenience had a high significance level (mean = 3.681), compatibility had a high significance level (mean = 3.469), and perceived risk had a moderate significance level (mean = 3.074), respectively.

Table 4.10: Mean and standard deviation of system accessibility of system characteristics

Experience	Mean	Standard Deviation	Significance Level
1. I have no difficulty accessing PromptPay.	3.647	0.975	High
2. I have no difficulty using PromptPay.	3.646	0.981	High
3. I have no difficulty to retrieve the desired information from PromptPay.	3.536	0.959	High
4. My system accessibility affects my perceived usefulness of PromptPay.	3.528	0.944	High
5. My system accessibility affects my perceived ease of use of PromptPay.	3.567	0.927	High
6. My system accessibility affects my intention to use PromptPay.	3.481	0.956	High
Total	3.568	0.957	High

As revealed in Table 4.10, findings suggested that the samples' system characteristics determined the use of PromptPay in terms of system accessibility at a high significance level (mean = 3.568). When considering each construct, findings suggested that the samples had no difficulty in accessing PromptPay at the highest significance level (mean = 3.647), while they had no difficulty in using PromptPay at a high significance level (mean = 3.646). System

accessibility affected the samples' PEOU at a high significance level (mean = 3.567). They had no difficulty in retrieving needed information from PromptPay at a high significance level (mean = 3.536). System accessibility affected the samples' PU at a high significance level (mean = 3.528) while affecting BIU at a high significance level (mean = 3.481), respectively.

Table 4.11: Mean and standard deviation of access cost of system characteristics

Experience	Mean	Standard Deviation	Significance Level
1. Using PromptPay is cheaper than other services.	3.826	0.996	High
2. Using PromptPay will help me save cost for my money transactions.	3.836	0.980	High
3. Access cost affects my perceived usefulness of PromptPay.	3.604	0.994	High
4. Access cost affects my perceived ease of use of PromptPay.	3.578	0.982	High
5. Access cost affects my intention to use PromptPay.	3.585	0.984	High
Total	3.686	0.987	High

As shown in Table 4.11, findings suggested that the samples' system characteristics determined the use of PromptPay in terms of access cost at a high significance level (mean = 3.686). When considering each construct, findings suggested that using PromptPay helps the samples save cost for money transaction at the highest significance level (mean = 3.836) while using PromptPay is cheaper than the other services showed a high significance level (mean = 3.826). Access cost affects PU at a high significance level (mean = 3.604), affects BIU at a high significance level (mean = 3.585), and affects PEOU at a high significance level (mean = 3.578), respectively.

Table 4.12: Mean and standard deviation of compatibility of system characteristics

Experience	Mean	Standard Deviation	Significance Level
1. Using PromptPay is compatible with most aspects of my money transactions.	3.488	0.991	High
2. Using PromptPay fits my lifestyle.	3.417	1.028	High
3. Using PromptPay fits well with the way I engage in transactions.	3.443	1.056	High
4. Compatibility affects my perceived usefulness of PromptPay.	3.501	0.934	High
5. Compatibility affects my perceived ease of use of PromptPay.	3.504	0.958	High
6. Compatibility affects my intention to use PromptPay.	3.461	0.991	High
Total	3.469	0.993	High

As shown in Table 4.12, findings suggested that the samples' system characteristics determined the use of PromptPay in terms of compatibility at a high significance level (mean = 3.469). When considering each construct, findings suggested that compatibility affected PEOU at the highest significance level (mean = 3.504), while affecting PU at a high significance level (mean = 3.501). Using PromptPay is compatible with most aspects of the samples' money transaction at a high significance level (mean = 3.488). Using PromptPay fits well with the way the samples like to engage in transaction at a high significance level (mean = 3.443). Compatibility affects the samples' BIU at a high significance level (mean = 3.461), and using PromptPay fits their lifestyle at a high significance level (mean = 3.417), respectively.

Table 4.13: Mean and standard deviation of convenience of system characteristics

Experience	Mean	Standard Deviation	Significance Level
1. It would be more convenience to use PromptPay for my money transaction.	3.680	1.012	High
2. It would be faster to use PromptPay for my money transaction.	3.609	1.032	High
3. I can use PromptPay anywhere and anytime.	3.807	0.970	High
4. Convenience affects my perceived usefulness of PromptPay.	3.663	0.994	High
5. Convenience affects my perceived ease of use of PromptPay.	3.692	0.956	High
6. Convenience affects my behavioral intention to use PromptPay.	3.636	0.988	High
Total	3.681	0.992	High

As shown in Table 4.13, findings suggested that the samples' system characteristics determined the use of PromptPay in terms of convenience at a high significance level (mean = 3.681). When considering each construct, findings suggested that PromptPay can be used anywhere and anytime at the highest significance level (mean = 3.807) while convenience affected PEOU at a high significance level (mean = 3.692). Using PromptPay would be more convenient for the samples' money transaction at a high significance level (mean = 3.680). Convenience affected the samples' PU at a high significance level (mean = 3.663) while affecting BIU at a high significance level (mean = 3.636). It would be faster to use PromptPay for money transaction at a high significance level (mean = 3.609).

Table 4.14: Mean and standard deviation of perceived risk of system characteristics

Experience	Mean	Standard Deviation	Significance Level
1. I feel safe providing personal information over the PromptPay system.	2.994	1.112	Moderate
2. I am confident to use PromptPay because other people are unable to access my account.	3.052	1.081	Moderate
3. I feel secure sending sensitive information across the PromptPay system.	2.976	1.096	Moderate
4. When transferring money using PromptPay, I am certain that my money is secure.	3.169	1.083	Moderate
5. Perceived risk does not affect my perceived usefulness of PromptPay.	3.118	1.084	Moderate
6. Perceived risk does not affect my perceived ease of use of PromptPay.	3.132	1.037	Moderate
7. Perceived risk does not affect my intention to use PromptPay.	3.077	1.057	Moderate
Total	3.074	1.078	Moderate

As shown in Table 4.14, findings suggested that the samples' system characteristics determined the use of PromptPay in terms of perceived risk at a moderate significance level (mean = 3.074). When considering each construct, findings suggested that the samples were certain that their money was secured when they transferred money using PromptPay at a moderate significance level (mean = 3.169) while perceived risk does not affect their PEOU at a moderate significance level (mean = 3.132). Then perceived risk does not affect their PU at a moderate significance level (mean = 3.118), Perceived risk does not affect their BIU at a moderate significance level (mean = 3.077). The samples were confident with using PromptPay because other people are unable to access their account at a moderate significance level (mean = 3.052). The samples felt safe to provide their personal information over the PromptPay at a moderate significance level (mean = 2.994), and felt secure to send sensitive information across the PromptPay at a moderate significance level (mean = 2.976), respectively.

Table 4.15: Mean and standard deviation of system quality of system characteristics

Experience	Mean	Standard Deviation	Significance Level
1. Accurate transactions are important to my decision to adopt new payment systems.	3.715	0.949	High
2. Reliable transactions are important to my decision to adopt new payment systems.	3.752	0.954	High
3. System quality affects my perceived usefulness of PromptPay.	3.725	0.957	High
4. System quality affects my perceived ease of use of PromptPay.	3.670	0.978	High
5. System quality affects my intention to use PromptPay.	3.750	0.949	High
Total	3.722	0.957	High

As shown in Table 4.15, findings suggested that the samples' system characteristics determined the use of PromptPay in terms of system quality at a high significance level (mean = 3.722). When considering each construct, findings suggested that reliable transaction of the new system was important to the samples' decision to adopt the new payment system at a highest significance level (mean = 3.752), while system's quality affected their BIU at a high significance level (mean = 3.750). System's quality affected their PU at a high significance level (mean = 3.725). Accurate transaction of the new system was important to their decision to adopt the new payment system at a high significance level (mean = 3.715), and system's quality affected their PEOU at a high significance level (mean = 3.670), respectively.

Table 4.16: Measurement of the variables of perceived usefulness

Experience	Mean	Standard Deviation	Significance Level
1. Using PromptPay for my money transactions would enable me to accomplish the tasks more quickly.	3.704	0.953	High
2. Using PromptPay would enhance my effectiveness on the job.	3.546	0.964	High
3. Using PromptPay would make it easier to do my money transactions.	3.760	0.933	High
4. I would find PromptPay useful.	3.713	0.913	High
5. Overall, using PromptPay is advantageous.	3.678	0.922	High
6. Perceived usefulness affects my behavioral intention to use PromptPay.	3.618	0.937	High
Total	3.670	0.937	High

As shown in Table 4.16, findings suggested that the samples' PU may increase the productivity and efficiency in using PromptPay at a high significance level (mean = 3.670). PromptPay would make it easier to perform money transaction at a highest significance level (mean = 3.760) while PromptPay was found useful at a high significance level (mean = 3.713). Using PromptPay for money transaction would enable task completion more quickly at a high significance level (mean = 3.704). Overall, using PromptPay is advantageous at a high significance level (mean = 3.678). PU affected BIU at a high significance level (mean = 3.618), and using PromptPay would enhance the effectiveness of the job at a high significance level (mean = 3.546), respectively.

Table 4.17: Measurement of the variables of perceived ease of use

Experience	Mean	Standard Deviation	Significance Level
1. Learning to use PromptPay would be easy for me.	3.697	0.956	High
2. I would find PromptPay easy to use to accomplish my money transaction tasks.	3.684	0.930	High
3. I would find PromptPay flexible to interact with.	3.422	0.953	High
4. I would find PromptPay easy to use.	3.676	0.933	High
5. Perceived ease of use affects my perceived usefulness of PromptPay.	3.620	0.935	High
6. Perceived ease of use affects my behavioral intention to use PromptPay.	3.585	0.954	High
Total	3.614	0.944	High

As shown in Table 4.17, findings suggested that the samples' PEOU was at a highsignificance level (mean = 3.614). Learning to use PromptPay would be easy for the samples at the highest significance level (mean = 3.697), while they would find it easy to use PromptPay to accomplish their money transaction tasks at a high significance level (mean = 3.684). PromptPay was found easy to use at a high significance level (mean = 3.676). PEOU affected PU at a high significance level (mean = 3.620). PEOU affected BIU at a high significance level (mean = 3.585), and PromptPay would be found flexible to interact with at a high significance level (mean = 3.422).

Table 4.18: Measurement of the variables of behavioral intention to use

Experience	Mean	Standard Deviation	Significance Level
1. I intend to use PromptPay as my first choice.	3.169	1.115	Moderate
2. I intend to use PromptPay frequently because it is more convenient and faster.	3.259	1.099	Moderate
3. I intend to use PromptPay because it is suitable for my lifestyle.	3.266	1.087	Moderate
4. I intend to use PromptPay because I feel confident in its system quality.	3.217	1.110	Moderate
5. I intend to use PromptPay because it is promoted by my organization/bank/government.	3.300	1.113	Moderate
Total	3.242	1.105	Moderate

As shown in Table 4.18, findings suggested that samples' behavioral intention to use PromptPay at a moderate significance level (mean = 3.242). When considering each construct, findings suggested that the samples intended to use PromptPay because it was promoted by their organization, bank, or government at a moderate significance level (mean = 3.300), while they intended to use it because it was suitable for their lifestyle at a moderate significance level (mean = 3.266). They intended to use PromptPay frequently because it was more convenient and gives a faster service at a moderate significance level (mean = 3.259) whereas they used it because they felt confident in its quality at a moderate significance level (mean = 3.217), and used it as their first choice at a moderate significance level (mean = 3.169), respectively.

Part 2 Data refining prior to confirmatory factor analysis

This part 2 is for data refining prior to path analysis in order to check whether the data was in accordance with conditions or not. The correlation value of each two variables prior to path analysis should be between 0.3 and 0.8, or it would cause the multi-collinearity trouble.

Table 4.19: Correlations matrix among predictor variables for CFA

Corre.	CA	TR	EXP	SBJN	SOCII	SOCIP	SYSAC	AC COST	COM PT	CON VEN	PERC RSK	SYS QUL	PUF1	PUF2	PUF3	PUF4
CA	1.000															
TR	0.735	1.000														
EXP	0.596	0.699	1.000													
SBJN	0.621	0.680	0.615	1.000												
SOCII	0.478	0.544	0.473	0.668	1.000											
SOCIP	0.321	0.398	0.309	0.524	0.699	1.000										
SYSAC	0.576	0.568	0.563	0.575	0.478	0.339	1.000									
AC COST	0.037	0.072	0.031	0.070	0.076	0.046	0.022	1.000								
COMPT	0.651	0.668	0.618	0.649	0.552	0.404	0.704	0.050	1.000							
CONVEN	0.630	0.620	0.632	0.634	0.518	0.361	0.684	0.061	0.782	1.000						
PERCRSK	0.591	0.661	0.453	0.631	0.567	0.501	0.522	0.033	0.656	0.573	1.000					
SYSQUL	0.508	0.537	0.573	0.521	0.376	0.254	0.616	0.022	0.647	0.657	0.431	1.000				
PUF1	0.546	0.514	0.506	0.527	0.429	0.310	0.604	0.041	0.642	0.670	0.460	0.595	1.000			
PUF2	0.574	0.540	0.512	0.575	0.429	0.366	0.594	0.042	0.654	0.634	0.549	0.567	0.778	1.000		
PUF3	0.615	0.563	0.570	0.560	0.425	0.267	0.656	0.029	0.685	0.708	0.471	0.635	0.812	0.742	1.000	
PUF4	0.606	0.584	0.579	0.580	0.436	0.284	0.673	0.014	0.697	0.677	0.531	0.660	0.686	0.700	0.783	1.000
PUF5	0.623	0.613	0.567	0.599	0.456	0.305	0.655	0.039	0.720	0.709	0.549	0.639	0.674	0.653	0.726	0.819
PUF6	0.588	0.590	0.543	0.598	0.469	0.313	0.633	0.033	0.697	0.700	0.559	0.636	0.640	0.672	0.705	0.748
PEOU1	0.543	0.563	0.621	0.532	0.377	0.254	0.575	0.012	0.625	0.641	0.457	0.622	0.561	0.524	0.622	0.606
PEOU2	0.570	0.600	0.634	0.561	0.424	0.296	0.620	-0.016	0.665	0.679	0.498	0.650	0.633	0.585	0.679	0.664
PEOU3	0.526	0.566	0.533	0.586	0.530	0.445	0.569	0.021	0.617	0.599	0.551	0.555	0.562	0.595	0.586	0.563
PEOU4	0.580	0.615	0.658	0.576	0.454	0.298	0.640	0.008	0.666	0.679	0.517	0.637	0.615	0.611	0.665	0.675
PEOU5	0.558	0.583	0.604	0.579	0.418	0.295	0.624	0.038	0.653	0.685	0.511	0.662	0.548	0.615	0.644	0.654
PEOU6	0.575	0.580	0.557	0.563	0.448	0.302	0.617	0.066	0.647	0.690	0.559	0.615	0.556	0.596	0.642	0.653

Table 4.19: Correlations matrix among predictor variables for CFA (Continued)

Corre.	CA	TR	EXP	SBJN	SOCII	SOCIP	SYSAC	AC COST	COM PT	CON VEN	PERC RSK	SYS QUL	PUF1	PUF2	PUF3	PUF4
BHAIU1	0.630	0.618	0.502	0.592	0.545	0.435	0.562	0.043	0.684	0.621	0.669	0.464	0.490	0.552	0.541	0.580
BHAIU2	0.633	0.608	0.494	0.599	0.507	0.398	0.569	0.059	0.685	0.645	0.636	0.481	0.546	0.582	0.582	0.592
BHAIU3	0.609	0.617	0.525	0.610	0.504	0.416	0.563	0.083	0.709	0.642	0.651	0.493	0.537	0.579	0.588	0.624
BHAIU4	0.559	0.587	0.461	0.545	0.491	0.415	0.518	0.043	0.662	0.585	0.679	0.484	0.470	0.540	0.501	0.565
BHAIU5	0.542	0.566	0.466	0.579	0.577	0.507	0.500	0.023	0.602	0.552	0.621	0.482	0.497	0.572	0.479	0.548

Table 4.19: Correlations matrix among the predictor variables for CFA (Continued)

Corre	PUF5	PUF6	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5	PEOU6	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5
PUF5	1.000												
PUF6	0.774	1.000											
PEOU1	0.650	0.594	1.000										
PEOU2	0.688	0.643	0.861	1.000									
PEOU3	0.584	0.587	0.622	0.676	1.000								
PEOU4	0.701	0.637	0.788	0.813	0.678	1.000							
PEOU5	0.660	0.694	0.650	0.706	0.645	0.742	1.000						
PEOU6	0.648	0.747	0.594	0.664	0.608	0.680	0.835	1.000					
BHAIU1	0.602	0.617	0.508	0.555	0.543	0.566	0.609	0.654	1.000				
BHAIU2	0.618	0.649	0.527	0.571	0.542	0.583	0.629	0.656	0.871	1.000			
BHAIU3	0.634	0.647	0.557	0.609	0.547	0.600	0.610	0.652	0.847	0.871	1.000		
BHAIU4	0.592	0.621	0.494	0.557	0.550	0.580	0.614	0.643	0.772	0.773	0.793	1.000	
BHAIU5	0.584	0.583	0.449	0.498	0.546	0.511	0.596	0.589	0.672	0.697	0.707	0.758	1.000

As shown in Table 4.19, findings suggested that all correlations between all variables were between -0.016 to 0.783, which was not over the common cutoff value of 0.8 (Berry & Feldman 1985). An examination of the results of these tests indicated that multi-collinearity was not a problem. Overall, the correlations were linearity in the same direction, except that only the correlation between PEOU2 and ACCOST was found in the different direction at -0.016 and except that only the correlation coefficient value between PUF5 and PUF4 was over 0.8.

Table 4.20: Data refining prior to confirmatory factor analysis

Variable	Min	Max	Mean	Skewness		Kurtosis		Kolmogorov Z	P - value
				Statistic	Std. Error	Statistic	Std. Error		
CA	1	5	3.705	-0.534	0.098	0.230	0.196	2.855	0.000
TR	1	5	3.411	-0.291	0.098	0.529	0.196	2.735	0.000
EXP	1	5	3.570	-0.484	0.098	0.673	0.196	2.812	0.000
SBJN	1	5	3.425	-0.471	0.098	0.624	0.196	3.129	0.000
SOCII	1	5	3.138	-0.315	0.098	-0.144	0.196	2.656	0.000
SOCIP	1	5	2.719	0.039	0.098	-0.612	0.196	2.847	0.000
SYSAC	1	5	3.686	-0.456	0.098	0.255	0.196	2.207	0.000
ACCOST	1	5	3.687	-0.464	0.099	0.269	0.197	2.197	0.000
COMPT	1	5	3.469	-0.380	0.098	0.111	0.196	2.684	0.000
CONVEN	1	5	3.681	-0.584	0.098	0.362	0.196	2.684	0.000
PERCRSK	1	5	3.074	-0.185	0.098	-0.184	0.196	2.697	0.000
SYSQUL	1	5	3.722	-0.538	0.098	0.352	0.196	3.222	0.000
PUF1	1	5	3.704	-0.465	0.098	-0.015	0.196	5.509	0.000
PUF2	1	5	3.546	-0.277	0.098	-0.231	0.196	4.938	0.000
PUF3	1	5	3.760	-0.523	0.098	0.092	0.196	5.840	0.000
PUF4	1	5	3.713	-0.576	0.098	0.299	0.196	6.381	0.000
PUF5	1	5	3.678	-0.518	0.098	0.208	0.196	6.070	0.000
PUF6	1	5	3.618	-0.446	0.098	0.007	0.196	5.886	0.000

Table 4.20: Data refining prior to confirmatory factor analysis (continued)

Variable	Min	Max	Mean	Skewness		Kurtosis		Kolmogorov Z	P - value
				Statistic	Std. Error	Statistic	Std. Error		
PEOU1	1	5	3.697	-0.406	0.098	-0.225	0.196	5.483	0.000
PEOU2	1	5	3.684	-0.348	0.098	-0.181	0.196	5.377	0.000
PEOU3	1	5	3.422	-0.123	0.098	-0.136	0.196	5.885	0.000
PEOU4	1	5	3.676	-0.342	0.098	-0.205	0.196	5.367	0.000
PEOU5	1	5	3.620	-0.411	0.098	-0.048	0.196	5.757	0.000
PEOU6	1	5	3.585	-0.416	0.098	-0.100	0.196	5.740	0.000
BHAIU1	1	5	3.169	-0.253	0.098	-0.553	0.196	4.698	0.000
BHAIU2	1	5	3.259	-0.278	0.098	-0.522	0.196	4.599	0.000
BHAIU3	1	5	3.266	-0.278	0.098	-0.398	0.196	4.838	0.000
BHAIU4	1	5	3.217	-0.281	0.098	-0.398	0.196	5.188	0.000
BHAIU5	1	5	3.300	-0.351	0.098	-0.410	0.196	4.761	0.000

The dataset was first tested for the SEM assumption, the univariate normality was ensured using skewness and kurtosis indicis. Skewness is a measure of symmetry, or more precisely, the lack of symmetry. A distribution, or dataset, is symmetric if it looks the same to the left and right of the center point. Kurtosis is a measure of whether the data is heavy-tailed or light-tailed relative to a normal distribution.

As shown in Table 4.20, the result of Skewness of the data set was found between -0.584 to 0.039, which did not exceed an absolute value of -3 to 3, and the result of Kurtosis of the data set was found between -0.612 to 0.673, which did not exceed an absolute value of -3 to 3, either.

Statistically, the Kolmogorov–Smirnov test (K–S test or KS test) is a nonparametric test of the equality of continuous, one-dimensional probability distributions that can be used to compare a sample with a reference probability distribution (one-sample K–S test), or to compare two samples (two-sample K–S test). As revealed in Table 4.20, the result of K–S test was found 0.000 p-value, which meant the possibility of the dataset was normally distributed and met the conditions of data refining prior to the confirmatory factor analysis.

Part 3 Factor analysis

Factor analysis was used to identify independent latent variables or independencies between observed variables in order to reduce the set of variables in the data set. Variables in the same factor should have high correlation either in positive or negative direction while variables in other factors should not have correlation or very low correlation which reduces the correlation between independent variables.

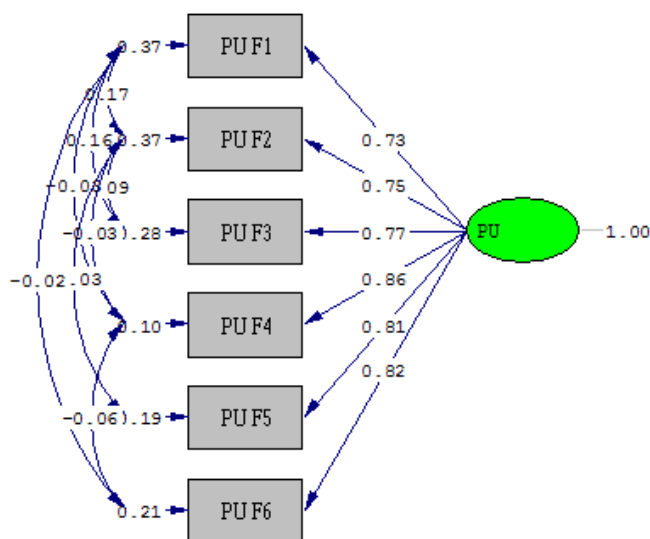
Kaiser-Meyer-Olkin (KMO) measures whether the distribution of values was adequate to be used in conducting the factor analysis. KMO varied from 0 to 1, and KMO overall should be 0.60 or higher to proceed with the factor analysis. The p-value should be less than 0.05 so that the correlation matrix was not an identity matrix. As a rule of thumb, each variable should have a factor loading +0.4 to -0.4 onto one of the factors in order to be considered important.

Table 4.21: Factor analysis result of fourth dimension: perceived usefulness

Code	Question	Factor Loading
PUF1	1. Using PromptPay in my money transaction would enable me to accomplish task more quickly.	0.870
PUF2	2. Using PromptPay would enhance my effectiveness of the job.	0.860
PUF3	3. Using PromptPay would make it easier to perform my money transaction.	0.905
PUF4	4. I would find PromptPay useful.	0.899
PUF5	5. Overall, using PromptPay is advantageous.	0.881
PUF6	6. Perceived Usefulness affects my behavioral intention to use PromptPay	0.851
	Initial Eigen values	4.640
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.003
	Bartlett's Test of Sphericity Approx. Chi-Square	326.46
	D.f.	69
	Sig.	.213

As shown in Table 4.21, the findings suggested KMO (Kaiser – Meyer-Olkin) (Chi-square) = 326.46 and P-value = .003, which was less than Alpha = 0.05. It meant that the data set was not adequate for conducting the factor analysis. Therefore, the researcher chose the confirmatory factor analysis for PU. The factor loading of each six questions was found

between 0.870 – 0.905. Thus, the researcher performed the first order confirmatory factor analysis as follows.



Chi-Square=2.90, df=1, P-value=0.08862, RMSEA=0.056

Figure 4.1 First Order Confirmatory Factor Analysis for Perceived Usefulness

As shown in Figure 4.1, it was found that Chi-square = 2.90, p-value = 0.056, which was greater than 0.05. It meant the confirmatory factor analysis was appropriate to be a latent variable of PU for predicting all six questions.

Table 4.22: Factor analysis result of fifth dimension: perceived ease of use

Code	Question	Factor Loading
PEOU1	1. Learning to use PromptPay would be easy for me.	0.869
PEOU2	2. I would find it easy to use PromptPay to accomplish my money transaction tasks.	0.909
PEOU3	3. I would find PromptPay flexible to interact with	0.807
PEOU4	4. I would find PromptPay easy to use.	0.905
PEOU5	5. Perceived ease of use affects my perceived usefulness of PromptPay.	0.879
PEOU6	6. Perceived ease of use affects my behavioral intention to use PromptPay.	0.839
	Initial Eigen values	4.528
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.012
	Bartlett's Test of Sphericity Approx. Chi-Square	341.19
	D.f.	72
	Sig.	.301

As shown in Table 4.22, the findings suggested KMO (Kaiser – Meyer-Olkin) (Chi-square) = 341.19 and P-value = .012, which was less than Alpha = 0.05. It meant that the data set was not adequate for conducting factor analysis. Therefore, the researcher chose the confirmatory factor analysis for PU. The factor loading of each six questions was found between 0.839 – 0.909. Thus, the researcher conducted the first order confirmatory factor analysis as follows.

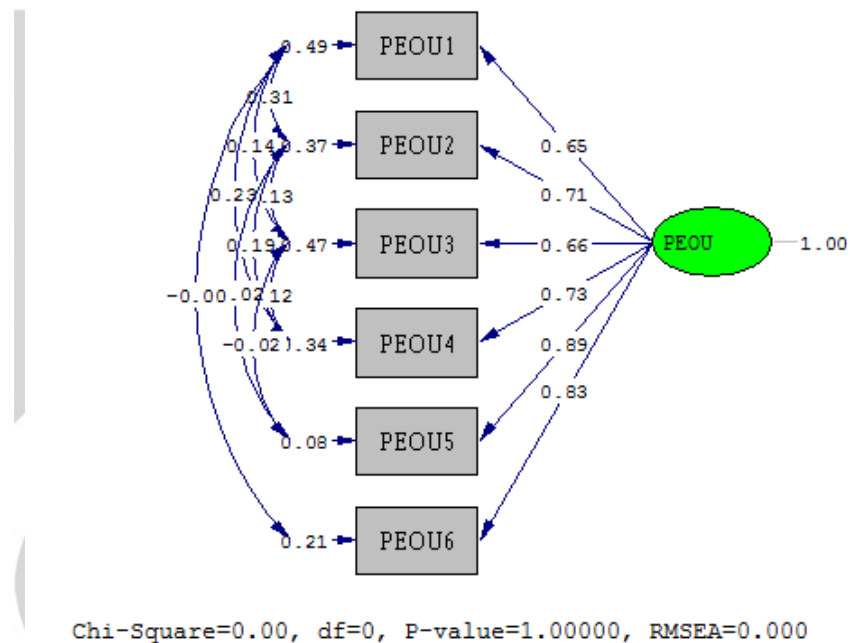


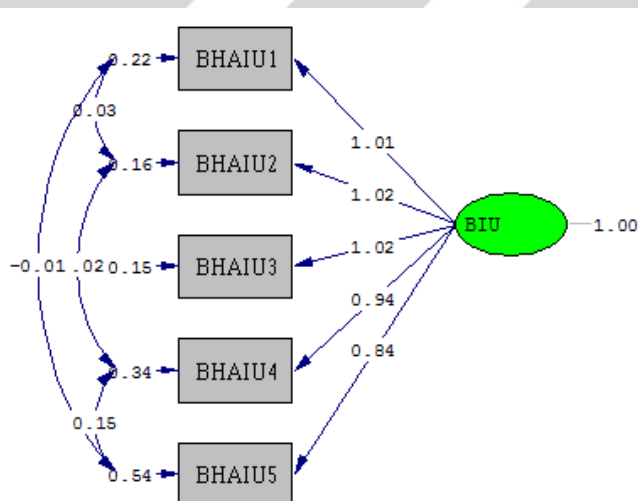
Figure 4.2 First Order Confirmatory Factor Analysis for Perceived Ease of Use

As shown in Figure 4.2, it was found that Chi-square = 2.90, p-value = 1.000, which was greater than 0.05. It meant that the confirmatory factor analysis was appropriate to be a latent variable of PEOU for predicting all six questions.

Table 4.23: Factor analysis result of sixth dimension: behavioral intention to use

Code	Question	Factor Loading
BHAIU 1	1. I intend to use PromptPay as my first choice.	0.921
BHAIU 2	2. I intend to use PromptPay frequently because it is more convenient and gives a faster service.	0.932
BHAIU3	3. I intend to use PromptPay because it is suitable for my lifestyle.	0.933
BHAIU4	4. I intend to use PromptPay because I feel confident in its quality.	0.903
BHAIU5	5. I intend to use PromptPay because it is promoted by my organization, bank, or government.	0.840
Initial Eigen values		4.110
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.027
Bartlett's Test of Sphericity Approx. Chi-Square		375.37
D.f.		93
Sig.		.217

As shown in Table 4.23, the findings suggested KMO (Kaiser – Meyer-Olkin) (Chi-square) = 375.37 and P-value = .027, which was less than Alpha = 0.05. It meant that the data set was not adequate for conducting factor analysis. Therefore, the researcher chose the confirmatory factor analysis for PU. The factor loading of each five questions was found between 0.840 – 0.933. Thus, the researcher carried out the first order confirmatory factor analysis as follows.



Chi-Square=0.36, df=1, P-value=0.54912, RMSEA=0.000

Figure 4.3 First Order Confirmatory Factor Analysis for Behavioral Intention to Use

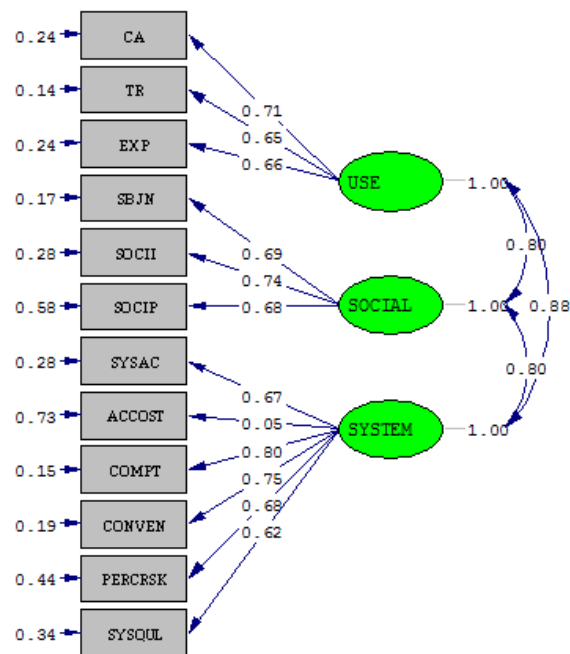
As shown in Figure 4.2, it was found that Chi-square = 2.90, p- value = 1.000, which was greater than 0.05, It meant that confirmatory factor analysis was appropriate to be a latent variable of BIU for predicting all five questions.

Part 4 Confirmatory Factor Analysis of Exogenous and Endogenous Latent Variables

In Part 4, confirmatory factor analysis of exogenous and endogenous latent variables was conducted by the researcher in order to predicte the empirical exogenous and endogenous variables. The empirical rule was often used in statistics for forecasting, especially when obtaining the right data was difficult. This confirmatory factor analysis was divided into 2 main parts, confirmatory exogenous variables and confrmatory endogenous variables.

Part 4.1 Confirmatory Exogenous Variables

The researcher conducted an analysis using LISREL 8.72 and the result was shown in Figure 4.4 below.



Chi-Square=434.74, df=48, P-value=0.00000, RMSEA=0.115

Figure 4.4 Result of Confirmatory Exogenous Variables before Model Adjustment

As shown in Figure 4.4, the findings suggested that Chi-square = 434.74, df = 48 and p-value = 0.000 which was less than 0.05. It meant that the model was not corresponding to the empirical data. The modification indices suggested an error covariance be added between all empirical variables, or 21 sets in total, in order to adjust the model to correspond to the empirical data as shown in Figure 4.5 below.

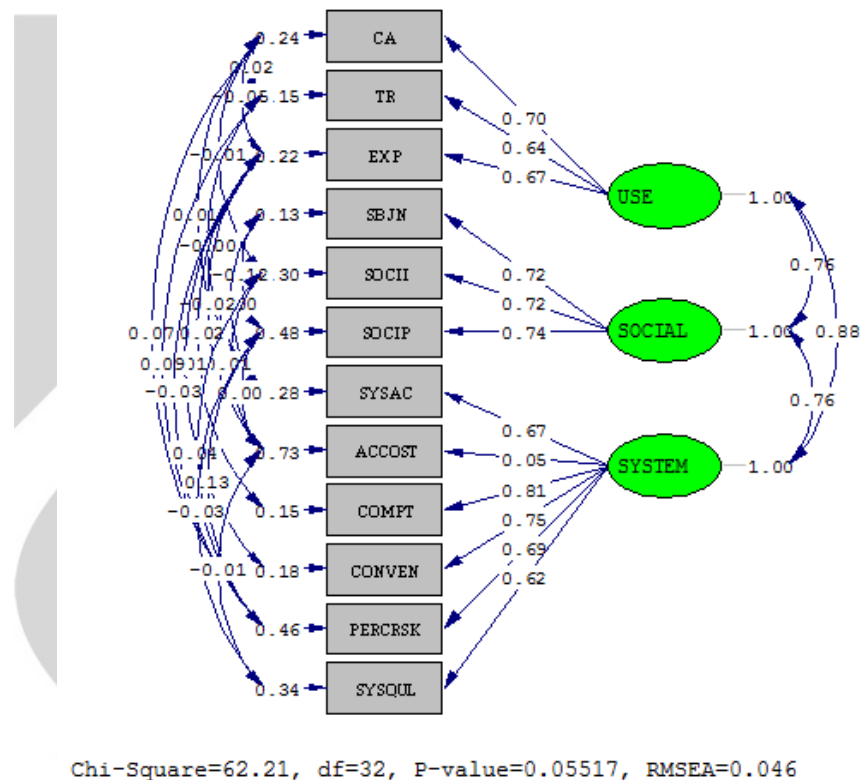


Figure 4.5 Result of Confirmatory Exogenous Variables after Model Adjustment

As shown in Figure 4.5, the findings suggested that Chi-square = 62.21, df = 32, and p-value = 0.5517 which was greater than 0.05. It meant that the model was corresponding to the empirical data; therefore, it passed the criteria as shown in Table 4.24 below.

Table 4.24: Goodness-of-Fit Measurements for Confirmatory Exogenous Variables after Model Adjustment

Fit Indices	Recommended value	Result value	Conclusion
Chi-Square/df	< 2	1.94	Passed
P-value	> 0.05	0.5517	Passed
NFI	> 0.90	0.99	Passed
CFI	> 0.90	0.99	Passed
GFI	> 0.90	0.98	Passed
AGFI	> 0.90	0.96	Passed
RMSEA	< 0.05	0.046	Passed
RMR	< 0.05	0.037	Passed
CN	> 200	765	Passed

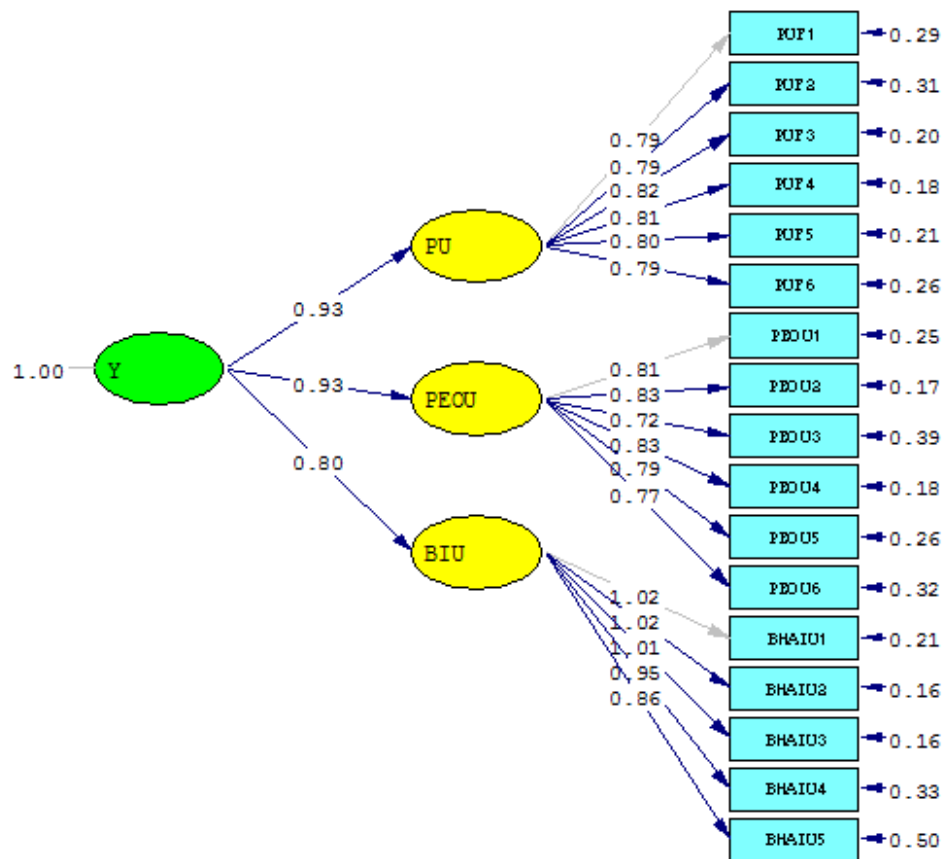
As shown in Table 4.24, findings suggested that the various statistics used were appropriate variables after the structural equation model was and passed the suggested benchmark. Therefore, the model analysis between empirical and theoretical data of exogenous variables was appropriate. Considering all statistics, the p-value = 0.5517, greater than alpha 0.05 means that the structural equation model (SEM) for hypothesis testing corresponded with the empirical dataset by considering all parameters as follows.

The various model-fit measures were used to assess the model's overall goodness-of-fit: the ratio of chi-square test value (χ^2) to degrees-of-freedom (df) = 1.94 while the criteria should be less than 2. The result passed the suggested benchmark, which meant that the sample size was appropriate with degree of freedom. The goodness-of-fit index (GFI) = 0.98, which was greater than the 0.90 benchmark suggested by Bentler. The adjusted goodness-of-fit index (AGFI) = 0.96, which was greater than the 0.90 benchmark. The result passed meaning that the adjusted structural equation model corresponded with the empirical dataset, greater than 90%. The samplesize was appropriate with degree of freedom, corresponding with the empirical dataset greater than 90%. The comparative fit index (CFI) was 0.99, which was greater than the 0.90 benchmark suggested by Bentler. The standardized root mean square residual (SRMR) was 0.037, making it lower than the recommended value of 0.05 by Bentler. The root mean square error of approximation (RMSEA) was 0.046, making it lower than the recommended value of 0.05 by Bentler. The

Critical N (CN) was 765 greater or equal to 200 benchmark suggested by Bentler. Therefore, all statistics met the recommended values. Therefore, the structural equation model according to Technology Acceptance Model (TAM) corresponded with the empirical dataset.

Part 4.2 Confirmatory endogenous variables

The researcher adopted the statistical program LISREL 8.72 for data analysis. The result was shown in Figure 4.6 below.



Chi-Square=824.53, df=116, P-value=0.00000, RMSEA=0.108

Figure 4.6 Result of Confirmatory Endogenous Variables before Model Adjustment

As shown in Figure 4.6, findings suggested that Chi-square was 824.53, df was 116, and p-value was 0.000, which was less than 0.05. meaning that the model did not correspond with the empirical data, considering the modification indices suggestion and modification indices suggestion to add an error covariance between all empirical variables in a total of 19 sets in order to adjust the model to be correspondent with the empirical data as shown in Figure 4.7 below.

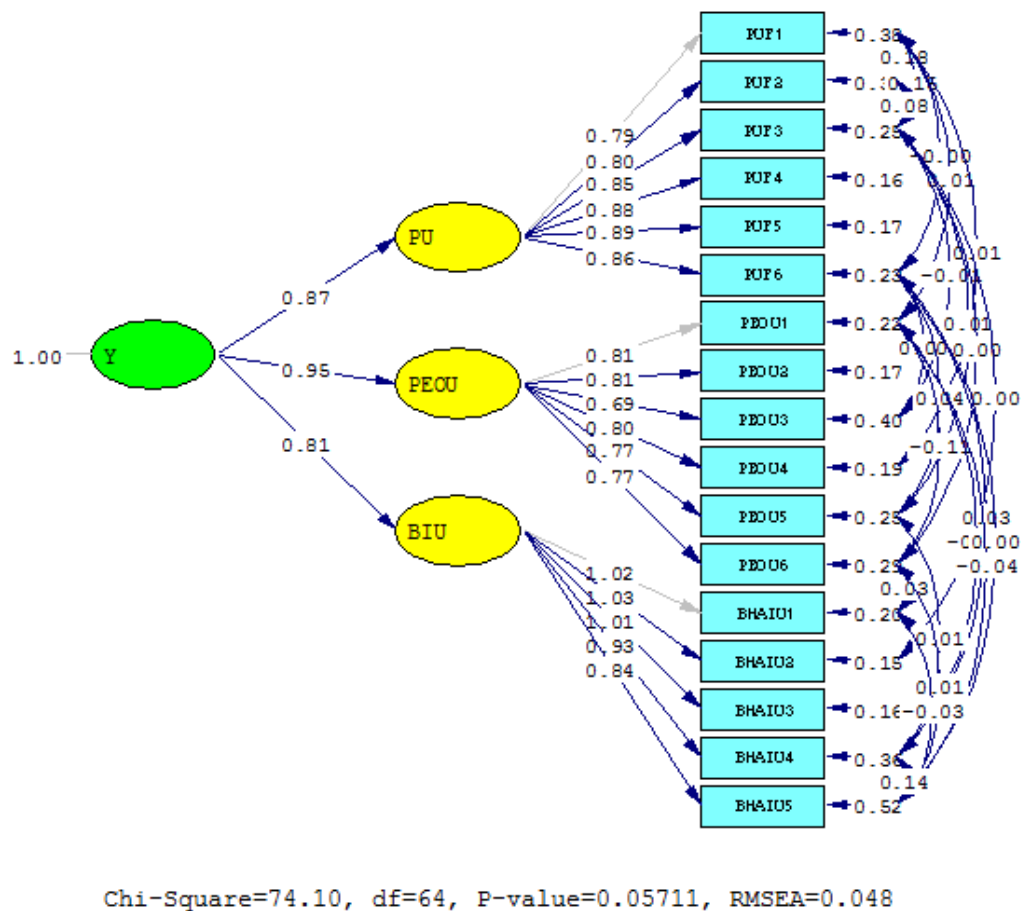


Figure 4.7 Result of Confirmatory Endogenous Variables after Model Adjustment

As shown in Figure 4.7, findings suggested that Chi-square was 74.10, df was 64, and p-value was 0.5711, which was greater than 0.05, meaning that the model corresponded with the empirical data; therefore, they passed all of the parameters shown in Table 4.25 below.

Table 4.25: Goodness-of-fit measurements for confirmatory endogenous variables before model adjustment

Fit Indices	Recommended value	Result value	Conclusion
Chi-Square/df	< 2	1.157	Passed
P-value	> 0.05	0.5711	Passed
NFI	> 0.90	0.99	Passed
CFI	> 0.90	0.99	Passed
GFI	> 0.90	0.96	Passed
AGFI	> 0.90	0.95	Passed
RMSEA	< 0.05	0.048	Passed
RMR	< 0.05	0.039	Passed
CN	> 200	771	Passed

As shown in Table 4.25, findings suggested that the various statistics used were appropriate variables after the structural equation model was and passed the suggested benchmark. Therefore, the model analysis between empirical and theoretical data of exogenous variables was appropriate. Considering all statistics, the p-value = 0.5517, greater than alpha 0.05 means that the structural equation model (SEM) for hypothesis testing corresponded with the empirical dataset by considering all parameters as follows.

The various model-fit measures were used to assess the model's overall goodness-of-fit: the ratio of chi-square test value (χ^2) to degrees-of-freedom (df) = 1.157 while the criteria should be less than 2. The result passed the suggested benchmark, which meant that the sample size was appropriate with degree of freedom. The goodness-of-fit index (GFI) = 0.96, which was greater than the 0.90 benchmark suggested by Bentler. The adjusted goodness-of-fit index (AGFI) = 0.95, which was greater than the 0.90 benchmark. The result passed meaning that the adjusted structural equation model corresponded with the empirical dataset, greater than 90%. The samplesize was appropriate with degree of freedom, corresponding with the empirical dataset greater than 90%. The comparative fit index (CFI) was 0.99, which was greater than the 0.90 benchmark suggested by Bentler. The standardized root mean square residual (SRMR) was 0.039, making it lower than the recommended value of 0.05 by Bentler. The root mean square error of approximation

(RMSEA) was 0.048, making it lower than the recommended value of 0.05 by Bentler. The Critical N (CN) was 771 greater or equal to 200 benchmark suggested by Bentler. Therefore, all statistics met the recommended values. Therefore, the structural equation model according to Technology Acceptance Model (TAM) corresponded with the empirical dataset.

Part 5 Confirmatory Factor Analysis (CFA) of Technology Acceptance Model (TAM) Towards Behavioral Intention to Use PromptPay of Customers in Bangkok According to Model of TAM

Before adjusting the model, the researcher combined the exogenous variables and endogenous variables as shown in Figure 4.8 below.

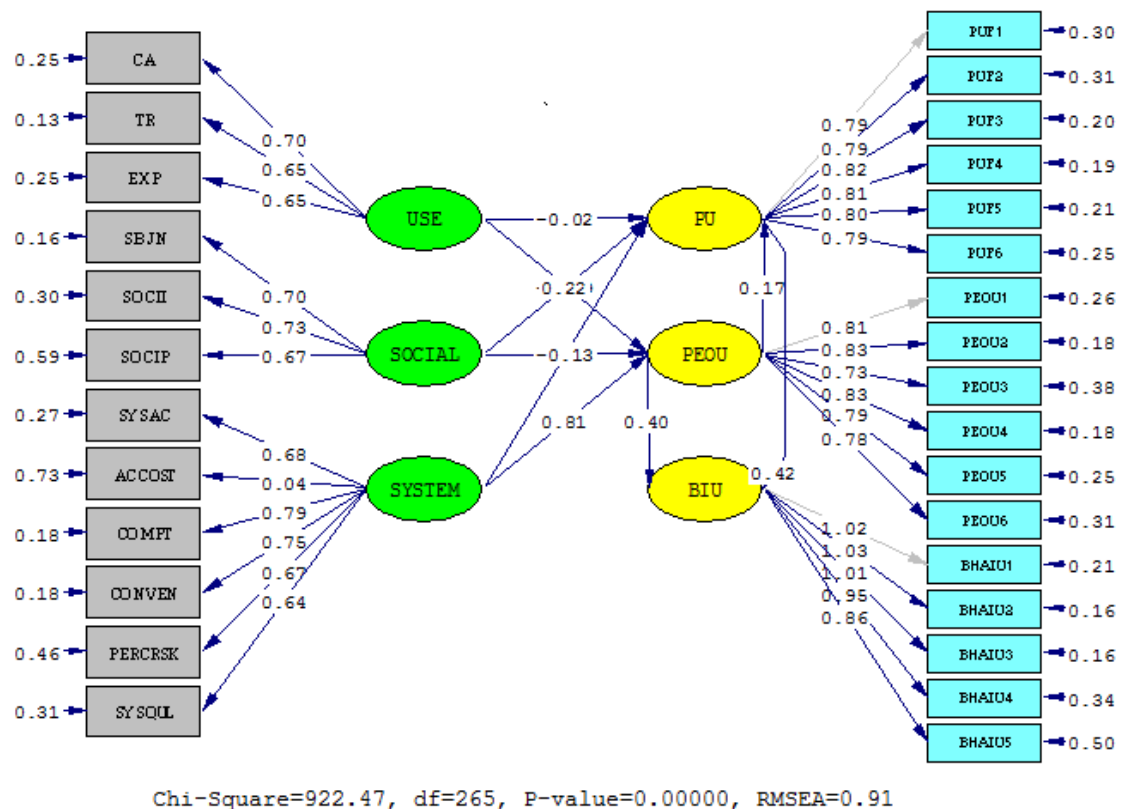


Figure 4.8 Confirmatory Factor Analysis (CFA) for Technology Acceptance Model (TAM) Towards Behavioral Intention to Use PromptPay of Customers in Bangkok According to Model of TAM before Model Adjustment

Figure 4.8 summarised the results of the structural equation modeling of TAM. The confirmatory modeling yielded consistency of the hypothesized causal relationships with the data (relative Chi-square = 922.47, df = 265 and p-value = 0.000) It meant that samples' empirical data were not corresponding with the theory of TAM; however, there was a possibility to correspond as the RMSEA value was close to 0.05.

Therefore, the researcher adjusted the structural model as suggested by the program in terms of SYSTEM, BIU, SOCIAL and BIU. As a result, the Chi-sqaure value was decreased. The Modification Indices suggested that the error covariance be decreased between exogenous variables and endogenous variables in a total of 18 sets, and the path be increased between all endogenous variables in a total of 14 sets in order to adjust the model to correspond with the empirical data as shown in Figure 4.9 below.

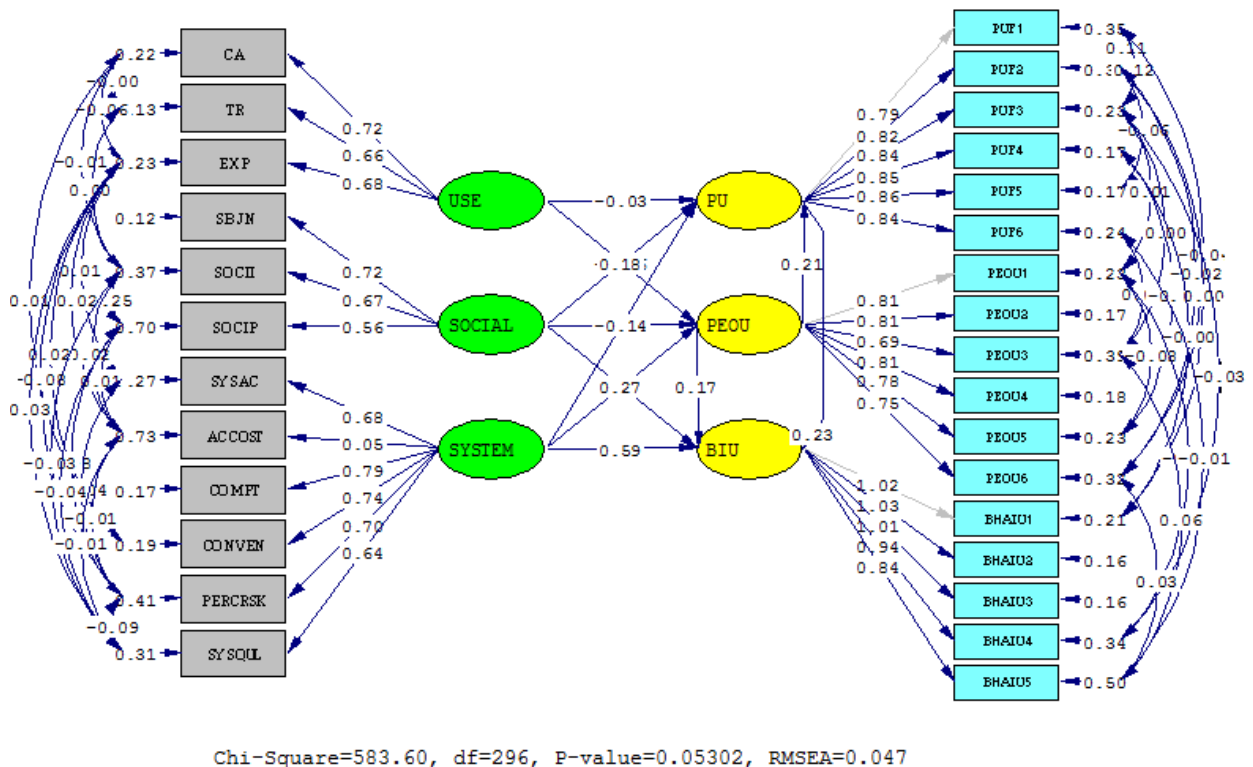


Figure 4.9 Confirmatory Factor Analysis (CFA) for Technology Acceptance Model (TAM) Towards Behavioral Intention to Use PromptPay of Customers in Bangkok According to Model of TAM after Model Adjustment

Figure 4.9 summarised the results of the structural equation modeling of TAM. The confirmatory modeling yielded consistency of the hypothesized causal relationships with the data (relative Chi-square = 583.60, df = 296 and p-value = 0.000). It meant that the technology acceptance model towards behavioral intention to use PromptPay of customers in Bangkok according to the theory of TAM corresponded with the empirical data set.

Table 4.26: Goodness-of-fit measurements for confirmatory factor analysis (CFA) for technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok according to technology acceptance model (TAM) after model adjustment

Fit indices	Recommended value	Result value	Conclusion
Chi-Square/df	< 2	1.971	Passed
P-value	> 0.05	0.5302	Passed
NFI	> 0.90	0.98	Passed
CFI	> 0.90	0.98	Passed
GFI	> 0.90	0.96	Passed
AGFI	> 0.90	0.95	Passed
RMSEA	< 0.05	0.047	Passed
RMR	< 0.05	0.036	Passed
CN	> 200	648	Passed

As shown in Table 4.26, findings suggested that the various statistics used were appropriate variables after the structural equation model was and passed the suggested benchmark. Therefore, the model analysis between empirical and theoretical data of exogenous variables was appropriate. Considering all statistics, the p-value = 0.5302, greater than alpha 0.05 means that the structural equation model (SEM) for hypothesis testing corresponded with the empirical dataset by considering all parameters as follows.

The various model-fit measures were used to assess the model's overall goodness-of-fit: the ratio of chi-square test value (χ^2) to degrees-of-freedom (df) = 1.971 while the criteria should be less than 2. The result passed the suggested benchmark, which meant that the sample size was appropriate with degree of freedom. The goodness-of-fit index (GFI)

= 0.96, which was greater than the 0.90 benchmark suggested by Bentler. The adjusted goodness-of-fit index (AGFI) = 0.95, which was greater than the 0.90 benchmark. The result passed meaning that the adjusted structural equation model corresponded with the empirical dataset, greater than 90%. The sample size was appropriate with degree of freedom, corresponding with the empirical dataset greater than 90%. The comparative fit index (CFI) was 0.98, which was greater than the 0.90 benchmark suggested by Bentler. The standardized root mean square residual (SRMR) was 0.036, making it lower than the recommended value of 0.05 by Bentler. The root mean square error of approximation (RMSEA) was 0.047, making it lower than the recommended value of 0.05 by Bentler. The Critical N (CN) was 648 greater or equal to 200 benchmark suggested by Bentler. Therefore, all statistics met the recommended values. Therefore, the structural equation model according to Technology Acceptance Model (TAM) corresponded with the empirical dataset.

Table 4.27 Examination of measurement weights of exogenous and endogenous variables

Variable	Kurtosis		Latent Variable	Error	R ²
	β	T-test			
CA	0.72	22.78	USE	0.22	0.70
TR	0.66	26.28	USE	0.13	0.77
EXP	0.68	23.77	USE	0.23	0.67
SBJN	0.72	26.21	SOCIAL	0.12	0.81
SOCII	0.67	20.33	SOCIAL	0.37	0.55
SOCIP	0.56	14.16	SOCIAL	0.70	0.31
SYSAC	0.68	23.29	SYSTEM	0.27	0.63
ACCOST	0.046	1.30	SYSTEM	0.73	0.029
COMPT	0.79	27.70	SYSTEM	0.17	0.78
CONVEN	0.74	26.50	SYSTEM	0.19	0.74
PERCRSK	0.70	20.91	SYSTEM	0.41	0.54
SYSQUL	0.64	21.64	SYSTEM	0.31	0.57

Table 4.27 Examination of measurement weights of exogenous and endogenous variables (continued)

Variable	Kurtosis		Latent Variable	Error	R2
	β	T-test			
PUF1	0.79	-	PU	0.35	0.62
PUF2	0.82	27.58	PU	0.32	0.66
PUF3	0.84	31.18	PU	0.23	0.73
PUF4	0.85	25.61	PU	0.17	0.79
PUF5	0.86	25.59	PU	0.17	0.80
PUF6	0.84	24.16	PU	0.24	0.73
PEOU1	0.81	-	PEOU	0.23	0.75
PEOU2	0.81	31.44	PEOU	0.17	0.80
PEOU3	0.69	22.95	PEOU	0.39	0.56
PEOU4	0.81	30.96	PEOU	0.18	0.79
PEOU5	0.78	24.81	PEOU	0.23	0.74
PEOU6	0.75	25.77	PEOU	0.32	0.65
BHAIU1	1.02	-	BIU	0.21	0.84
BHAIU2	1.03	40.3	BIU	0.16	0.87
BHAIU3	1.01	40.16	BIU	0.16	0.87
BHAIU4	0.94	31.73	BIU	0.34	0.72
BHAIU5	0.84	25.53	BIU	0.50	0.59

The structural model was assessed by examining the path coefficients beta weight (β) which showed the strength of relationships between the exogenous and endogenous variables and the (R^2) value-amount of variance explained by endogenous variables, Both of the R^2 and the path coefficients indicated how well the model was performing. The path coefficients should be significant and consistent with expectations, the results of statistical analysis of the research model were shown in Figure 4.29 and examination of the research hypotheses and their results were listed in Table 4.27.

As shown in Table 4.27, findings suggested that created latent variables can be used to measure the exogenous and endogenous variables as summarized below.

The latent variables of user personal characteristics (USE) were ranked as follows: computer attitude (CA) with $\beta = 0.72$, experience (EXP) with $\beta = 0.68$, and trust (TR) with $\beta = 0.66$.

The latent variables of social characteristics (SOCIAL) were ranked as follows: subjective norms (SBJN) with $\beta = 0.72$, social influence (SOCII) with $\beta = 0.67$, and social pressure (SOCIP) with $\beta = 0.66$.

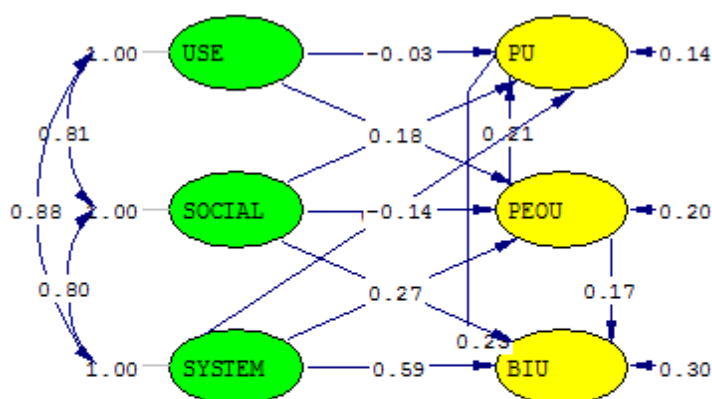
The latent variables of system characteristics (SYSTEM) were ranked as follows: compatibility (COMPT) with $\beta = 0.79$, convenience (CONVEN) with $\beta = 0.74$, perceived risk (PERCRSK) with $\beta = 0.70$, system accessibility (SYSAC) with $\beta = 0.68$, system quality (SYSQUL) with $\beta = 0.64$, and access cost (ACCOST) with $\beta = 0.46$.

The latent variables of perceived usefulness were ranked as follows: Question 5 PromptPay is advantageous (PUF5) with $\beta = 0.86$, Question 4 PromptPay is useful (PUF4) with $\beta = 0.85$, Question 3 PromptPay make transaction easier (PUF3) and Question 6 Affects behavioral intention to use (PUF6) with same value $\beta = 0.84$, Question 2 PromptPay enhances effectiveness (PUF2) with $\beta = 0.82$, and Question 1 PromptPay accomplishes Transaction quicker (PUF1) with $\beta = 0.79$.

The latent variables of perceived ease of use (PEOU) were ranked as follows: Question 1 PromptPay easy to learn (PEOU1), Question 2 Easy to accomplish transaction tasks (PEOU2), and Question 4 PromptPay easy to use (PEOU4) with same value $\beta = 0.81$, Question 5 Affects perceived usefulness (PEOU5) with $\beta = 0.78$, Question 6 Affects behavioral intention to use (PEOU6) with $\beta = 0.75$, and Question 3 Flexible to interact with (PEOU3) with $\beta = 0.69$.

The latent variables of behavioral intention to use (BIU) were ranked as follows: Question 2 Convenient and faster (BHAIU2) with $\beta = 1.03$, Question 1 Be first choice (BHAIU1) with $\beta = 1.02$, Question 3 Suitable with lifestyle (BHAIU3) with $\beta = 1.01$, Question 4 Confident in system quality (BHAIU4) with $\beta = 0.94$, and Question 5 Promoted by organization (BHAIU5) with $\beta = 0.84$.

The structural equation modeling in this study presented “Technology Acceptance Model Towards (TAM) Behavioral Intention to Use PromptPay of Customers in Bangkok” according to model of TAM as Figure 4.10 below.



Chi-Square=583.60, df=296, P-value=0.05302, RMSEA=0.047

Figure 4.10 Structural Equation Modelling
for Technology Acceptance Model Towards (TAM) Behavioral Intention to Use
PromptPay of Customers in Bangkok according to Model of TAM

Structural Equations:

$$PU = 0.21*PEOU - 0.029*USE - 0.058*SOCIAL + 0.76*SYSTEM, \text{Errorvar.} = 0.14, R^2 = 0.85$$

(0.054)	(0.061)	(0.058)	(0.088)	(0.016)
3.83	-0.47	-1.00	8.59	8.31

$$PEOU = 0.18*USE - 0.14*SOCIAL + 0.86*SYSTEM, \text{Errorvar.} = 0.23, R^2 = 0.79$$

(0.074)	(0.069)	(0.076)	(0.023)
2.48	-2.02	11.37	10.00

$$BIU = 0.23*PU + 0.170*PEOU + 0.17*SOCIAL + 0.59*SYSTEM, \text{Errorvar.} = 0.31, R^2 = 0.69$$

(0.091)	(0.065)	(0.065)	(0.13)	(0.024)
2.36	2.07	2.67	4.44	

Regarding structural equations, the causal factors were summarized as follows:

Perceived Usefulness (PU):

The causal factors affected PU in a positive direction, ranked as follows: (1) system characteristics (SYSTEM) with $\beta = 0.76$ as strongly indicated by compatibility (COMPT); (2) PEOU with $\beta = 0.21$ as strongly indicated by Question 2 “It is easy to use PromptPay to accomplish my money transaction tasks”, while user personal characteristics (USE) and social characteristics (SOCIAL) had no significant effects on PU.

Perceived Ease of Use (PEOU):

The causal factors affected PEOU in a positive direction, ranked as follows: (1) system characteristics (SYSTEM) with $\beta = 0.86$ as strongly indicated by compatibility (COMPT); (2) user personal characteristics (USE) with $\beta = 0.18$ as strongly indicated by computer attitude (CA), while social characteristics (SOCIAL) affected PEOU in a negative direction with $\beta = 0.14$ as indicated by subjective norms (SBJN).

Behavioral Intention to Use (BIU):

The causal factors affected BIU in a positive direction, ranked as follows: (1) system characteristics (SYSTEM) with $\beta = 0.59$ as strongly indicated by compatibility (COMPT); (2) PU with $\beta = 0.23$ as strongly indicated by Question 4 I would find PromptPay is useful (PUF4) and Question 6 PU affects my behavioral intention to use PromptPay (PUF6); (3) PEOU with $\beta = 0.17$ as strongly indicated by Question 2 “It is easy to use PromptPay to accomplish my money transaction tasks”, while social characteristics (SOCIAL) affect PEOU in a negative direction with $\beta = 0.14$ as indicated by subjective norms (SBJN).

From structural equations, it was also found that the samples’ behavioral intention to use (BIU) can be ranked as follows: 1) Question 2, “I intend to use of PromptPay frequently because it is more convenient and gives a faster service (BHAIU2)” with $\beta = 1.03$; 2) Question 1, “I intend to use PromptPay as my first choice (BHAIU1): with $\beta = 1.02$; 3) Question 3, “I intend to use PromptPay because it is suitable with my lifestyle (BHAIU3)” with $\beta = 1.01$; 4) Question 4, “I intend to use PromptPay because I feel

confident in its quality (BHAIU4)” with $\beta = 0.94$; and 5) Question 5, “I intend to use PromptPay because it is promoted by my organization, bank, or government” (BHAIU5) with $\beta = 0.84$.

Part 6 the hypotheses were tested regarding three predicted exogenous latent variables, (1) user personal characteristics, (2) social characteristics, and (3) system characteristics, using regression analysis

Table 4.28 Effect of user personal characteristics on system characteristics

Variable	b	β	T-test	P-value
Constant value	.563		6.352	.000
USE	.563	.800	33.898	.000
F-test = 1149.09 Sig. = 0.000				
R = 0.86				
R ² = 0.65				

As shown in Table 4.28, findings suggested that F-test = 1149.09, Sig. = 0.000, which meant that user personal characteristics could be used to predict system characteristics. The analysis results also showed system characteristics was significantly affected by user personal characteristics with R² = 0.65 (or 65%).

Table 4.29 Effect of system characteristics on social characteristics

Variable	b	β	T-test	P-value
Constant value	.529		4.531	.000
SYSTEM	.733	.671	22.514	.000
F-test = 506.88 Sig. = 0.000				
R = 0.671				
R ² = 0.450				

As shown in Table 4.29, the results showed that F-test = 506.88, Sig. = 0.000, which meant that system characteristics could be used to predict social characteristics. The analysis results also showed that social characteristics were significantly affected by system characteristics with R² = 0.45 (or 45%).

Table 4.30 Effect of social characteristics on user personal characteristics

Variable	b	β	T-test	P-value
Constant value	1.189		20.435	.000
SOCIAL	.556	.626	19.982	.000
F-test = 399.29 Sig. = 0.000				
R = 0.626				
R ² = 0.392				

As revealed in Table 4.29, the results showed that F-test = 399.29, Sig. = 0.000, which meant that social characteristics could be used to predict user personal characteristics. The analysis results also showed that user personal characteristics were significantly affected by social characteristics with R² = 0.392 (or 39.2%).

The final model created based on the overall results was presented Figure 4.11.

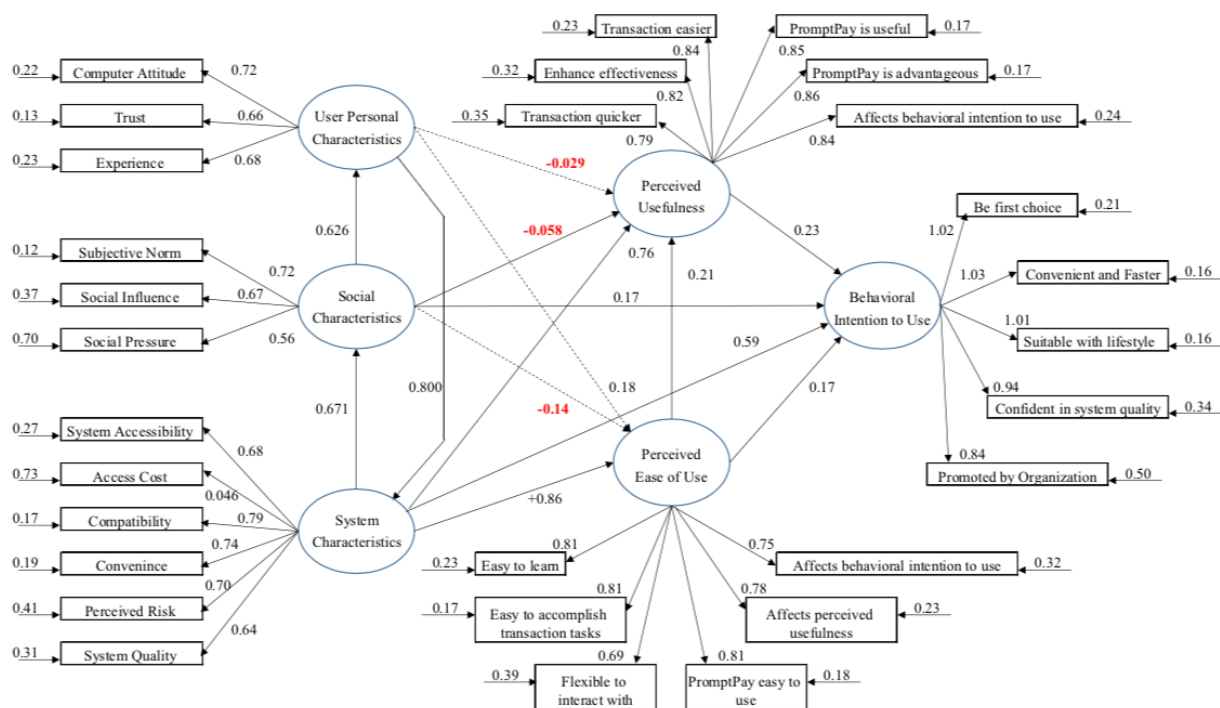


Figure 4.11 Final Model of Technology Acceptance Model (TAM) Towards Behavioral Intention to Use PromptPay of Customers in Bangkok According to Model of the TAM

Part 7 Path analysis to identify direct effects and indirect effects, including the total effects.

Part 7 presents causal factors that affected behavioral intention to use PromptPay, the researcher analyzed the data to identify the weights of both direct effects and indirect effects, as well as the total effects as shown in Table 4.31.

Table 4.31 Weights of direct effects and indirect effects including the total effects of causal factors affecting behavioral intention to use PromptPay

Factors	Perceived Usefulness			Perceived Ease of Use			Behavioral Intention to Use		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Perceived Usefulness	-	-	-	-	-	-	0.23	-	0.23
Perceived Ease of Use	0.21	-	0.21	-	-	-	0.17	0.048	0.218
User Personal Characteristics	0.029	0.608	0.637	0.18	0.181	0.361	-	-	-
Social Characteristics	0.058	0.0294	0.0874	0.14	0.688	0.828	0.17	0.072	0.242
System Characteristics	0.76	0.213	0.973	0.86	0.17	1.03	0.59	0.191	0.781

Table 4.31 shows the analysis results of direct effects, indirect effects and total effects as discussed below.

Behavioral Intention to Use (BIU):

The factors influencing the BIU PromptPay were ranked as follows: (1) system characteristics with TE = 0.781, DE = 0.59 and IE = 0.191, (2) social characteristics with TE = 0.242, DE = 0.17 and IE = 0.072, (3) PU with TE = 0.23, DE = 0.23 and non-indirect effect, and (4) PEOU with TE = 0.218, DE = 0.17 and IE = 0.048, respectively. The best indicator of the indirect effect of BIU PromptPay was PEOU. The survey results highlighted one outstanding hypothesis in this study which stated that social characteristics had direct effects on behavioral intention to use PromptPay.

Perceived Usefulness (PU):

The factors influencing the PU were ranked as follows: (1) PU factor had the highest total effect of system characteristics with $TE = 0.973$, $DE = 0.76$ and $IE = 0.213$, (2) user personal characteristics with $TE = 0.637$, $DE = 0.029$ and $IE = 0.608$, (3) PEOU with $TE = 0.21$, $DE = 0.21$ and non-indirect effect, and (4) social characteristics with $TE = 0.0874$, $DE = 0.058$ and $IE = 0.0294$, respectively.

Perceived Ease of Use (PEOU):

The factors influencing the PEOU were ranked as follows: (1) system characteristics with $TE = 1.03$, $DE = 0.86$ and $IE = 0.17$, (2) social characteristics with $TE = 0.828$, $DE = 0.14$ and $IE = 0.688$, and (3) user personal characteristics with $TE = 0.361$, $DE = 0.18$ and $IE = 0.181$, respectively.

CHAPTER 5

SUMMARY, CONCLUSION & RECOMMENDATIONS

5.1 Summary and conclusion of findings

This chapter presents the summary, conclusion and recommendations, of the study on the technology acceptance model (TAM) towards behavioral intention to use PromptPay of customers in Bangkok conducted to gain an better understanding of the customers' perspectives with the following objectives: (1) to define the external variables in terms of system characteristics, social characteristics, user personal characteristics affecting perceived usefulness and perceived ease of use towards behavioral intention to use PromptPay of customers in Bangkok, (2) to study the TAM towards behavioral intention to use PromptPay of customers in Bangkok and (3) to measure behavioral intention to use PromptPay of customers in Bangkok.

In this quantitative research, the data were collected using an online 5-rating scales questionnaire from a sample of 621 Thai customers over 15 years of age in Bangkok from May 2017 to June 2017. Prior to the actual survey, the reliability test conducted with 30 samples resulted in the overall alpha of .9899. Later, the questionnaire was completed by 621 samples and the data were empirically analyzed using structural equation modelling (SEM). The data analysis was performed using LISREL 8.72 and complex correlations were examined.

Based on the research findings presented in Chapter 4, the summary, conclusion and recommendations of the study are finally offered in this chapter. As for the research findings, the variables in the model were found statistically significant as the causal factors affecting the behavioral intention to use PromptPay. The factors were ranked as follows: (1) system characteristics had a positive effect as strongly indicated by compatibility; (2) perceived usefulness had a positive effect as indicated by that PromptPay was advantageous; (3) perceived ease of use had a positive effect as indicated that PromptPay made it easy to complete banking transactions, while social characteristics had a negative effect as indicated by subjective norms. The causal factors affecting the perceived

usefulness in a positive direction were (1) system characteristics and (2) perceived ease of use, respectively, while user personal characteristics and social characteristics had no effect on the perceived usefulness. The causal factors affecting the perceived ease of use in a positive direction were (1) system characteristics as indicated by compatibility and (2) user personal characteristics as indicated by computer attitude, while social characteristics had a negative effect as indicated by subjective norms. Furthermore, it was found that all variables could predict the behavioral intention to use PromptPay, perceived usefulness and perceived ease of use at 69%, 85% and 79%, respectively.

The factors influencing the behavioral intention to use PromptPay were ranked as follows: (1) system characteristics with TE = 0.781, DE = 0.59 and IE = 0.191, (2) social characteristics with TE = 0.242, DE = 0.17 and IE = 0.072, (3) PU with TE = 0.23, DE = 0.23 and non-indirect effects, (4) PEOU with TE = 0.218, DE = 0.17 and IE = 0.048, respectively. The best indicator of the indirect effects of BIU PromptPay was PEOU. The survey results highlighted one outstanding hypothesis which stated that social characteristics had direct effects on behavioral intention to use PromptPay.

The implications of the findings are discussed and future research directions are recommended in this chapter.

5.2 Conclusion of Survey Results

The study of TAM towards behavioral intention to use PromptPay of customers in Bangkok tested 13 main hypotheses and the results were categorized into 4 main issues.

5.2.1 Significant Analysis Results

Overall, it was found that the proposed conceptual model was matched with the empirical data. The variables in the model were found statistically significant with a direct affect on behavioral intention to use PromptPay and they were ranked as follows:

5.2.1.1 User Personal Characteristics

The survey results showed that the behavioral intention to use computer was generally found at the high significance level. Considering the mean values, computer attitude, experience and trust, respectively, were rated at the highest significance level.

5.2.1.2 Social Characteristics

The survey results revealed that the social characteristics affecting the determination to use PromptPay were found at the moderate significance level in general. Regarding the mean values, subjective norms, social influence and social pressure, respectively, were rated at the highest significance level.

5.2.1.3 System Characteristics

The survey results disclosed that the system characteristics affecting the determination to use PromptPay were broadly found at the high significance level. Concerning the mean values, system quality, access cost, system accessibility and convenience, respectively, were rated at the highest significance level, while compatibility was rated at the high significance level and perceived risk was rated at the moderate significance level.

5.2.1.4 Perceived Usefulness

The survey results showed that the perceived usefulness was rated at the high significance level as the samples believed that higher productivity and efficiency could be reached via PromptPay. By considering each variable separately, the impression that PromptPay would make it easier to conduct money transactions was rated at the highest significance level, the usefulness of PromptPay was rated at the second highest significance level, the concept that PromptPay would enable faster money transactions, the overall advantage of PromptPay was rated at the fourth highest significance level, the perceived usefulness affecting behavioral intention to use PromptPay was rated at the fifth highest significance level and the idea that PromptPay would enhance the job effectiveness of individuals was rated at the sixth significance level.

5.2.1.5 Perceived Ease of Use

The survey results showed that the perceived ease of use of PromptPay were overall found at the high significance level. By considering each variable separately, the belief that learning to use PromptPay would be easy was rated at the highest significance level, the impression that PromptPay would make money transactions easy was rated at the second highest significance level, the idea that PromptPay would be easy to use was rated at the third highest significance level, the perceived ease of use affecting perceived usefulness of PromptPay was rated at the fourth highest significance level, the perceived usefulness affecting behavioral intention to use PromptPay was rated at the fifth highest significance level and the concept that it would be flexible to interact with PromptPay was rated at the sixth significance level.

5.2.1.6 Behavioral Intention to Use

The survey results indicated that the behavioral intention to use PromptPay was found at the moderate significance level. By considering each variable separately, the intention to use PromptPay to promote organizations, or banks, or the government was rated at the moderate significance level, the intention to use PromptPay due to its suitability to one's lifestyle was rated at the second moderate significance level, the intention to frequently use PromptPay because it was a more convenient and faster service was rated at the third moderate significance level, the intention to use PromptPay for one's confidence in the system quality was rated at the fourth significance level and the intention to use PromptPay as the first choice was rated at the fifth moderate significance level.

5.2.2 Confirmatory Factor Analysis Results

Confirmatory factor analysis showed that the Chi-square value was 583.60 with 296 df. and a p-value of 0.0532, which was greater than 0.05. It meant that the TAM towards behavioral intention to use PromptPay of customers in Bangkok passed the criteria. Overall, it also passed statistical criteria (Chi-Square/df = 1.97, p-value = 0.5302, NFI =

0.98, CFI = 0.98, GFI = 0.96, AGFI = 0.95, RMSEA = 0.047, RMR = 0.036, CN = 648). The proposed conceptual model and hypotheses in this study according to the theory of TAM corresponded to the empirical data as shown in the following structural equation model.

$$PU = 0.21*PEOU - 0.029*USE - 0.058*SOCIAL + 0.76*SYSTEM, \text{Errorvar.} = 0.14, R^2 = 0.85$$

$$\begin{matrix} (0.054) & (0.061) & (0.058) & (0.088) & (0.016) \\ 3.83 & -0.47 & -1.00 & 8.59 & 8.31 \end{matrix}$$

$$PEOU = 0.18*USE - 0.14*SOCIAL + 0.86*SYSTEM, \text{Errorvar.} = 0.23, R^2 = 0.79$$

$$\begin{matrix} (0.074) & (0.069) & (0.076) & (0.023) \\ 2.48 & -2.02 & 11.37 & 10.00 \end{matrix}$$

$$BIU = 0.23*PU + 0.170*PEOU + 0.17*SOCIAL + 0.59*SYSTEM, \text{Errorvar.} = 0.31, R^2 = 0.69$$

$$\begin{matrix} (0.091) & (0.065) & (0.065) & (0.13) & (0.024) \\ 2.36 & 2.07 & 2.67 & 4.44 \end{matrix}$$

Apart from the above structural equation model, the results of hypothesis testing to predict the three exogenous variables, namely user personal characteristics, social characteristics and system characteristics, using a simple linear regression analysis method are presented in Table 5.1.

Table 5.1: Results of hypothesis testing for user personal characteristics, social characteristics and system characteristics using a simple linear regression analysis method

Predictor	Dependent Variable					
	User Personal Characteristics		Social Characteristics		System Characteristics	
Variable	β	T-test	β	T-test	β	T-test
User Personal Characteristics	-	-	-	-	.800	33.898
Social Characteristics	.626	19.982	-	-	-	-
System Characteristics	-	-	.671	22.514	-	-

Based on the hypothesis testing results shown in Table 5.1, the hypotheses could be answered as follows:

H1: User personal characteristics, including computer attitude, experience and trust, affect the system characteristics in terms of system accessibility, access cost, compatibility, convenience, perceived risk and system quality.

that the result of the t-test was 33.898, which was greater than 1.96. It meant that the user personal characteristics could predict the system characteristics at the statistically significant level of .01 when correlation coefficient for prediction was found at .80.

H2: Social characteristics, including subjective norms, social influence and social pressure, affect the user personal characteristics in terms of computer attitude, experience and trust.

The result of the t-test was 19.982, which was greater than 1.96. It meant that the social characteristics could predict the user personal characteristics at the statistically significant level of .01 when correlation coefficient for prediction was found at .626.

H3: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the social characteristics in terms of subjective norms, social influence and social pressure.

The result of the t-test was 22.514, which was greater than 1.96. It meant that the system characteristics couldn predict the social characteristics at the statistically significant level of .01 when correlation coefficient for prediction was found at .671.

H4: User personal characteristics, including computer attitude, experience and trust, affect the perceived usefulness of PromptPay.

The result of the t-test was -0.47, which was less than 1.96. It meant that the user personal characteristics could not predict the perceived usefulness at the statistically significant level of 0.01 when correlation coefficient for prediction was found at -0.47.

H5: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived usefulness of PromptPay.

The result of the t-test was -1.00, which was less than 1.96. It meant that the social characteristics could not predict the perceived usefulness at the statistically significant level of 0.01 when correlation coefficient for prediction was found at - 0.058.

H6: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the perceived usefulness of PromptPay.

The result of the t-test was 8.59, which was greater than 1.96. It meant that the system characteristics could predict the perceived usefulness at the statistically significant level of 0.01 when correlation coefficient for prediction was found at .76.

H7: User personal characteristics, including computer attitude, experience and trust, affect the the perceived ease of use of PromptPay.

The result of the t-test was 2.48, which was greater than 1.96. It meant that the user personal characteristics could predict the perceived ease of use at the statistically significant level of .01 when correlation coefficient for prediction was found at .18.

H8: Social characteristics, including subjective norms, social influence and social pressure, affect the perceived ease of use of PromptPay.

The result of the t-test was -2.02, which was less than -1.96. It meant that the social characteristics could predict the perceived ease of use at the statistically significant level of .01 when correlation coefficient for prediction was found at - 0.14.

H9: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the perceived ease of use of PromptPay.

The result of the t-test was 11.37, which was greater than 1.96. It meant that the system characteristics could predict the perceived ease of use at the statistically significant level of .01 when correlation coefficient for prediction was found at .86.

H10: Perceived ease of use affects the perceived usefulness of PromptPay.

The result of the t-test was 3.83, which was greater than 1.96. It meant that the perceived ease of use could predict the perceived usefulness at the statistically significant level of .01 when correlation coefficient for prediction was found at .21.

H11: Perceived usefulness affects the behavioral intention to use PromptPay.

The result of the t-test was 2.36, which was greater than 1.96. It meant that the perceived usefulness could predict the behavioral intention to use PromptPay at the statistically significant level of .01 when correlation coefficient for prediction was found at .23.

H12: Perceived ease of use affects the behavioral intention to use PromptPay.

The result of the t-test was 2.07, which was greater than 1.96. It meant that the perceived ease of use could predict the behavioral intention to use PromptPay at the statistically significant level of .01 when correlation coefficient for prediction was found at .17.

H13: System characteristics, including system accessibility, access cost, compatibility, convenience, perceived risk and system quality, affect the behavioral intention to use PromptPay.

The result of the t-test was 4.44, which was greater than 1.96. It meant that the system characteristics could predict the behavioral intention to use at the statistically significant level of .01 when correlation coefficient for prediction was found at .59.

5.3 Discussion of Survey Results

This research was an empirical investigation of the factors in the new payment system in Thailand, focusing on the development of TAM towards behavioral intention to use PromptPay of customers in Bangkok. According to the research findings summarized and concluded in the previous section, the further discussion of survey results was described as follows:

Hypothesis H1: The findings indicated that the user personal characteristics could predict the system characteristics in a positive direction. The most effective indicative variable was computer attitude as it had highest factor loading compared to other variables. At the high significance level, the samples were convinced that PromptPay would make it easier for them to complete transactions, and PromptPay was a good and wise idea. The results indicated that the system accessibility affected the samples' perceived ease of use as they were convinced that PromptPay would make it easier and more convenient to conduct transactions. This finding was in line with several previous research. Chandra et al., (2010) confirmed that trust had an effect on user adoption of mobile payment through perceived usefulness and perceived ease of use and Shin (2010) also concluded that trust had an effect on consumer acceptance of mobile payment systems. In addition, Zhou (2011) explained that, due to the high perceived risk and low switching costs, it was critical to build users' initial trust to facilitate their usage of mobile payment as he found that perceived security, perceived ease of use and perceived ubiquity significantly affected initial trust, which in turn determined perceived usefulness and both initial trust and perceived usefulness also affected usage intention. Regarding the issue of trust in using a new payment system, Amoroso and Watanabe (2012) pointed out that credibility of the issuers and confidence of potential users were of prime importance.

Hypothesis H2: The findings showed that the social characteristics could predict the user personal characteristics in a positive direction. In general, considering the samples' social characteristics, they were convinced to use PromptPay basically because of their own subjective norms and, with the highest mean value, they were the most powerful

predictive variable affecting the perceived usefulness and perceived ease of use, while the social influence affected the perceived ease of use and the social pressure also affected the perceived ease of use, respectively. The results indicated that the samples possessed different user personal characteristics; however, they shared the same social characteristics that could predict the samples' intention to use PromptPay, in terms of the perceived ease of use.

This research's findings also conformed to the previous studies. Venkatesh and Davis (2000) found that the social influence construct consisted of family, relatives and friends. dSchepers and Wetzels (2007) conducted a quantitative meta-analysis of previous studies on the TAM in attempt to make well-grounded statements on the role of subjective norms and the results revealed a significant influence of subjective norms on perceived usefulness and behavioral intention to use. Singh, Srivastava and Srivastava (2010) also highlighted the strong influence of family and friends on technology adoption. Moeser, Moryson and Schwenk (2013) found that, via perceived usefulness, social norms had a strong indirect influence on attitude and intention, creating a network effect on peer users. Kazi and Mannan (2013) concluded that social influence was the most significant factor in increasing the intention to adopt mobile banking, while Park's study (2009) also found that subjective norms played an important role in changing the attitude and behavioral intention towards the use of e-learning.

Hypothesis H3: The findings showed that the system characteristics could predict the social characteristics in a positive direction. The most powerful predictive variable was compatibility, especially in terms of compatibility affecting the perceived ease of use PromptPay, while the second predictive variable was convenience as PromptPay could be used anywhere and anytime and the third predictive variable was the perceived risk since samples were confident that their money was secured when being transferred via PromptPay. The results indicated that the system characteristics, in terms of convenience, significantly influenced the samples' intention to use PromptPay.

These findings were also in line with the previous research. Alsamydai (2014) focused on the system quality in the adaption of TAM to promote the use of mobile banking services. Zhou (2011) indicated that perceived security, perceived ubiquity and perceived ease of use had significant effects on initial trust, while Phonthanakitithaworn et al. (2015) used compatibility, perceived trust and perceived cost as key constructs in their study of user intention to adopt mobile payment services in Thai market. Al-Jabri (2015) pointed out that the factors directly affecting mobile banking adoption were compatibility and risk and also indicated that compatibility had the strongest effect on the intention to use mobile banking, while perceived risk was a barrier to the intention to use mobile banking. Amoroso and Watanabe (2012) found that low perceived risk created trust, positive attitude and strong intention to use mobile Suica in Japan. While Kazi and Mannan (2013) stated that the nature of risk in online banking had always been an inhibitor factor in customers' behavioral intention to adopt mobile banking services. Additionally, Rezaei, Kabiry and Forghani (2013) studied the factors affecting Isfahanian mobile banking adoption and concluded that compatibility had a strong direct effect on perceived ease of use, perceived usefulness and behavioral intention to use.

Hypothesis H4: The findings showed that the user personal characteristics could not predict the perceived usefulness as the correlation coefficient for prediction was found at -0.47. It meant that user personal characteristics had an effect in a negative direction. The results indicated that the samples' trust in PromptPay for its high integrity was rated at the moderate significance level. It meant the samples believed that PromptPay was not yet ready. For this reason, it could result in a less significant effect on the perceived usefulness of PromptPay. In addition, the trustworthiness of PromptPay was rated at moderate significance level, which was lower than other variables. It could be one of the reasons why user personal characteristics, in terms of trust, had no significant effect on the perceived usefulness of PromptPay.

These findings differed from several previous studies. Kazi and Mannan (2013) recommended that trust level should be built among potential consumers in order to reduce

the nature of perceived risk in Pakistan. Alsamydai (2014) pointed out that the use of mobile banking services depends on the level of user experience. The strongest correlation was found between perceived ease of use and experience. Al-Jabri (2015) found that perceived trust had a significant effect on perceived ease of use and perceived trust had an indirect effect on the intention to use mobile banking through perceived risk. Madan, Sushila and Arora, Jyoti Batra (2016) pointed out that the growth of m-commerce motivated a better understanding of how trust could be built on a mobile device. Amoroso and Watanabe (2012) observed and found that social influence on the use of mobile wallets in Japan was stronger among younger people compared to older people and that gender was not a differentiator. However, PromptPay provided services for individuals and businesses to transfer funds quickly, therefore it would enable individuals to make person-to-person payments (P2P) and government agencies would be able to transfer social benefits, financial assistances and tax refunds to citizens. Thus, age and gender were not considered significant factors in this study.

Hypothesis H5: The findings showed that the social characteristics could not predict the perceived usefulness since the correlation coefficient for prediction was found at -0.058, showing negative correlation. It meant that when the samples had low significant social characteristics, they would not perceive the usefulness of PromptPay. In terms of social pressure, the results indicated that when the samples had low significant social pressure, they could foresee the usefulness of PromptPay, especially the feeling of being released from social pressure.

The findings found in this research differed from some previous studies. Moeser, Moryson and Schwenk (2013) found that social norms had a strong indirect influence via perceived usefulness on attitude and intention, creating a network effect on peer users. Kazi and Mannan (2013) concluded that social influence became most significant on the intention to adopt mobile banking. Park (2009) concluded that subjective norms played an important role in changing attitude and behavioral intention to use e-learning. Similar to the results found in the research conducted by Phonthanakitithaworn et al. (2015),

subjective norms were another construct that had a significant influence on Thai customers' intention to adopt m-payment services and their perceptions of the usefulness of the services.

Hypothesis H6: The findings showed that the system characteristics could predict the perceived usefulness in a positive direction as the correlation coefficient for prediction was found at 0.76. The most predictive variables were compatibility, convenience and perceived risk, which had the highest factor loadings. Compatibility affected the samples' perceived usefulness of PromptPay as PromptPay was compatible with most aspects of money transactions and its convenience affected the perceived usefulness of PromptPay with the higher mean value compared with other variables. The results also indicated that the use of PromptPay was compatible with most aspects of money transactions and significantly affected the perceived usefulness of PromptPay.

This research's findings conformed to the previous studies. Shin (2010) found that perceived risk also affected consumer acceptance of mobile payment systems. Mojtahed, Nunes and Peng (2011) indicated that, as the value of perceived risk increased, the intention to use mobile banking declined. In addition, perceived risk was also found to have an influence on perceived usefulness. Alsamydai (2014) focused on the system quality in the adaption of TAM to the use of mobile banking services while Zhou (2011) indicated that perceived security, perceived ubiquity and perceived ease of use had significant effects on initial trust.

Hypothesis H7: The findings showed that the user personal characteristics could predict the perceived ease of use in a positive direction. The most predictive variable was computer attitude, as the samples believed that using PromptPay would make it easier for them to complete transactions and they were positive about the PromptPay system, while the second predictive variable was experience affecting the perceived ease of use of PromptPay. These variables were likely to be the best indicators in terms of user personal

characteristics as the significant causal factors affected the samples' perceived ease of use PromptPay.

This research's findings were in line with the previous studies. Alsamydai (2014) pointed out that the use of mobile banking services depended on the user's experience, whereby the strongest correlation was found between perceived ease of use and experience.

Hypothesis H8: The findings showed that the social characteristics could predict the perceived ease of use in a negative direction as the correlation coefficient for prediction was found at -0.14. The results also indicated that when the samples had low significant social characteristics, their subjective norms were high and they would not be influenced by others as their knowledge in using PromptPay would be influenced by their own self-learning. For these reasons, the perceived ease of use PromptPay would be affected.

This research's findings were in line with the previous studies. Schepers and Wetzels (2007) conducted a quantitative meta-analysis of previous research on the TAM in attempt to make well-grounded statements on the role of subjective norms. The results indicated that subjective norms significantly influenced perceived usefulness and behavioral intention to use. Singh, Srivastava and Srivastava (2010) highlighted the strong influence of family and friends on technology adoption. Moeser, Moryson and Schwenk (2013) found that social norms had a strong indirect influence via perceived usefulness on attitude and intention, creating a network effect on peer users. Kazi and Mannan (2013) concluded that social influence became most significant on the intention to adopt mobile banking.

Hypothesis H9: The findings showed that the system characteristics could predict the perceived ease of use in a positive direction. Compatibility, convenience and perceived risk were the most predictive variables that affected the perceived ease of use of PromptPay. When convenience in using PromptPay affected the samples' loyalty to use PromptPay, they were ready to use PromptPay again whenever they needed the service.

When they use PromptPay more often, their improved skill would affect their perceived ease of use due to familiarity.

This research's findings were conformed to the previous studies. Phonthanukitithaworn et al. (2015) used the compatibility, perceived trust and perceived cost as key constructs in their study of user intention to adopt mobile payment services in Thai market. Al-Jabri (2015) mentioned the factors directly affecting mobile banking adoption were compatibility and risk, while it was indicated that compatibility had the strongest effect on the intention and perceived risk was a barrier to the intention to use mobile banking. Amoroso and Watanabe (2012) found that low perceived risk created trust, positive attitude and strong intention to use mobile Suica in Japan. While Kazi and Mannan (2013) stated that the nature of risk in online banking had always been an inhibitor factor in customers' behavioral intention to adopt mobile banking services.

Hypothesis H10: The findings showed that the perceived ease of use could predict the perceived usefulness in a positive direction. The most predictive variables were the impression that learning to use PromptPay was easy, and PromptPay was easy use to accomplish money transaction tasks. The results indicated that after the samples used PromptPay regularly, they would be familiar with the ease of use of PromptPay and they would realize that there are many advantages of using PromptPay.

This research's findings were conformed to the findings of the previous studies. According to Davis (1989), perceived ease of use was defined as "the degree to which an individual believes that using a particular system would be free of physical and mental effort." Mojtahed, Nunes and Peng (2011) confirmed that perceived ease of use had an influence on perceived usefulness. Rezaei, Kabiry and Forghani (2013) found that perceived ease of use was one of the factors that influenced customers' behavioral intention to adopt mobile banking. Al-Jabri (2015) summarized the recent research studies on mobile banking and found that the perceived ease of use had a direct relationship with the perceived usefulness as well as the intention to use mobile banking services.

Phonthanukitithaworn et al. (2015) pointed out that perceived ease of use was related to the assessment of the intrinsic characteristics of using information technology. It suggested that an individual's perception of perceived ease of use was based on the assessment of ease of use and ease of learning, flexibility, clarity of the interface and the processes involved in using it. For instance, some people found that conducting a payment transaction through a mobile device was difficult since there were several steps involved, including registration with a service provider, initialization and transaction authorization.

Hypothesis H11: The findings showed that the perceived usefulness could predict the behavioral intention to use PromptPay in a positive direction. The most predictive variables were the beliefs that using PromptPay would make it easier to carry out money transactions and it would take less time to complete transaction tasks. For these reasons, the samples' behavioral intention to use was effected.

This research's findings were in line with the previous studies. Rezaei, Kabiry and Forghani (2013) stated that perceived usefulness was one of the factors that influenced customers' intention to adopt mobile banking. Al-Jabri (2015) defined perceived usefulness as the extent to which the customer believed in the advantages of mobile banking channels, such as ATM or phone banking, for conducting banking services. Phonthanukitithaworn et al. (2015) pointed out that perceived usefulness in the context of m-payment services could be explained as the extent to which an individual believed that using m-payment services would enhance his or her productivity and performance in conducting payment transactions. Perceived usefulness also captured how m-payment could help users to achieve task-related goals, such as completing more effective and efficient tasks. For instance, a consumer may feel that m-payment services allows him/her to make payment via their mobile phone anytime and anywhere.

Hypothesis H12: The findings showed that the perceived ease of use could predict the behavioral intention to use PromptPay in a positive direction. The most predictive variables were the beliefs that learning to use PromptPay was easy and PromptPay was easy to use to accomplish money transaction tasks. The main reason behind these results

could be the samples' perception of perceived ease of use due to their familiarity with PromptPay that affected their satisfaction. They were willing to use PromptPay regularly and this would build the samples' behavioral intention to use PromptPay in the long run. The results also indicated that the perceived ease of use had significant effects on the samples' behavioral intention to use PromptPay.

These research findings conformed to the previous studies. Phonthanukitithaworn et al. (2015) pointed out that perceived ease of use was related to the assessment of the intrinsic characteristics of using information technology. It suggested that an individual's perception of perceived ease of use was based on the assessment of ease of use and ease of learning, flexibility, clarity of the interface and the processes involved in using it. For instance, some people found that conducting a payment transaction through a mobile device was difficult since there were several steps involved, including registration with a service provider, initialization and transaction authorization.

Hypothesis H13: The findings showed that the system characteristics could predict the behavioral intention to use PromptPay as when the correlation coefficient for prediction was found at 0.59 with the highest factor loading. The main reason behind this result was that the reliability of new systems was important to the decision to adopt the new payment system, PromptPay. The impression that PromptPay would make money transactions easier and learning to use it would be easy had an effect on the samples' behavioral intention to use PromptPay in the long run.

This research's findings were in line with the previous studies. Park (2009) found that system accessibility was a determinant construct towards perceived ease of use based on the TAM towards the understanding of university students' behavioral intention to use e-learning. Shin (2010) confirmed that perceived risk also affected consumer acceptance of mobile payment systems. Mojtahed, Nunes and Peng (2011) indicated that, as the value of perceived risk increased, the intention to use mobile banking declined and the perceived risk also had an influence on the perceived usefulness. Al-Jabri (2015) pointed out that the factors directly affecting mobile banking adoption were compatibility and risk and also

indicated that compatibility had the strongest effect on the intention to use mobile banking, while perceived risk was a barrier to the intention to use mobile banking. Amoroso and Watanabe (2012) found that low perceived risk created trust, positive attitude and strong intention to use mobile Suica in Japan. While Kazi and Mannan (2013) stated that the nature of risk in online banking had always been an inhibitor factor in customers' behavioral intention to adopt mobile banking services. Additionally, Rezaei, Kabiry and Forghani (2013) studied the factors affecting Isfahanian mobile banking adoption and concluded that compatibility had a strong direct effect on perceived ease of use, perceived usefulness and behavioral intention to use.

The access cost was found with low correlation significance ($\beta = 0.46$) because PromptPay provided services with lower fees compared to other services; therefore, it was not an important factor. This result differed from the results obtained in previous studies. Phonthanakitithaworn et al. (2015) used compatibility, perceived trust and perceived cost as key constructs in their study on user intention to adopt mobile payment services in Thai market.

5.4 Limitations of the Study

This study investigated a limited number of Bangkok population; therefore, these following important issues should be verified carefully.

- The questionnaire was developed based on previous research as well as data related to this study which had been available until May 2017 prior to actual survey.
- Since the survey data were collected through an online questionnaire, the respondents' answers were based on their basic understanding and previous experience.
- As PromptPay, a new payment system, was recently introduced to public, the respondents could be unfamiliar with it. They might have different answers after they gain more knowledge and experience with PromptPay in the future.

- The data were randomly collected online; therefore, the results represented a wide range of respondents with different backgrounds; thus, they might not represent the population's opinions.

5.5 Recommendations

Considering the findings of this study on the TAM) towards behavioral intention to use PromptPay of customers in Bangkok, there are some recommendations as follows:

1. Taking the research results into consideration, trust had the lowest coefficient and the samples had low confidence in the integrity of PromptPay; therefore, the authorized organizations should provide the knowledge about the system quality of PromptPay, so that the customers can be assured with the high efficiency and integrity of PromptPay.
2. Since the research results indicated that the user personal characteristics had no significant effect on the perceived usefulness and trust in PromptPay was found at the lowest significance level; the authorized organizations should develop a better understanding of how trust can be built. The first priority focus should be on policy and marketing strategies for building the customers' trust in using PromptPay.
3. PromptPay should be widely promoted to strengthen the perceived usefulness as well as perceived ease of use through social media and online communication channels.

Further recommendations for future studies are as follows:

1. The research findings showed that user personal characteristics have no significant effect on perceived usefulness; therefore, future studies should be conducted to explain the reasons behind this issue.
2. Problems in using PromptPay should be explored in order to examine the root causes and solve the problems to improve customer satisfaction.

3. According to the research findings, the customers' trust in PromptPay was low; therefore, new strategies should be developed to increase the trust in PromptPay.
4. The access cost can be eliminated from the model because PromptPay provides services with lower fees compared to other services; therefore, it does not require further study.
5. The questionnaire was developed especially for this study from December 2016 to May 2017 prior to actual survey. The customers' behaviors changed over the time; therefore, the questions would need to be improved to meet the market situations for future studies.

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APPENDIX A
SURVEY QUESTIONNAIRE

Thesis Questionnaire
TAM Towards Behavioral Intention to Use PromptPay for Customers in Bangkok

Please mark in column which match with your opinion

5 = Strongly agree; 4 = Agree; 3 = Uncertain; 2 = Disagree; 1 = Strongly disagree

Questions		Level of Agreement				
		5	4	3	2	1
First Dimension: User Personal Characteristics						
	Computer Attitude is defined as an individual's positive or negative attitude feeling about performing computer behavior.					
1	Transferring money through PromptPay is a good idea.					
2	Transferring money through PromptPay is a wise idea.					
3	I am positive towards the PromptPay system.					
4	Using PromptPay would make it easier to do my transaction.					
	Trust is defined as the customers' relative confidence in the PromptPay services.					
1	PromptPay is trustworthy.					
2	PromptPay keeps its promise.					
3	PromptPay has a high level of integrity.					
4	Trust in PromptPay affects my perceived usefulness of PromptPay.					
5	Trust in PromptPay affects my perceived ease of use of PromptPay.					
6	Trust in PromptPay affects my perceived risk of the PromptPay system.					
	Experience is defined as an individual's experience in which technical support of new technology being examined.					
1	My experience affects my perceived usefulness of PromptPay.					
2	My experience affects my perceived ease of use of PromptPay.					
3	My experience affects my perceived risk of the PromptPay system.					
4	My experience affects my perceived compatibility of the PromptPay system.					
Second Dimension: Social Characteristics						
	Subjective norm is defined as an individual's attention to and being influenced by the opinions of people who are important to him/her while considering PromptPay."					
1	What PromptPay stands to others for is important for me as customer.					
2	I like using PromptPay based on similarity of my values and societal values underlying its use.					
3	My subjective norm affects my perceived usefulness of PromptPay.					
4	My subjective norm affects my perceived ease of use PromptPay.					
	Social influence is defined as an individual's perceptions affected by others who believe he/she should use PromptPay.					
1	People who influence my behavior think that I should use the PromptPay.					
2	People who are important to me think that I should use the PromptPay.					
3	A high proportion of people in my social environment use the PromptPay.					
4	In general, my peers have supported the use of PromptPay.					
5	My social influence affects my perceived usefulness of PromptPay.					
6	My social influence affects my perceived ease of use of PromptPay.					
	Social Pressure is defined as motivation of an individual who believes you should use PromptPay to obtain a higher social status or a more important position in the society.					
1	My relatives or friends or work colleagues' pressure affect my behavioral intention to use PromptPay.					
2	Using PromptPay release me from social pressure.					
3	My social pressure affects my perceived usefulness of PromptPay.					
4	My social pressure affects my perceived ease of use PromptPay.					

Thesis Questionnaire
TAM Towards Behavioral Intention to Use PromptPay for Customers in Bangkok

Please mark in column which match with your opinion

5 = Strongly agree; 4 = Agree; 3 = Uncertain; 2 = Disagree; 1 = Strongly disagree

Questions	Level of Agreement				
	5	4	3	2	1
Third Dimension: System Characteristics					
System accessibility is defined as an individual with physical access to the PromptPay system, or the ability to retrieve the desired information from the PromptPay system.					
1					
2					
3					
4					
5					
6					
Access cost is defined as using PromptPay services involving costs, such as service fees and communication fees or benefits of using PromptPay services that do not offer value for money.					
1					
2					
3					
4					
5					
6					
Compatibility is defined as a service is perceived as consistent with customers' existing values, beliefs, habits and needs for money transactions.					
1					
2					
3					
4					
5					
6					
Convenience is defined as an individual's preference for convenient money transaction services in term of place, time and execution.					
1					
2					
3					
4					
5					
6					
Perceived risk is defined as the probability or possibility that a customer might incur losses in the form of financial losses or personal account information by using PromptPay services.					
1					
2					
3					
4					
5					
6					
7					

Thesis Questionnaire
TAM Towards Behavioral Intention to Use PromptPay for Customers in Bangkok

Please mark in column which match with your opinion

5 = Strongly agree; 4 = Agree; 3 = Uncertain; 2 = Disagree; 1 = Strongly disagree

Questions		Level of Agreement				
		5	4	3	2	1
Third Dimension: System Characteristics (Continued)						
System quality is defined as the ability of the information system to conduct transaction accurately and reliably.						
1	Accurate transactions are important to my decision to adopt new payment systems.					
2	Reliable transactions are important to my decision to adopt new payment systems.					
3	Systems quality affect my perceived usefulness of PromptPay.					
4	Systems quality affect my perceived ease of use of PromptPay.					
5	Systems quality affect my intention to use PromptPay.					
Fourth Dimension: Perceived Usefulness is defined as the degree to which an individual believes that using PromptPay would enhance his/her productivity and performance in conducting payment transaction.						
1	Using PromptPay for my money transaction would enable me to accomplish the task more quickly.					
2	Using PromptPay would enhance my effectiveness on the job.					
3	Using PromptPay would make it easier to do my money transactions.					
4	I would find PromptPay useful.					
5	Overall, using PromptPay is advantageous.					
6	Perceived usefulness affects my behavioral intention to use PromptPay.					
Fifth Dimension: Perceived Ease of Use is defined as the degree to which an individual believes that using PromptPay would be free of physical and mental effort.						
1	Learning to use PromptPay would be easy for me.					
2	I would find PromptPay easy to use to accomplish my money transaction tasks.					
3	I would find PromptPay flexible to interact with.					
4	I would find PromptPay easy to use.					
5	Perceived ease of use affects my perceived usefulness of PromptPay.					
6	Perceived ease of use affects my behavioral intention to use PromptPay.					
Sixth Dimension: Behavioral Intention to Use is defined as the customer's likelihood to engage in using PromptPay."						
1	I intend to use PromptPay as my first choice.					
2	I intend to use PromptPay frequently because it is more convenient and will faster service.					
3	I intend to use PromptPay because it is suitable for my lifestyle.					
4	I intend to use PromptPay because I feel confident in its system quality.					
5	I intend to use PromptPay because it is promoted by my organization/bank/government.					

แบบสอบถามสำหรับงานวิทยานิพนธ์ ในระดับปริญญาโท
เรื่อง การศึกษาทฤษฎีการยอมรับการใช้เทคโนโลยีต่อความตั้งใจที่จะใช้งานพร้อมแพทย์ของลูกค้าในกรุงเทพมหานคร

กรุณากรอกคะแนนตามระดับความคิดเห็นของคุณ โดยใส่เครื่องหมายถูก ลงในช่องคะแนนตามลำดับดังนี้
 5 = เห็นด้วยอย่างยิ่ง; 4 = เห็นด้วย; 3 = ไม่แน่ใจ; 2 = ไม่เห็นด้วย; 1 = ไม่เห็นด้วยอย่างยิ่ง

คำถาม	ระดับความคิดเห็น				
	5	4	3	2	1
ยัติแรก: คุณลักษณะทางบุคลิกภาพของผู้ใช้					
ทัศนคติเกี่ยวกับคอมพิวเตอร์ หมายถึง ความรู้สึกเชิงบวกหรือลบของบุคคลเกี่ยวกับพฤติกรรมการใช้คอมพิวเตอร์					
1 โอนเงินผ่านระบบพร้อมแพทย์เป็นความคิดที่ดี					
2 โอนเงินผ่านระบบพร้อมแพทย์เป็นความคิดที่ฉลาด					
3 ฉันมีทัศนคติเชิงบวกต่อระบบพร้อมแพทย์					
4 การใช้งานพร้อมแพทย์ทำให้ฉันทำธุรกรรม ได้ง่ายขึ้น					
ความเชื่อถือ หมายถึง ความเชื่อมั่นของลูกค้าต่อบริการของพร้อมแพทย์					
1 พร้อมแพทย์ไว้วางใจได้					
2 พร้อมแพทย์เป็นไปตามที่สัญญา					
3 พร้อมแพทย์มีความสมบูรณ์ในการใช้งานในระดับสูง					
4 ความเชื่อถือในพร้อมแพทย์ ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมแพทย์					
5 ความเชื่อถือในพร้อมแพทย์ ส่งผลต่อ การรับรู้ของฉันว่าพร้อมแพทย์ใช้งานได้ง่าย					
6 ความเชื่อถือในพร้อมแพทย์ ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับความเสี่ยงของระบบพร้อมแพทย์					
ประสบการณ์ หมายถึง ประสบการณ์ของบุคคลในการพิจารณาตรวจสอบ การใช้เทคโนโลยีใหม่					
1 ประสบการณ์ของฉัน ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมแพทย์					
2 ประสบการณ์ของฉัน ส่งผลต่อ การรับรู้ของฉันว่าพร้อมแพทย์ใช้งานได้ง่าย					
3 ประสบการณ์ของฉัน ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับความเสี่ยงของระบบพร้อมแพทย์					
4 ประสบการณ์ของฉัน ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับความเข้ากันได้กับระบบพร้อมแพทย์					
ยัติที่สอง: คุณลักษณะทางสังคม					
บรรทัดฐานส่วนตัว หมายถึง คุณให้ความสำคัญ และถูกชักจูงโดยความคิดเห็นของบุคคลอื่นเมื่อพิจารณาใช้พร้อมแพทย์					
1 มุมมองของคนอื่นๆ ที่มีต่อพร้อมแพทย์นั้นสำคัญสำหรับฉันในฐานะลูกค้า					
2 ฉันพอใจที่จะใช้พร้อมแพทย์เนื่องด้วยคำนิยมของฉันคล้ายกับคำนิยมสังคมซึ่งมีความจำเป็นต้องใช้					
3 บรรทัดฐานส่วนตัวของฉัน ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมแพทย์					
4 บรรทัดฐานส่วนตัวของฉัน ส่งผลต่อ การรับรู้ของฉันว่าพร้อมแพทย์ใช้งานได้ง่าย					
อิทธิพลทางสังคม หมายถึง การรับรู้ถึงความสำคัญของผู้อื่นที่เชื่อว่าคุณควรใช้พร้อมแพทย์					
1 ผู้คนซึ่งมีอิทธิพลต่อพฤติกรรมของฉันคิดว่าฉันควรใช้งานพร้อมแพทย์					
2 ผู้คนซึ่งมีความสำคัญต่อฉันคิดว่าฉันควรใช้งานพร้อมแพทย์					
3 ผู้คนส่วนใหญ่ในสังคมแวดล้อมฉัน ใช้งานพร้อมแพทย์					
4 โดยทั่วไป เพื่อนของฉันได้สนับสนุนให้ใช้พร้อมแพทย์					
5 อิทธิพลทางสังคมของฉัน ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมแพทย์					
6 อิทธิพลทางสังคมของฉัน ส่งผลต่อ การรับรู้ของฉันว่าพร้อมแพทย์ใช้งานได้ง่าย					
แรงกดดันทางสังคม หมายถึง แรงจูงใจของบุคคลผู้เชื่อว่าคุณควรใช้งานพร้อมแพทย์เพื่อให้มีสถานะทางสังคมที่สูงขึ้นหรืออยู่ในตำแหน่งที่สำคัญมากกว่าเดิมในสังคม					
1 แรงกดดันจากญาติหรือเพื่อนหรือเพื่อนร่วมงานของฉันส่งผลต่อความตั้งใจเชิงพฤติกรรมของฉันในการใช้งานพร้อมแพทย์					
2 การใช้งานพร้อมแพทย์ทำให้ฉันรู้สึกว่าคุณปลดปล่อยออกจากแรงกดดันทางสังคม					
3 แรงกดดันทางสังคม ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมแพทย์					
4 แรงกดดันทางสังคม ส่งผลต่อ การรับรู้ของฉันว่าพร้อมแพทย์ใช้งานได้ง่าย					

แบบสอบถามสำหรับงานวิทยานิพนธ์ ในระดับปริญญาโท

เรื่อง การศึกษาทฤษฎีการยอมรับการใช้เทคโนโลยีต่อความตั้งใจที่จะใช้งานพร้อมเพย์ของลูกค้าในกรุงเทพมหานคร

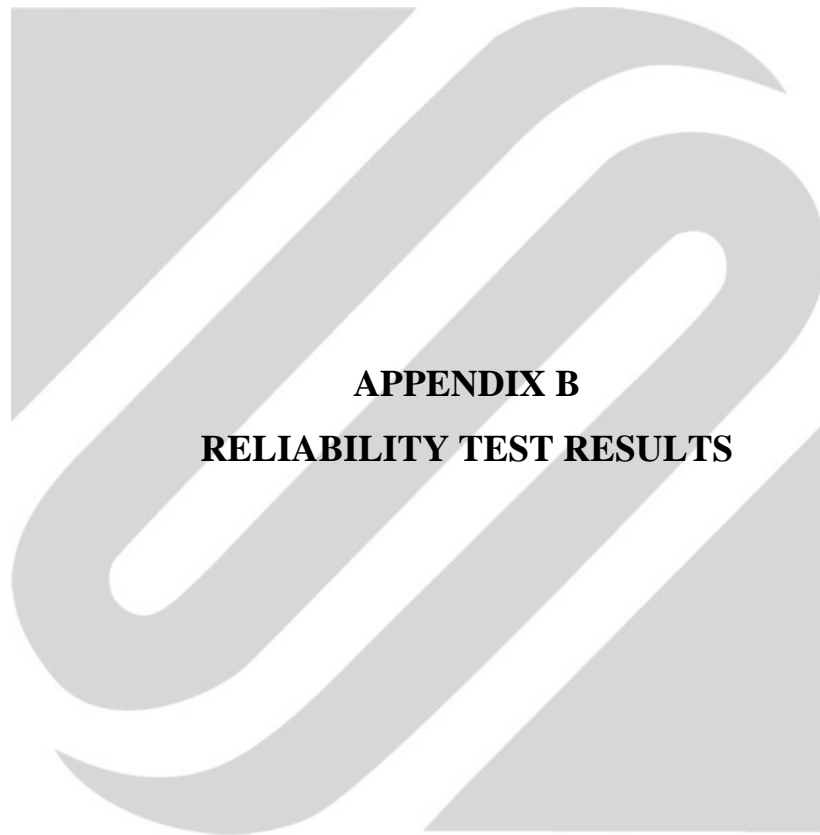
กรุณาออกคะแนนตามระดับความคิดเห็นของคุณ โดยใส่เครื่องหมายถูก ลงในช่องคะแนนตามลำดับดังนี้
5 = เห็นด้วยอย่างยิ่ง; 4 = เห็นด้วย; 3 = ไม่แน่ใจ; 2 = ไม่เห็นด้วย; 1 = ไม่เห็นด้วยอย่างยิ่ง

คำถาม	ระดับความคิดเห็น				
	5	4	3	2	1
มิติที่สาม: คุณลักษณะของระบบ					
คุณลักษณะของระบบ หมายถึง บุคคลที่เข้าถึงระบบพร้อมเพย์ได้ทางกายภาพ หรือมีความสามารถที่จะรับข้อมูลที่ ต้องการจากระบบพร้อมเพย์					
1 ฉันไม่มีความยุ่งยากในการเข้าถึงพร้อมเพย์					
2 ฉันไม่มีความยุ่งยากในการใช้พร้อมเพย์					
3 ฉันไม่มีความยุ่งยากในการรับข้อมูลที่ต้องการจากพร้อมเพย์					
4 การเข้าถึงระบบของฉัน ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมเพย์					
5 การเข้าถึงระบบของฉัน ส่งผลต่อ การรับรู้ของฉันว่าพร้อมเพย์ใช้งานได้ง่าย					
6 การเข้าถึงระบบของฉัน ส่งผลต่อ ความตั้งใจของฉันที่จะใช้งานพร้อมเพย์					
ค่าใช้จ่ายในการเข้าถึง หมายถึง ค่าใช้จ่ายในการบริการพร้อมเพย์ เช่น ค่าบริการและค่าติดต่อสื่อสาร หรือ ผลประโยชน์จากการใช้บริการพร้อมเพย์ที่ไม่ได้อยู่ในรูปของเงิน					
1 การใช้งานพร้อมเพย์มีราคาถูกกว่าบริการอื่น					
2 การใช้งานพร้อมเพย์อาจช่วยฉันประหยัดค่าใช้จ่ายในการทำธุรกรรมทางการเงินของฉัน					
3 ค่าใช้จ่ายในการเข้าถึง ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมเพย์					
4 ค่าใช้จ่ายในการเข้าถึง ส่งผลต่อ การรับรู้ของฉันว่าพร้อมเพย์ใช้งานได้ง่าย					
5 ค่าใช้จ่ายในการเข้าถึง ส่งผลต่อ ความตั้งใจของฉันที่จะใช้งานพร้อมเพย์					
ความเข้ากันได้ หมายถึง บริการซึ่งเป็นที่เข้าใจว่าเป็นไปในทิศทางเดียวกันกับค่านิยม ความเชื่อ นิสัยของลูกค้าที่มี อยู่ และความต้องการในการทำธุรกรรมทางการเงินของฉัน					
1 การใช้งานพร้อมเพย์เข้ากันได้กับมุมมองโดยส่วนใหญ่ในการทำธุรกรรมทางการเงินของฉัน					
2 การใช้งานพร้อมเพย์เข้ากันได้กับวิถีชีวิตของฉัน					
3 การใช้งานพร้อมเพย์เข้ากันได้กับวิถีที่ฉันชอบใช้ในการทำธุรกรรมทางการเงินของฉัน					
4 ความเข้ากันได้ ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมเพย์					
5 ความเข้ากันได้ ส่งผลต่อ การรับรู้ของฉันว่าพร้อมเพย์ใช้งานได้ง่าย					
6 ความเข้ากันได้ ส่งผลต่อ ความตั้งใจของฉันที่จะใช้งานพร้อมเพย์					
ความสะดวก หมายถึง ความพึงพอใจของบุคคลในบริการธุรกรรมทางการเงินที่สะดวก ในด้านของสถานที่ เวลา และ การดำเนินการ					
1 ฉันจะทำธุรกรรมทางการเงินได้สะดวกกว่าโดยใช้งานพร้อมเพย์					
2 ฉันจะทำธุรกรรมทางการเงินได้ไวกว่าโดยใช้งานพร้อมเพย์					
3 ฉันสามารถใช้งานพร้อมเพย์ที่ใดเมื่อไรก็ได้					
4 ความสะดวก ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมเพย์					
5 ความสะดวก ส่งผลต่อ การรับรู้ของฉันว่าพร้อมเพย์ใช้งานได้ง่าย					
6 ความสะดวก ส่งผลต่อ ความตั้งใจเชิงพฤติกรรมของฉันในการใช้งานพร้อมเพย์					
การรับรู้ถึงความเสี่ยง หมายถึง ความน่าจะเป็นหรือความเป็นไปได้ที่ลูกค้าอาจได้รับความเสียหายในรูปของความ เสียหายทางการเงินหรือข้อมูลส่วนบุคคลของผู้ใช้ในการใช้งานบริการพร้อมเพย์					
1 ฉันรู้สึกปลอดภัยในการที่จะให้ข้อมูลส่วนตัวบุคคลในการใช้พร้อมเพย์					
2 ฉันมั่นใจที่จะใช้งานพร้อมเพย์เนื่องจากบุคคลอื่นไม่สามารถเข้าถึงผู้ใช้ของฉันได้					
3 ฉันรู้สึกปลอดภัยในการส่งข้อมูลที่มีความอ่อนไหวผ่านทางพร้อมเพย์					
4 ฉันแน่ใจว่าเงินของฉันจะปลอดภัยในระหว่างการ โอนเงินโดยใช้พร้อมเพย์					
5 การรับรู้ถึงความเสี่ยง ไม่ส่งผลต่อ การรับรู้ของฉันเกี่ยวกับประโยชน์ของพร้อมเพย์					
6 การรับรู้ถึงความเสี่ยง ไม่ส่งผลต่อ การรับรู้ของฉันว่าพร้อมเพย์ใช้งานได้ง่าย					
7 การรับรู้ถึงความเสี่ยง ไม่ส่งผลต่อ ความตั้งใจของฉันที่จะใช้งานพร้อมเพย์					

แบบสอบถามสำหรับงานวิทยานิพนธ์ ในระดับปริญญาโท
เรื่อง การศึกษาทฤษฎีการยอมรับการใช้เทคโนโลยีต่อความตั้งใจที่จะใช้งานพร้อมเพย์ของลูกค้าในกรุงเทพมหานคร

กรุณาออกคะแนนตามระดับความคิดเห็นของคุณ โดยใช้เครื่องหมายถูก ลงในช่องคะแนนตามลำดับดังนี้
 5 = เห็นด้วยอย่างยิ่ง; 4 = เห็นด้วย; 3 = ไม่แน่ใจ; 2 = ไม่เห็นด้วย; 1 = ไม่เห็นด้วยอย่างยิ่ง

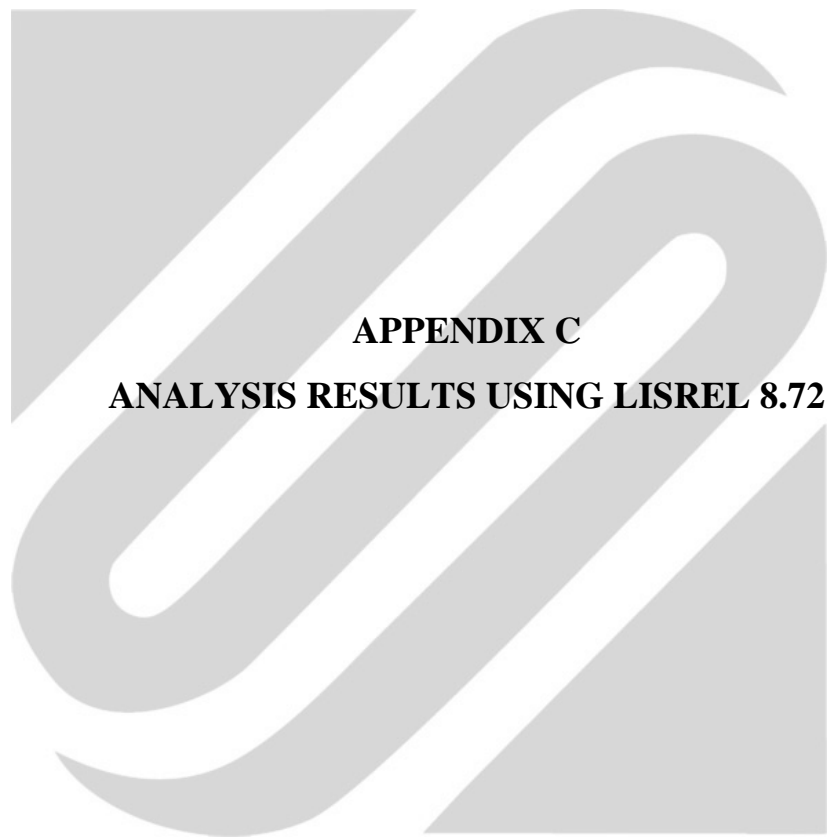
คำถาม	ระดับความคิดเห็น				
	5	4	3	2	1
มิติที่สาม: คุณลักษณะของระบบ					
คุณภาพของระบบ หมายถึง ความสามารถของระบบข้อมูลสารสนเทศในการปฏิบัติการธุรกรรมทางการเงินด้วยความถูกต้องและเชื่อถือได้					
1 การทำธุรกรรมอย่างถูกต้องในระบบใหม่สำคัญต่อการตัดสินใจของฉันทในการปรับใช้ระบบการจ่ายเงินรูปแบบใหม่					
2 การทำธุรกรรมที่เชื่อถือได้ในระบบใหม่สำคัญต่อการตัดสินใจของฉันทในการปรับใช้ระบบการจ่ายเงินรูปแบบใหม่					
3 คุณภาพของระบบ ส่งผลต่อ การรับรู้ของฉันทเกี่ยวกับประโยชน์ของพร้อมเพย์					
4 คุณภาพของระบบ ส่งผลต่อ การรับรู้ของฉันทว่าพร้อมเพย์ใช้งานได้ง่าย					
5 คุณภาพของระบบ ส่งผลต่อ ความตั้งใจของฉันทที่จะใช้งานพร้อมเพย์					
มิติที่สี่: การรับรู้ถึงประโยชน์ หมายถึง ระดับซึ่งบุคคลเชื่อว่าการใช้งานพร้อมเพย์อาจช่วยเพิ่มผลผลิตและประสิทธิภาพในการทำธุรกรรมเพื่อชำระเงิน					
1 การใช้งานพร้อมเพย์ในการทำธุรกรรมทางการเงินของฉันทอาจทำให้ฉันทเสร็จงานได้เร็วกว่าเดิม					
2 การใช้งานพร้อมเพย์อาจเพิ่มประสิทธิภาพในงานของฉันท					
3 การใช้งานพร้อมเพย์อาจทำให้ฉันททำธุรกรรมทางการเงินได้ง่ายขึ้น					
4 ฉันทอาจพบว่าพร้อมเพย์นี้มีประโยชน์					
5 โดยรวมแล้วการใช้งานพร้อมเพย์เป็นประโยชน์					
6 การรับรู้ถึงประโยชน์ ส่งผลต่อ ความตั้งใจเชิงพฤติกรรมของฉันทในการใช้งานพร้อมเพย์					
มิติที่ห้า: การรับรู้ถึงการใช้งานได้ง่าย หมายถึง ระดับซึ่งบุคคลเชื่อว่าการใช้งานพร้อมเพย์อาจไม่ต้องการใช้ความพยายามทางกายและใจ					
1 เรียนรู้การใช้งานพร้อมเพย์ถือเป็นเรื่องง่ายสำหรับฉันท					
2 ฉันทเชื่อว่าเป็นเรื่องง่ายในการใช้งานพร้อมเพย์ในการทำงานที่เกี่ยวข้องกับธุรกรรมทางการเงินของฉันทจนสำเร็จ					
3 ฉันทเชื่อว่าพร้อมเพย์นี้มีความยืดหยุ่นในการมีปฏิสัมพันธ์โต้ตอบ					
4 ฉันทเชื่อว่าพร้อมเพย์นี้ใช้งานได้ง่าย					
5 การรับรู้ถึงการใช้งานได้ง่าย ส่งผลต่อ การรับรู้ของฉันทเกี่ยวกับประโยชน์ของพร้อมเพย์					
6 การรับรู้ถึงการใช้งานได้ง่าย ส่งผลต่อ ความตั้งใจเชิงพฤติกรรมของฉันทในการใช้งานพร้อมเพย์					
มิติที่หก: ความตั้งใจเชิงพฤติกรรมในการใช้งาน หมายถึง ความเป็นไปได้ของลูกค้าในการที่จะเข้าไปใช้พร้อมเพย์					
1 ฉันทตั้งใจที่จะใช้งานพร้อมเพย์เป็นตัวเลือกแรกของฉันท					
2 ฉันทตั้งใจที่จะใช้งานพร้อมเพย์บ่อยๆ เนื่องจากมีความสะดวกมากกว่าและจะให้บริการได้ไวกว่าเดิม					
3 ฉันทตั้งใจที่จะใช้งานพร้อมเพย์ เนื่องจากมีความเหมาะสมกับวิถีชีวิตของฉันท					
4 ฉันทตั้งใจที่จะใช้งานพร้อมเพย์ เนื่องจากฉันทรู้สึกว่ามันง่ายในคุณภาพของระบบ					
5 ฉันทตั้งใจที่จะใช้งานพร้อมเพย์ เนื่องจากได้รับการสนับสนุนจากองค์กรของฉันท หรือธนาคาร หรือรัฐบาล					



APPENDIX B
RELIABILITY TEST RESULTS

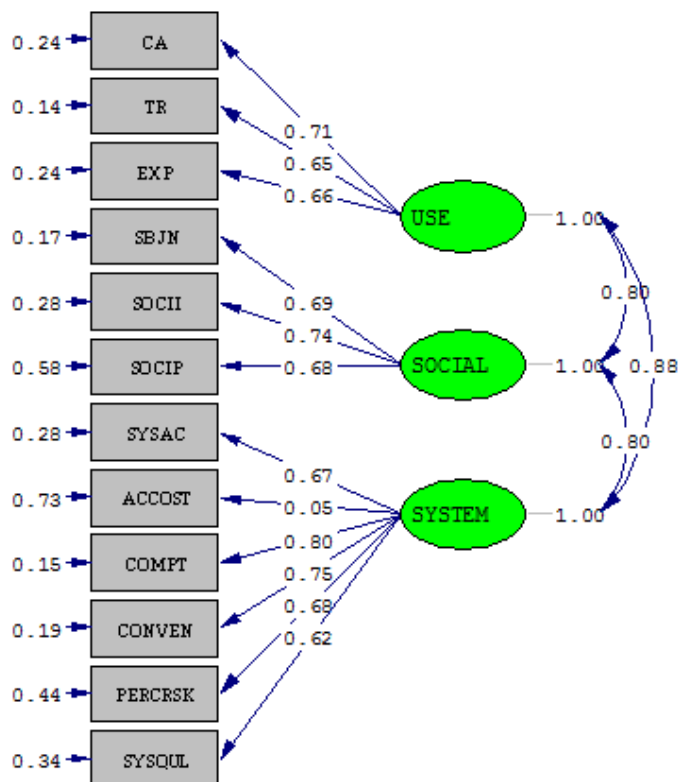
RELIABILITY TEST RESULTS

Question	Cornbrash's Alpha if Item Deleted
Variable	Reliability
User Personal Characteristics	0.9346
Social Characteristics	0.9410
System Characteristics	0.9848
Perceived Usefulness (PU)	0.9448
Perceived Ease of Use (PEOU)	0.9341
Behavioral Intention to Use (BIU)	0.9594
Total	0.9989



APPENDIX C
ANALYSIS RESULTS USING LISREL 8.72

1. RESULTS FOR MODEL X BEFORE ADJUSTMENT



Chi-Square=434.74, df=48, P-value=0.00000, RMSEA=0.115

Time used: 0.031 Seconds

DATE: 7/23/2017

TIME: 2:56

L I S R E L 8.72

BY

Karl G. Jöreskog & Dag Sörbom

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Covariance Matrix

	CA	TR	EXP	SBJN	SOCII	
SOCIP						
-----	-----	-----	-----	-----	-----	-----
CA	0.74					
TR	0.47	0.56				
EXP	0.42	0.43	0.67			
SBJN	0.43	0.41	0.40	0.64		
SOCII	0.38	0.37	0.35	0.49	0.83	
SOCIP	0.28	0.30	0.26	0.43	0.65	
1.04						
SYSAC	0.43	0.36	0.39	0.39	0.37	
0.30						
AC COST	0.03	0.05	0.02	0.05	0.06	
0.04						
COMPT	0.50	0.45	0.45	0.46	0.45	
0.37						
CONVEN	0.47	0.40	0.45	0.44	0.41	
0.32						
PERCRSK	0.48	0.47	0.35	0.48	0.49	
0.49						
SYSQUL	0.37	0.34	0.40	0.35	0.29	
0.22						

Covariance Matrix

	SYSAC	AC COST	COMPT	CONVEN	PERCRSK	
SYSQUL						
-----	-----	-----	-----	-----	-----	-----
SYSAC	0.73					
AC COST	0.02	0.73				
COMPT	0.54	0.04	0.80			
CONVEN	0.51	0.05	0.61	0.75		
PERCRSK	0.42	0.03	0.56	0.47	0.90	
SYSQUL	0.45	0.02	0.49	0.48	0.35	
0.72						

Number of Iterations = 9

LISREL Estimates (Maximum Likelihood)

Measurement Equations

CA = 0.71*USE, Errorvar.= 0.24 , R² = 0.68
 (0.032) (0.027)
 21.76 8.87

TR = 0.65*USE, Errorvar.= 0.14 , R² = 0.76
 (0.025) (0.014)
 25.52 9.65

EXP = 0.66*USE, Errorvar.= 0.24 , R² = 0.65
 (0.029) (0.018)
 22.91 13.08

SBJN = 0.69*SOCIAL, Errorvar.= 0.17 , R² = 0.74
 (0.027) (0.016)
 25.19 10.19

SOCII = 0.74*SOCIAL, Errorvar.= 0.28 , R² = 0.66
 (0.032) (0.023)
 23.19 12.46

SOCIP = 0.68*SOCIAL, Errorvar.= 0.58 , R² = 0.45
 (0.039) (0.037)
 17.78 15.50

SYSAC = 0.67*SYSTEM, Errorvar.= 0.28 , R² = 0.62
 (0.029) (0.018)
 22.79 15.41

ACCOST = 0.049*SYSTEM, Errorvar.= 0.73 , R² = 0.0033
 (0.036) (0.042)
 1.37 17.49

COMPT = 0.80*SYSTEM, Errorvar.= 0.15 , R² = 0.81
 (0.028) (0.013)
 28.21 11.92

CONVEN = 0.75*SYSTEM, Errorvar.= 0.19 , R² = 0.75
 (0.028) (0.014)
 26.53 13.52

PERCRSK = 0.68*SYSTEM, Errorvar.= 0.44 , R² = 0.51
 (0.034) (0.027)
 19.93 16.15

SYSQUL = 0.62*SYSTEM, Errorvar.= 0.34 , R² = 0.53
 (0.030) (0.021)
 20.35 16.06

Error Covariance for TR and CA = 0.0088
 (0.017)
 0.52

Error Covariance for EXP and CA = -0.05
 (0.016)
 -3.16

Error Covariance for SBJN and CA = 0.021
 (0.012)
 1.81

Correlation Matrix of Independent Variables

	USE -----	SOCIAL -----	SYSTEM -----
USE	1.00		
SOCIAL	0.80 (0.02) 34.02	1.00	
SYSTEM	0.88 (0.02) 51.47	0.80 (0.02) 38.11	1.00

Goodness of Fit Statistics

Degrees of Freedom = 48
 Minimum Fit Function Chi-Square = 388.81 (P = 0.0)
 Normal Theory Weighted Least Squares Chi-Square = 434.74 (P = 0.0)
 Chi-Square Difference with 3 Degrees of Freedom = 15.93 (P = 0.0012)

Estimated Non-centrality Parameter (NCP) = 386.74
 90 Percent Confidence Interval for NCP = (323.76 ; 457.19)

Minimum Fit Function Value = 0.64
 Population Discrepancy Function Value (F0) = 0.63
 90 Percent Confidence Interval for F0 = (0.53 ; 0.75)
 Root Mean Square Error of Approximation (RMSEA) = 0.11
 90 Percent Confidence Interval for RMSEA = (0.10 ; 0.12)
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 0.81
 90 Percent Confidence Interval for ECVI = (0.71 ; 0.92)
 ECVI for Saturated Model = 0.25
 ECVI for Independence Model = 18.15

Chi-Square for Independence Model with 66 Degrees of Freedom = 11082.21

Independence AIC = 11106.21
 Model AIC = 494.74
 Saturated AIC = 156.00
 Independence CAIC = 11171.23
 Model CAIC = 657.29
 Saturated CAIC = 578.63

Normed Fit Index (NFI) = 0.96
 Non-Normed Fit Index (NNFI) = 0.96
 Parsimony Normed Fit Index (PNFI) = 0.70
 Comparative Fit Index (CFI) = 0.97
 Incremental Fit Index (IFI) = 0.97

Relative Fit Index (RFI) = 0.95

Critical N (CN) = 116.98

Root Mean Square Residual (RMR) = 0.045

Standardized RMR = 0.054

Goodness of Fit Index (GFI) = 0.89

Adjusted Goodness of Fit Index (AGFI) = 0.83

Parsimony Goodness of Fit Index (PGFI) = 0.55

The Modification Indices Suggest to Add the

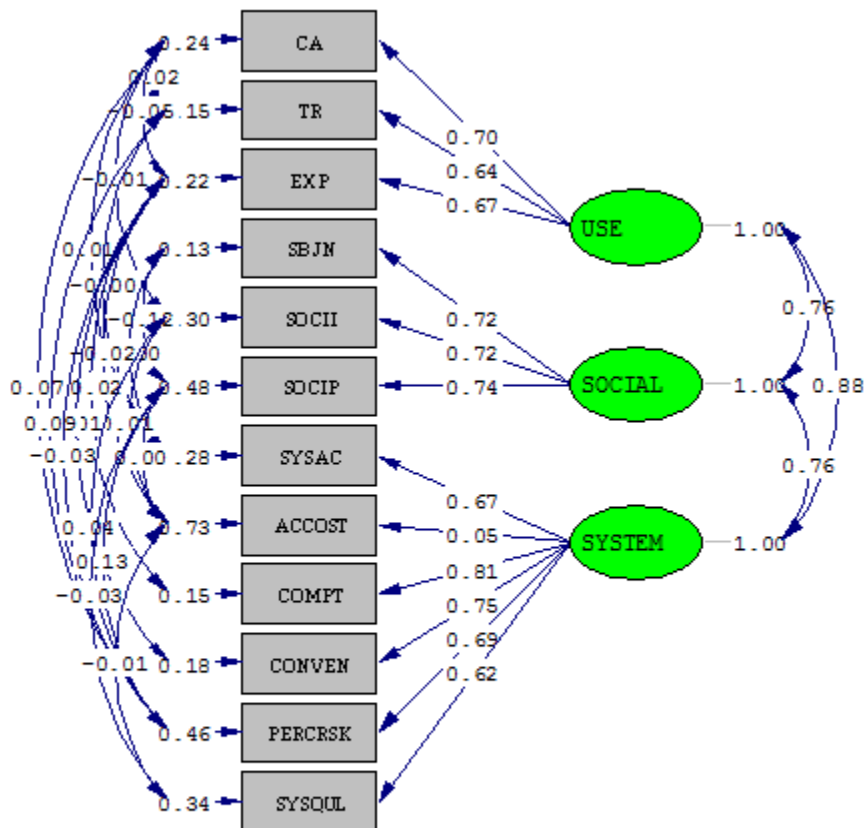
Path to	from	Decrease in Chi-Square	New Estimate
CA	SOCIAL	9.0	-0.23
CA	SYSTEM	9.0	0.58
TR	SOCIAL	11.8	0.19
TR	SYSTEM	11.8	-0.48
SBJN	USE	146.1	0.87
SBJN	SYSTEM	93.1	0.66
SOCII	USE	23.4	-0.36
SOCII	SYSTEM	16.3	-0.29
SOCIP	USE	54.1	-0.55
SOCIP	SYSTEM	36.5	-0.44
PERCRSK	USE	26.5	0.42
PERCRSK	SOCIAL	72.1	0.52
SYSQUL	SOCIAL	9.3	-0.16

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
SBJN	TR	11.1	0.03
SOCII	SBJN	53.1	-0.17
SOCIP	EXP	11.5	-0.06
SOCIP	SBJN	25.5	-0.10
SOCIP	SOCII	157.6	0.29
CONVEN	TR	15.6	-0.03
CONVEN	EXP	9.6	0.03
PERCRSK	TR	47.3	0.08
PERCRSK	EXP	39.2	-0.10
PERCRSK	SOCII	8.3	0.05
PERCRSK	SOCIP	28.8	0.12
PERCRSK	CONVEN	15.1	-0.06
SYSQUL	EXP	15.7	0.05
SYSQUL	SOCII	11.5	-0.05
SYSQUL	SOCIP	8.7	-0.06
SYSQUL	SYSAC	9.3	0.04
SYSQUL	PERCRSK	24.3	-0.09

Time used: 0.031 Seconds

2. RESULTS FOR MODEL X AFTER ADJUSTMENT



Chi-Square=62.21, df=32, P-value=0.05517, RMSEA=0.046

Time used: 0.047 Seconds

DATE: 7/23/2017

TIME: 2:59

L I S R E L 8.72

BY

Karl G. Jöreskog & Dag Sörbom

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Covariance Matrix

	CA	TR	EXP	SBJN	SOCII	
SOCIP	-----	-----	-----	-----	-----	-----

CA	0.74					
TR	0.47	0.56				
EXP	0.42	0.43	0.67			
SBJN	0.43	0.41	0.40	0.64		
SOCII	0.38	0.37	0.35	0.49	0.83	
SOCIP	0.28	0.30	0.26	0.43	0.65	
1.04						
SYSAC	0.43	0.36	0.39	0.39	0.37	
0.30						
ACCCOST	0.03	0.05	0.02	0.05	0.06	
0.04						
COMPT	0.50	0.45	0.45	0.46	0.45	
0.37						
CONVEN	0.47	0.40	0.45	0.44	0.41	
0.32						
PERCRSK	0.48	0.47	0.35	0.48	0.49	
0.49						
SYSQUL	0.37	0.34	0.40	0.35	0.29	
0.22						

Covariance Matrix

	SYSAC	ACCCOST	COMPT	CONVEN	PERCRSK	
SYSQUL	-----	-----	-----	-----	-----	-----

SYSAC	0.73					
ACCCOST	0.02	0.73				
COMPT	0.54	0.04	0.80			
CONVEN	0.51	0.05	0.61	0.75		
PERCRSK	0.42	0.03	0.56	0.47	0.90	
SYSQUL	0.45	0.02	0.49	0.48	0.35	
0.72						

Number of Iterations = 9

LISREL Estimates (Maximum Likelihood)

Measurement Equations

CA = 0.70*USE, Errorvar.= 0.24 , R² = 0.67
 (0.033) (0.028)
 21.41 8.80

TR = 0.64*USE, Errorvar.= 0.15 , R² = 0.73
 (0.026) (0.015)
 24.67 9.80

EXP = 0.67*USE, Errorvar.= 0.22 , R² = 0.67
 (0.029) (0.019)
 23.18 11.79

SBJN = 0.72*SOCIAL, Errorvar.= 0.13 , R² = 0.80
 (0.028) (0.019)
 25.64 6.55

SOCII = 0.72*SOCIAL, Errorvar.= 0.30 , R² = 0.64
 (0.032) (0.023)
 22.57 12.78

SOCIP = 0.74*SOCIAL, Errorvar.= 0.48 , R² = 0.53
 (0.040) (0.039)
 18.69 12.34

SYSAC = 0.67*SYSTEM, Errorvar.= 0.28 , R² = 0.62
 (0.030) (0.018)
 22.78 15.20

ACCOST = 0.052*SYSTEM, Errorvar.= 0.73 , R² = 0.0037
 (0.036) (0.042)
 1.44 17.49

COMPT = 0.81*SYSTEM, Errorvar.= 0.15 , R² = 0.81
 (0.028) (0.013)
 28.29 11.32

CONVEN = 0.75*SYSTEM, Errorvar.= 0.18 , R² = 0.76
 (0.028) (0.014)
 26.60 13.14

PERCRSK = 0.69*SYSTEM, Errorvar.= 0.46 , R² = 0.51
 (0.035) (0.028)
 19.94 16.13

SYSQUL = 0.62*SYSTEM, Errorvar.= 0.34 , R² = 0.53
 (0.030) (0.021)
 20.48 16.00

Correlation Matrix of Independent Variables

	USE	SOCIAL	SYSTEM
USE	1.00		
SOCIAL	0.76 (0.02) 30.62	1.00	
SYSTEM	0.88 (0.02) 47.25	0.76 (0.02) 33.96	1.00

Goodness of Fit Statistics

Degrees of Freedom = 32

Minimum Fit Function Chi-Square = 69.21 (P = 0.05412)

Normal Theory Weighted Least Squares Chi-Square = 62.21 (P = 0.05517)

Chi-Square Difference with 2 Degrees of Freedom = 0.37 (P = 0.42)

Estimated Non-centrality Parameter (NCP) = 180.21

90 Percent Confidence Interval for NCP = (137.82 ; 230.10)

Minimum Fit Function Value = 0.38

Population Discrepancy Function Value (F0) = 0.29

90 Percent Confidence Interval for F0 = (0.23 ; 0.38)

Root Mean Square Error of Approximation (RMSEA) = 0.046

90 Percent Confidence Interval for RMSEA = (0.034 ; 0.087)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 0.50

90 Percent Confidence Interval for ECVI = (0.43 ; 0.58)

ECVI for Saturated Model = 0.25

ECVI for Independence Model = 18.15

Chi-Square for Independence Model with 66 Degrees of Freedom = 11082.21

Independence AIC = 11106.21

Model AIC = 304.21

Saturated AIC = 156.00

Independence CAIC = 11171.23

Model CAIC = 553.46

Saturated CAIC = 578.63

Normed Fit Index (NFI) = 0.98

Non-Normed Fit Index (NNFI) = 0.96

Parsimony Normed Fit Index (PNFI) = 0.47

Comparative Fit Index (CFI) = 0.98

Incremental Fit Index (IFI) = 0.98

Relative Fit Index (RFI) = 0.96

Critical N (CN) = 765.01

Root Mean Square Residual (RMR) = 0.037
 Standardized RMR = 0.037
 Goodness of Fit Index (GFI) = 0.99
 Adjusted Goodness of Fit Index (AGFI) = 0.98
 Parsimony Goodness of Fit Index (PGFI) = 0.59

The Modification Indices Suggest to Add the

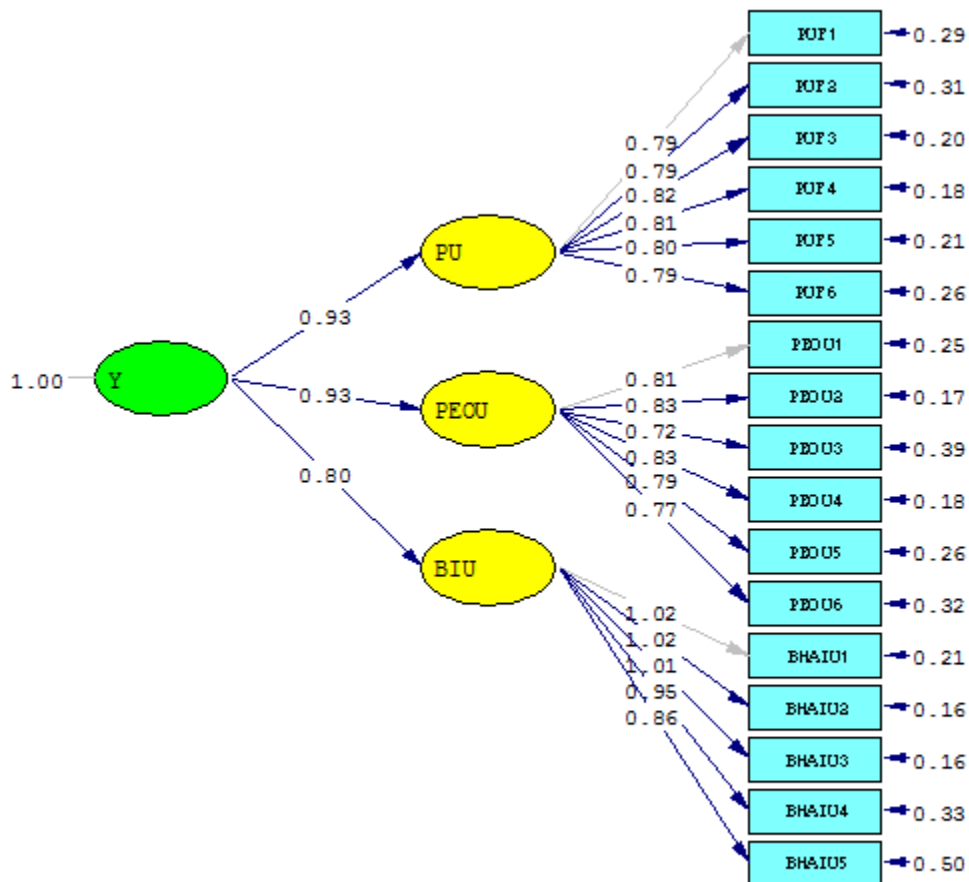
Path to	from	Decrease in Chi-Square	New Estimate
TR	SOCIAL	8.9	0.13
TR	SYSTEM	8.9	-0.41
SBJN	USE	89.9	0.71
SBJN	SYSTEM	64.1	0.60
SOCIP	USE	94.9	-0.80
SOCIP	SYSTEM	76.5	-0.71
PERCRSK	USE	23.6	1.23
PERCRSK	SOCIAL	23.6	0.27

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
SOCII	SBJN	103.3	-0.31
SOCIP	CA	11.9	-0.07
SOCIP	EXP	11.6	-0.06
SOCIP	SOCII	103.3	0.32
PERCRSK	SBJN	23.6	0.08
PERCRSK	COMPT	8.5	0.04
SYSQUL	PERCRSK	14.5	-0.06

Time used: 0.031 Seconds

3. RESULTS FOR MODEL Y BEFORE ADJUSTMENT



Chi-Square=824.53, df=116, P-value=0.00000, RMSEA=0.108

DATE: 7/23/2017

TIME: 3:06

L I S R E L 8.72

BY

Karl G. Jöreskog & Dag Sörbom

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The following lines were read from file
C:\Users\WANADON\Desktop\PRMPAY\path2.SPJ:

```

SYSTEM FILE from file 'C:\Users\WANADON\Desktop\PRMPAY\DATA.dsf'
Sample Size = 613
Latent Variables  PU PEOU BIU Y
Relationships
PUF1 = PU
PUF2 = PU
PUF3 = PU
PUF4 = PU
PUF5 = PU
PUF6 = PU
PEOU1 = PEOU
PEOU2 = PEOU
PEOU3 = PEOU
PEOU4 = PEOU
PEOU5 = PEOU
PEOU6 = PEOU
BHAIU1 = BIU
BHAIU2 = BIU
BHAIU3 = BIU
BHAIU4 = BIU
BHAIU5 = BIU
PU = Y
PEOU = Y
BIU = Y
Path Diagram
End of Problem

Sample Size = 613

```

Covariance Matrix

	PUF1	PUF2	PUF3	PUF4	PUF5	PUF6
PUF1	0.91					
PUF2	0.72	0.93				
PUF3	0.72	0.67	0.87			
PUF4	0.60	0.62	0.67	0.83		
PUF5	0.59	0.58	0.62	0.69	0.85	
PUF6	0.57	0.61	0.62	0.64	0.67	0.88
PEOU1	0.51	0.48	0.55	0.53	0.57	0.53
PEOU2	0.56	0.52	0.59	0.56	0.59	0.56

0.52	PEOU3	0.51	0.55	0.52	0.49	0.51
0.56	PEOU4	0.55	0.55	0.58	0.57	0.60
0.61	PEOU5	0.49	0.55	0.56	0.56	0.57
0.67	PEOU6	0.51	0.55	0.57	0.57	0.57
0.65	BHAIU1	0.52	0.59	0.56	0.59	0.62
0.67	BHAIU2	0.57	0.62	0.60	0.59	0.63
0.66	BHAIU3	0.56	0.61	0.60	0.62	0.64
0.65	BHAIU4	0.50	0.58	0.52	0.57	0.61
0.61	BHAIU5	0.53	0.61	0.50	0.56	0.60

Covariance Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
PEOU6	-----	-----	-----	-----	-----
PEOU1	0.91				
PEOU2	0.77	0.86			
PEOU3	0.57	0.60	0.91		
PEOU4	0.70	0.71	0.60	0.87	
PEOU5	0.58	0.61	0.58	0.65	0.87
PEOU6	0.54	0.59	0.55	0.61	0.75
BHAIU1	0.54	0.58	0.58	0.59	0.64
BHAIU2	0.55	0.58	0.57	0.60	0.65
BHAIU3	0.58	0.62	0.57	0.61	0.62
BHAIU4	0.52	0.58	0.58	0.60	0.64
BHAIU5	0.48	0.52	0.58	0.53	0.62

Covariance Matrix

	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5
BHAIU1	1.24				
BHAIU2	1.07	1.21			
BHAIU3	1.03	1.04	1.18		
BHAIU4	0.96	0.94	0.96	1.23	
BHAIU5	0.83	0.85	0.86	0.94	1.24

Number of Iterations = 27

LISREL Estimates (Maximum Likelihood)

Measurement Equations

PUF1 = 0.79*PU, Errorvar.= 0.29 , R ² = 0.68	
	(0.019)
	15.58
PUF2 = 0.79*PU, Errorvar.= 0.31 , R ² = 0.67	
	(0.032) (0.020)
	24.32 15.69
PUF3 = 0.82*PU, Errorvar.= 0.20 , R ² = 0.77	
	(0.030) (0.014)
	27.37 14.39
PUF4 = 0.81*PU, Errorvar.= 0.18 , R ² = 0.78	
	(0.029) (0.013)
	27.63 14.22
PUF5 = 0.80*PU, Errorvar.= 0.21 , R ² = 0.76	
	(0.030) (0.014)
	26.90 14.66
PUF6 = 0.79*PU, Errorvar.= 0.26 , R ² = 0.71	
	(0.031) (0.017)
	25.49 15.30
PEOU1 = 0.81*PEOU, Errorvar.= 0.25 , R ² = 0.72	
	(0.017)
	15.08
PEOU2 = 0.83*PEOU, Errorvar.= 0.17 , R ² = 0.81	
	(0.028) (0.012)
	30.09 13.63
PEOU3 = 0.72*PEOU, Errorvar.= 0.39 , R ² = 0.58	
	(0.032) (0.024)
	22.65 16.24
PEOU4 = 0.83*PEOU, Errorvar.= 0.18 , R ² = 0.80	
	(0.028) (0.013)
	29.74 13.87
PEOU5 = 0.79*PEOU, Errorvar.= 0.26 , R ² = 0.71	
	(0.029) (0.017)
	26.79 15.24

PEOU6 = 0.77*PEOU, Errorvar.= 0.32 , R² = 0.65
 (0.031) (0.020)
 24.81 15.80

BHAIU1 = 1.02*BIU, Errorvar.= 0.21 , R² = 0.83
 (0.015)
 13.64

BHAIU2 = 1.02*BIU, Errorvar.= 0.16 , R² = 0.87
 (0.026) (0.013)
 40.18 12.37

BHAIU3 = 1.01*BIU, Errorvar.= 0.16 , R² = 0.87
 (0.025) (0.013)
 39.91 12.54

BHAIU4 = 0.95*BIU, Errorvar.= 0.33 , R² = 0.73
 (0.030) (0.022)
 31.78 15.46

BHAIU5 = 0.86*BIU, Errorvar.= 0.50 , R² = 0.59
 (0.033) (0.031)
 25.66 16.40

Structural Equations

PU = 0.93*Y, Errorvar.= 0.13 , R² = 0.87
 (0.042) (0.024)
 22.21 5.47

PEOU = 0.93*Y, Errorvar.= 0.14 , R² = 0.86
 (0.040) (0.024)
 22.96 5.75

BIU = 0.80*Y, Errorvar.= 0.35 , R² = 0.65
 (0.038) (0.030)
 21.17 11.91

Correlation Matrix of Independent Variables

Y

 1.00

Covariance Matrix of Latent Variables

	PU	PEOU	BIU	Y
PU	1.00			
PEOU	0.87	1.00		
BIU	0.75	0.75	1.00	
Y	0.93	0.93	0.80	1.00

Goodness of Fit Statistics

Degrees of Freedom = 116
 Minimum Fit Function Chi-Square = 1114.63 (P = 0.0)
 Normal Theory Weighted Least Squares Chi-Square = 1284.53 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 1168.53
 90 Percent Confidence Interval for NCP = (1057.00 ; 1287.50)

Minimum Fit Function Value = 1.82
 Population Discrepancy Function Value (F0) = 1.91
 90 Percent Confidence Interval for F0 = (1.73 ; 2.10)
 Root Mean Square Error of Approximation (RMSEA) = 0.13
 90 Percent Confidence Interval for RMSEA = (0.12 ; 0.13)
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 2.22
 90 Percent Confidence Interval for ECVI = (2.04 ; 2.41)
 ECVI for Saturated Model = 0.50
 ECVI for Independence Model = 55.48

Chi-Square for Independence Model with 136 Degrees of Freedom = 33921.15

Independence AIC = 33955.15
 Model AIC = 1358.53
 Saturated AIC = 306.00
 Independence CAIC = 34047.27
 Model CAIC = 1559.01
 Saturated CAIC = 1135.01

Normed Fit Index (NFI) = 0.97
 Non-Normed Fit Index (NNFI) = 0.97
 Parsimony Normed Fit Index (PNFI) = 0.82
 Comparative Fit Index (CFI) = 0.97
 Incremental Fit Index (IFI) = 0.97
 Relative Fit Index (RFI) = 0.96
 Critical N (CN) = 85.74

Root Mean Square Residual (RMR) = 0.049
 Standardized RMR = 0.049
 Goodness of Fit Index (GFI) = 0.80
 Adjusted Goodness of Fit Index (AGFI) = 0.74
 Parsimony Goodness of Fit Index (PGFI) = 0.61

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
PUF1	BIU	10.7	-0.13
PUF3	BIU	15.2	-0.13
PUF5	PEOU	8.3	0.14
PUF6	PEOU	10.3	0.17
PUF6	BIU	26.7	0.19
PEOU1	PU	16.0	-0.22
PEOU1	BIU	20.9	-0.17
PEOU2	BIU	14.8	-0.12
PEOU5	BIU	14.8	0.14
PEOU6	PU	27.0	0.31
PEOU6	BIU	59.2	0.31
BHAIU5	PU	10.3	0.16

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
PUF2	PUF1	83.5	0.13
PUF3	PUF1	95.5	0.12
PUF4	PUF1	25.2	-0.06
PUF5	PUF1	21.3	-0.05
PUF5	PUF2	35.0	-0.07
PUF5	PUF3	29.7	-0.06
PUF5	PUF4	47.0	0.07
PUF6	PUF1	25.3	-0.06
PUF6	PUF3	17.4	-0.05
PUF6	PUF5	22.0	0.05
PEOU1	PUF2	12.0	-0.04
PEOU2	PUF2	8.6	-0.03
PEOU2	PUF6	8.7	-0.03
PEOU2	PEOU1	188.4	0.15
PEOU3	PUF2	16.8	0.06
PEOU4	PUF6	13.4	-0.04
PEOU4	PEOU1	16.6	0.05
PEOU5	PUF1	18.4	-0.05
PEOU5	PUF6	18.7	0.05
PEOU5	PEOU1	46.3	-0.08
PEOU5	PEOU2	45.0	-0.07
PEOU6	PUF1	10.6	-0.04
PEOU6	PUF6	74.2	0.11
PEOU6	PEOU1	68.5	-0.11
PEOU6	PEOU2	45.8	-0.08
PEOU6	PEOU4	17.9	-0.05
PEOU6	PEOU5	198.2	0.19
BHAIU2	BHAIU1	29.2	0.07
BHAIU3	PEOU2	9.3	0.03
BHAIU3	PEOU5	11.3	-0.03
BHAIU4	PUF3	13.1	-0.04
BHAIU4	BHAIU2	17.1	-0.05
BHAIU5	PUF2	13.4	0.06
BHAIU5	PUF3	13.7	-0.05
BHAIU5	PEOU3	13.3	0.07
BHAIU5	PEOU5	12.9	0.06

BHAIU5	BHAIU1	13.2	-0.06
BHAIU5	BHAIU2	9.0	-0.04
BHAIU5	BHAIU4	68.8	0.15

Time used: 0.062 Seconds

DATE: 7/23/2017

TIME: 3:07

L I S R E L 8.72

BY

Karl G. J"reskog & Dag S"rbom

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Covariance Matrix

	PUF1	PUF2	PUF3	PUF4	PUF5
PUF6	-----	-----	-----	-----	-----

PUF1	0.91				
PUF2	0.72	0.93			
PUF3	0.72	0.67	0.87		
PUF4	0.60	0.62	0.67	0.83	
PUF5	0.59	0.58	0.62	0.69	0.85
PUF6	0.57	0.61	0.62	0.64	0.67
0.88					
PEOU1	0.51	0.48	0.55	0.53	0.57
0.53					
PEOU2	0.56	0.52	0.59	0.56	0.59
0.56					
PEOU3	0.51	0.55	0.52	0.49	0.51
0.52					
PEOU4	0.55	0.55	0.58	0.57	0.60
0.56					
PEOU5	0.49	0.55	0.56	0.56	0.57
0.61					
PEOU6	0.51	0.55	0.57	0.57	0.57
0.67					
BHAIU1	0.52	0.59	0.56	0.59	0.62
0.65					
BHAIU2	0.57	0.62	0.60	0.59	0.63
0.67					

BHAIU3	0.56	0.61	0.60	0.62	0.64
0.66					
BHAIU4	0.50	0.58	0.52	0.57	0.61
0.65					
BHAIU5	0.53	0.61	0.50	0.56	0.60
0.61					

Covariance Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
PEOU6					
PEOU1	0.91				
PEOU2	0.77	0.86			
PEOU3	0.57	0.60	0.91		
PEOU4	0.70	0.71	0.60	0.87	
PEOU5	0.58	0.61	0.58	0.65	0.87
PEOU6	0.54	0.59	0.55	0.61	0.75
0.91					
BHAIU1	0.54	0.58	0.58	0.59	0.64
0.70					
BHAIU2	0.55	0.58	0.57	0.60	0.65
0.69					
BHAIU3	0.58	0.62	0.57	0.61	0.62
0.68					
BHAIU4	0.52	0.58	0.58	0.60	0.64
0.68					
BHAIU5	0.48	0.52	0.58	0.53	0.62
0.63					

Covariance Matrix

	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5
BHAIU1	1.24				
BHAIU2	1.07	1.21			
BHAIU3	1.03	1.04	1.18		
BHAIU4	0.96	0.94	0.96	1.23	
BHAIU5	0.83	0.85	0.86	0.94	1.24

Number of Iterations = 0

LISREL Estimates (Maximum Likelihood)

W_A_R_N_I_N_G: The error variance for PEOU may not be identified.
Standard Errors, T-Values, Modification Indices,
and Standardized Residuals cannot be computed.

Measurement Equations

$$\text{PUF1} = 0.79 \cdot \text{PU}, \text{ Errorvar.} = 0.29, R^2 = 0.68$$

$$\text{PUF2} = 0.79 \cdot \text{PU}, \text{ Errorvar.} = 0.31, R^2 = 0.67$$

$$\text{PUF3} = 0.82 \cdot \text{PU}, \text{ Errorvar.} = 0.20, R^2 = 0.77$$

$$\text{PUF4} = 0.81 \cdot \text{PU}, \text{ Errorvar.} = 0.18, R^2 = 0.78$$

$$\text{PUF5} = 0.80 \cdot \text{PU}, \text{ Errorvar.} = 0.21, R^2 = 0.76$$

$$\text{PUF6} = 0.79 \cdot \text{PU}, \text{ Errorvar.} = 0.26, R^2 = 0.71$$

$$\text{PEOU1} = 0.81 \cdot \text{PEOU}, \text{ Errorvar.} = 0.25, R^2 = 0.72$$

$$\text{PEOU2} = 0.83 \cdot \text{PEOU}, \text{ Errorvar.} = 0.17, R^2 = 0.81$$

$$\text{PEOU3} = 0.72 \cdot \text{PEOU}, \text{ Errorvar.} = 0.39, R^2 = 0.58$$

$$\text{PEOU4} = 0.83 \cdot \text{PEOU}, \text{ Errorvar.} = 0.18, R^2 = 0.80$$

$$\text{PEOU5} = 0.79 \cdot \text{PEOU}, \text{ Errorvar.} = 0.26, R^2 = 0.71$$

$$\text{PEOU6} = 0.77 \cdot \text{PEOU}, \text{ Errorvar.} = 0.32, R^2 = 0.65$$

$$\text{BHAIU1} = 1.02 \cdot \text{BIU}, \text{ Errorvar.} = 0.21, R^2 = 0.95$$

$$\text{BHAIU2} = 1.02 \cdot \text{BIU}, \text{ Errorvar.} = 0.16, R^2 = 0.96$$

$$\text{BHAIU3} = 1.01 \cdot \text{BIU}, \text{ Errorvar.} = 0.16, R^2 = 0.96$$

$$\text{BHAIU4} = 0.95 \cdot \text{BIU}, \text{ Errorvar.} = 0.33, R^2 = 0.90$$

$$\text{BHAIU5} = 0.86 \cdot \text{BIU}, \text{ Errorvar.} = 0.50, R^2 = 0.83$$

Structural Equations

$$\text{PU} = 0.93 \cdot \text{Y}, \text{ Errorvar.} = 0.13, R^2 = 0.87$$

$$\text{PEOU} = 0.93 \cdot \text{Y}, \text{ Errorvar.} = 0.14, R^2 = 0.86$$

$$\text{BIU} = 0.50 \cdot \text{PU} + 0.50 \cdot \text{PEOU} + 0.80 \cdot \text{Y}, \text{ Errorvar.} = 0.35, R^2 = 0.90$$

Reduced Form Equations

PU = 0.93*Y, Errorvar.= 0.13, $R^2 = 0.87$

PEOU = 0.93*Y, Errorvar.= 0.14, $R^2 = 0.86$

BIU = 1.73*Y, Errorvar.= 0.42, $R^2 = 0.88$

Correlation Matrix of Independent Variables

	Y
Y	1.00

Covariance Matrix of Latent Variables				
	PU	PEOU	BIU	Y
PU	1.00			
PEOU	0.87	1.00		
BIU	1.68	1.68	3.43	
Y	0.93	0.93	1.73	1.00

Goodness of Fit Statistics

Degrees of Freedom = 114
 Minimum Fit Function Chi-Square = 1114.63 (P = 0.0)
 Normal Theory Weighted Least Squares Chi-Square = 3004.38 (P = 0.0)
 Chi-Square Difference with 2 Degrees of Freedom = 1719.85 (P = 0.0)
 Estimated Non-centrality Parameter (NCP) = 2890.38
 90 Percent Confidence Interval for NCP = (2715.38 ; 3072.70)
 Minimum Fit Function Value = 1.82
 Population Discrepancy Function Value (F0) = 4.72
 90 Percent Confidence Interval for F0 = (4.44 ; 5.02)
 Root Mean Square Error of Approximation (RMSEA) = 0.20
 90 Percent Confidence Interval for RMSEA = (0.20 ; 0.21)
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00
 Expected Cross-Validation Index (ECVI) = 5.04
 90 Percent Confidence Interval for ECVI = (4.75 ; 5.33)
 ECVI for Saturated Model = 0.50
 ECVI for Independence Model = 55.48

Chi-Square for Independence Model with 136 Degrees of Freedom = 33921.15

Independence AIC = 33955.15

Model AIC = 3082.38
Saturated AIC = 306.00
Independence CAIC = 34047.27
Model CAIC = 3293.70
Saturated CAIC = 1135.01

Normed Fit Index (NFI) = 0.97
Non-Normed Fit Index (NNFI) = 0.96
Parsimony Normed Fit Index (PNFI) = 0.81
Comparative Fit Index (CFI) = 0.97
Incremental Fit Index (IFI) = 0.97
Relative Fit Index (RFI) = 0.96

Critical N (CN) = 84.48

Root Mean Square Residual (RMR) = 0.85
Standardized RMR = 0.33
Goodness of Fit Index (GFI) = 0.67
Adjusted Goodness of Fit Index (AGFI) = 0.56
Parsimony Goodness of Fit Index (PGFI) = 0.50

Time used: 0.016 Seconds

DATE: 7/23/2017

TIME: 3:07

L I S R E L 8.72

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Covariance Matrix

	PUF1	PUF2	PUF3	PUF4	PUF5	
PUF6						
	-----	-----	-----	-----	-----	-----
	PUF1	0.91				
	PUF2	0.72	0.93			
	PUF3	0.72	0.67	0.87		
	PUF4	0.60	0.62	0.67	0.83	
	PUF5	0.59	0.58	0.62	0.69	0.85
	PUF6	0.57	0.61	0.62	0.64	0.67
0.88	PEOU1	0.51	0.48	0.55	0.53	0.57
0.53	PEOU2	0.56	0.52	0.59	0.56	0.59
0.56	PEOU3	0.51	0.55	0.52	0.49	0.51
0.52	PEOU4	0.55	0.55	0.58	0.57	0.60
0.56	PEOU5	0.49	0.55	0.56	0.56	0.57
0.61	PEOU6	0.51	0.55	0.57	0.57	0.57
0.67	BHAIU1	0.52	0.59	0.56	0.59	0.62
0.65	BHAIU2	0.57	0.62	0.60	0.59	0.63
0.67	BHAIU3	0.56	0.61	0.60	0.62	0.64
0.66	BHAIU4	0.50	0.58	0.52	0.57	0.61
0.65	BHAIU5	0.53	0.61	0.50	0.56	0.60
0.61						

Covariance Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5	
PEOU6						
	-----	-----	-----	-----	-----	-----
	PEOU1	0.91				
	PEOU2	0.77	0.86			
	PEOU3	0.57	0.60	0.91		
	PEOU4	0.70	0.71	0.60	0.87	
	PEOU5	0.58	0.61	0.58	0.65	0.87
	PEOU6	0.54	0.59	0.55	0.61	0.75
0.91	BHAIU1	0.54	0.58	0.58	0.59	0.64
0.70	BHAIU2	0.55	0.58	0.57	0.60	0.65
0.69						

BHAIU3	0.58	0.62	0.57	0.61	0.62
0.68					
BHAIU4	0.52	0.58	0.58	0.60	0.64
0.68					
BHAIU5	0.48	0.52	0.58	0.53	0.62
0.63					

Covariance Matrix

	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5
BHAIU1	1.24				
BHAIU2	1.07	1.21			
BHAIU3	1.03	1.04	1.18		
BHAIU4	0.96	0.94	0.96	1.23	
BHAIU5	0.83	0.85	0.86	0.94	1.24

Number of Iterations = 0

LISREL Estimates (Maximum Likelihood)

Measurement Equations

$$\text{PUF1} = 0.79 * \text{PU}, \text{ Errorvar.} = 0.29, R^2 = 0.68$$

(0.019)
15.58

$$\text{PUF2} = 0.79 * \text{PU}, \text{ Errorvar.} = 0.31, R^2 = 0.67$$

(0.032) (0.020)
24.32 15.69

$$\text{PUF3} = 0.82 * \text{PU}, \text{ Errorvar.} = 0.20, R^2 = 0.77$$

(0.030) (0.014)
27.37 14.39

$$\text{PUF4} = 0.81 * \text{PU}, \text{ Errorvar.} = 0.18, R^2 = 0.78$$

(0.029) (0.013)
27.63 14.22

$$\text{PUF5} = 0.80 * \text{PU}, \text{ Errorvar.} = 0.21, R^2 = 0.76$$

(0.030) (0.014)
26.90 14.66

$$\text{PUF6} = 0.79 * \text{PU}, \text{ Errorvar.} = 0.26, R^2 = 0.71$$

(0.031) (0.017)
25.49 15.30

$$\text{PEOU1} = 0.81 * \text{PEOU}, \text{ Errorvar.} = 0.25, R^2 = 0.72$$

(0.017)	
15.08	

$$\text{PEOU2} = 0.83 * \text{PEOU}, \text{ Errorvar.} = 0.17, R^2 = 0.81$$

(0.028)	(0.012)
30.09	13.63

$$\text{PEOU3} = 0.72 * \text{PEOU}, \text{ Errorvar.} = 0.39, R^2 = 0.58$$

(0.032)	(0.024)
22.65	16.24

$$\text{PEOU4} = 0.83 * \text{PEOU}, \text{ Errorvar.} = 0.18, R^2 = 0.80$$

(0.028)	(0.013)
29.74	13.87

$$\text{PEOU5} = 0.79 * \text{PEOU}, \text{ Errorvar.} = 0.26, R^2 = 0.71$$

(0.029)	(0.017)
26.79	15.24

$$\text{PEOU6} = 0.77 * \text{PEOU}, \text{ Errorvar.} = 0.32, R^2 = 0.65$$

(0.031)	(0.020)
24.81	15.80

$$\text{BHAIU1} = 1.02 * \text{BIU}, \text{ Errorvar.} = 0.21, R^2 = 0.83$$

(0.015)	
13.64	

$$\text{BHAIU2} = 1.02 * \text{BIU}, \text{ Errorvar.} = 0.16, R^2 = 0.87$$

(0.026)	(0.013)
40.18	12.37

$$\text{BHAIU3} = 1.01 * \text{BIU}, \text{ Errorvar.} = 0.16, R^2 = 0.87$$

(0.025)	(0.013)
39.91	12.54

$$\text{BHAIU4} = 0.95 * \text{BIU}, \text{ Errorvar.} = 0.33, R^2 = 0.73$$

(0.030)	(0.022)
31.78	15.46

$$\text{BHAIU5} = 0.86 * \text{BIU}, \text{ Errorvar.} = 0.50, R^2 = 0.59$$

(0.033)	(0.031)
25.66	16.40

Structural Equations

$$\text{PU} = 0.93 * \text{Y}, \text{ Errorvar.} = 0.13, R^2 = 0.87$$

(0.042)	(0.024)
22.21	5.47

PEOU = 0.93*Y, Errorvar.= 0.14 , $R^2 = 0.86$
 (0.040) (0.024)
 22.96 5.75

BIU = 0.80*Y, Errorvar.= 0.35 , $R^2 = 0.65$
 (0.038) (0.030)
 21.17 11.91

Correlation Matrix of Independent Variables

Y

 1.00

Covariance Matrix of Latent Variables

	PU	PEOU	BIU	Y
	-----	-----	-----	-----
PU	1.00			
PEOU	0.87	1.00		
BIU	0.75	0.75	1.00	
Y	0.93	0.93	0.80	1.00

Goodness of Fit Statistics

Degrees of Freedom = 116
 Minimum Fit Function Chi-Square = 1114.63 (P = 0.0)
 Normal Theory Weighted Least Squares Chi-Square = 1284.53 (P = 0.0)
 Chi-Square Difference with 0 Degree of Freedom = 0.0 (P = 1.00)
 Estimated Non-centrality Parameter (NCP) = 1168.53
 90 Percent Confidence Interval for NCP = (1057.00 ; 1287.50)
 Minimum Fit Function Value = 1.82
 Population Discrepancy Function Value (F0) = 1.91
 90 Percent Confidence Interval for F0 = (1.73 ; 2.10)
 Root Mean Square Error of Approximation (RMSEA) = 0.13
 90 Percent Confidence Interval for RMSEA = (0.12 ; 0.13)
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00
 Expected Cross-Validation Index (ECVI) = 2.22
 90 Percent Confidence Interval for ECVI = (2.04 ; 2.41)
 ECVI for Saturated Model = 0.50
 ECVI for Independence Model = 55.48

Chi-Square for Independence Model with 136 Degrees of Freedom = 33921.15

Independence AIC = 33955.15
 Model AIC = 1358.53
 Saturated AIC = 306.00
 Independence CAIC = 34047.27
 Model CAIC = 1559.01
 Saturated CAIC = 1135.01

Normed Fit Index (NFI) = 0.97
 Non-Normed Fit Index (NNFI) = 0.97
 Parsimony Normed Fit Index (PNFI) = 0.82
 Comparative Fit Index (CFI) = 0.97
 Incremental Fit Index (IFI) = 0.97
 Relative Fit Index (RFI) = 0.96

Critical N (CN) = 85.74

Root Mean Square Residual (RMR) = 0.049
 Standardized RMR = 0.049
 Goodness of Fit Index (GFI) = 0.80
 Adjusted Goodness of Fit Index (AGFI) = 0.74
 Parsimony Goodness of Fit Index (PGFI) = 0.61

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
PUF1	BIU	10.7	-0.13
PUF3	BIU	15.2	-0.13
PUF5	PEOU	8.3	0.14
PUF6	PEOU	10.3	0.17
PUF6	BIU	26.7	0.19
PEOU1	PU	16.0	-0.22
PEOU1	BIU	20.9	-0.17
PEOU2	BIU	14.8	-0.12
PEOU5	BIU	14.8	0.14
PEOU6	PU	27.0	0.31
PEOU6	BIU	59.2	0.31
BHAIU5	PU	10.3	0.16

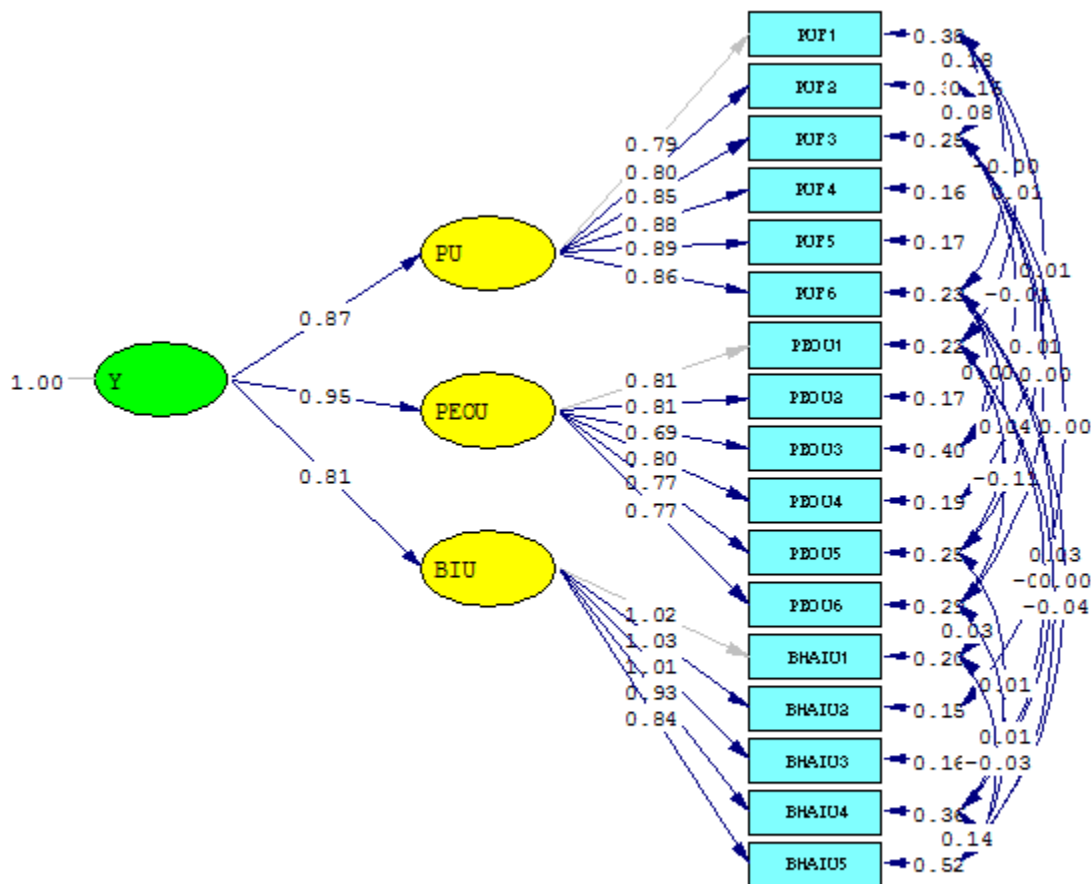
The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
PUF2	PUF1	83.5	0.13
PUF3	PUF1	95.5	0.12
PUF4	PUF1	25.2	-0.06
PUF5	PUF1	21.3	-0.05
PUF5	PUF2	35.0	-0.07
PUF5	PUF3	29.7	-0.06
PUF5	PUF4	47.0	0.07
PUF6	PUF1	25.3	-0.06
PUF6	PUF3	17.4	-0.05
PUF6	PUF5	22.0	0.05
PEOU1	PUF2	12.0	-0.04
PEOU2	PUF2	8.6	-0.03
PEOU2	PUF6	8.7	-0.03

PEOU2	PEOU1	188.4	0.15
PEOU3	PUF2	16.8	0.06
PEOU4	PUF6	13.4	-0.04
PEOU4	PEOU1	16.6	0.05
PEOU5	PUF1	18.4	-0.05
PEOU5	PUF6	18.7	0.05
PEOU5	PEOU1	46.3	-0.08
PEOU5	PEOU2	45.0	-0.07
PEOU6	PUF1	10.6	-0.04
PEOU6	PUF6	74.2	0.11
PEOU6	PEOU1	68.5	-0.11
PEOU6	PEOU2	45.8	-0.08
PEOU6	PEOU4	17.9	-0.05
PEOU6	PEOU5	198.2	0.19
BHAIU2	BHAIU1	29.2	0.07
BHAIU3	PEOU2	9.3	0.03
BHAIU3	PEOU5	11.3	-0.03
BHAIU4	PUF3	13.1	-0.04
BHAIU4	BHAIU2	17.1	-0.05
BHAIU5	PUF2	13.4	0.06
BHAIU5	PUF3	13.7	-0.05
BHAIU5	PEOU3	13.3	0.07
BHAIU5	PEOU5	12.9	0.06
BHAIU5	BHAIU1	13.2	-0.06
BHAIU5	BHAIU2	9.0	-0.04
BHAIU5	BHAIU4	68.8	0.15

Time used: 0.047 Seconds

4. MODEL Y AFTER ADJUSTMENT



Chi-Square=74.10, df=64, P-value=0.05711, RMSEA=0.048

Time used: 0.047 Seconds

DATE: 7/23/2017

TIME: 3:10

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Covariance Matrix

	PUF1	PUF2	PUF3	PUF4	PUF5	
PUF6	-----	-----	-----	-----	-----	----

PUF1	0.91					
PUF2	0.72	0.93				
PUF3	0.72	0.67	0.87			
PUF4	0.60	0.62	0.67	0.83		
PUF5	0.59	0.58	0.62	0.69	0.85	
PUF6	0.57	0.61	0.62	0.64	0.67	
0.88						
PEOU1	0.51	0.48	0.55	0.53	0.57	
0.53						
PEOU2	0.56	0.52	0.59	0.56	0.59	
0.56						
PEOU3	0.51	0.55	0.52	0.49	0.51	
0.52						
PEOU4	0.55	0.55	0.58	0.57	0.60	
0.56						
PEOU5	0.49	0.55	0.56	0.56	0.57	
0.61						
PEOU6	0.51	0.55	0.57	0.57	0.57	
0.67						
BHAIU1	0.52	0.59	0.56	0.59	0.62	
0.65						
BHAIU2	0.57	0.62	0.60	0.59	0.63	
0.67						
BHAIU3	0.56	0.61	0.60	0.62	0.64	
0.66						
BHAIU4	0.50	0.58	0.52	0.57	0.61	
0.65						
BHAIU5	0.53	0.61	0.50	0.56	0.60	
0.61						

Covariance Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5	
PEOU6	-----	-----	-----	-----	-----	----

PEOU1	0.91					
PEOU2	0.77	0.86				
PEOU3	0.57	0.60	0.91			
PEOU4	0.70	0.71	0.60	0.87		
PEOU5	0.58	0.61	0.58	0.65	0.87	
PEOU6	0.54	0.59	0.55	0.61	0.75	
0.91						
BHAIU1	0.54	0.58	0.58	0.59	0.64	
0.70						

BHAIU2	0.55	0.58	0.57	0.60	0.65
0.69					
BHAIU3	0.58	0.62	0.57	0.61	0.62
0.68					
BHAIU4	0.52	0.58	0.58	0.60	0.64
0.68					
BHAIU5	0.48	0.52	0.58	0.53	0.62
0.63					

Covariance Matrix

	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5
BHAIU1	1.24				
BHAIU2	1.07	1.21			
BHAIU3	1.03	1.04	1.18		
BHAIU4	0.96	0.94	0.96	1.23	
BHAIU5	0.83	0.85	0.86	0.94	1.24

Number of Iterations = 9

LISREL Estimates (Maximum Likelihood)

Measurement Equations

$$\text{PUF1} = 0.79 * \text{PU}, \text{ Errorvar.} = 0.38, R^2 = 0.58$$

(0.024)
15.66

$$\text{PUF2} = 0.80 * \text{PU}, \text{ Errorvar.} = 0.38, R^2 = 0.59$$

(0.029) (0.024)
27.37 15.80

$$\text{PUF3} = 0.85 * \text{PU}, \text{ Errorvar.} = 0.25, R^2 = 0.71$$

(0.028) (0.017)
30.71 14.82

$$\text{PUF4} = 0.88 * \text{PU}, \text{ Errorvar.} = 0.16, R^2 = 0.80$$

(0.037) (0.013)
24.00 13.17

$$\text{PUF5} = 0.89 * \text{PU}, \text{ Errorvar.} = 0.17, R^2 = 0.80$$

(0.037) (0.013)
23.95 13.24

$$\text{PUF6} = 0.86 * \text{PU}, \text{ Errorvar.} = 0.23, R^2 = 0.73$$

(0.038) (0.016)
22.77 14.57

$$\begin{aligned} \text{PEOU1} &= 0.81 * \text{PEOU}, \text{ Errorvar.} = 0.22, R^2 = 0.76 \\ &\quad (0.016) \\ &\quad 14.23 \end{aligned}$$

$$\begin{aligned} \text{PEOU2} &= 0.81 * \text{PEOU}, \text{ Errorvar.} = 0.17, R^2 = 0.80 \\ &\quad (0.026) \quad (0.012) \\ &\quad 31.69 \quad 14.29 \end{aligned}$$

$$\begin{aligned} \text{PEOU3} &= 0.69 * \text{PEOU}, \text{ Errorvar.} = 0.40, R^2 = 0.56 \\ &\quad (0.030) \quad (0.024) \\ &\quad 22.88 \quad 16.53 \end{aligned}$$

$$\begin{aligned} \text{PEOU4} &= 0.80 * \text{PEOU}, \text{ Errorvar.} = 0.19, R^2 = 0.78 \\ &\quad (0.026) \quad (0.013) \\ &\quad 30.76 \quad 14.72 \end{aligned}$$

$$\begin{aligned} \text{PEOU5} &= 0.77 * \text{PEOU}, \text{ Errorvar.} = 0.25, R^2 = 0.71 \\ &\quad (0.027) \quad (0.016) \\ &\quad 28.23 \quad 15.57 \end{aligned}$$

$$\begin{aligned} \text{PEOU6} &= 0.77 * \text{PEOU}, \text{ Errorvar.} = 0.29, R^2 = 0.68 \\ &\quad (0.034) \quad (0.019) \\ &\quad 22.69 \quad 15.13 \end{aligned}$$

$$\begin{aligned} \text{BHAIU1} &= 1.02 * \text{BIU}, \text{ Errorvar.} = 0.20, R^2 = 0.84 \\ &\quad (0.015) \\ &\quad 13.22 \end{aligned}$$

$$\begin{aligned} \text{BHAIU2} &= 1.03 * \text{BIU}, \text{ Errorvar.} = 0.15, R^2 = 0.87 \\ &\quad (0.025) \quad (0.013) \\ &\quad 40.81 \quad 12.05 \end{aligned}$$

$$\begin{aligned} \text{BHAIU3} &= 1.01 * \text{BIU}, \text{ Errorvar.} = 0.16, R^2 = 0.87 \\ &\quad (0.025) \quad (0.013) \\ &\quad 40.38 \quad 12.34 \end{aligned}$$

$$\begin{aligned} \text{BHAIU4} &= 0.93 * \text{BIU}, \text{ Errorvar.} = 0.36, R^2 = 0.70 \\ &\quad (0.030) \quad (0.023) \\ &\quad 30.77 \quad 15.59 \end{aligned}$$

$$\begin{aligned} \text{BHAIU5} &= 0.84 * \text{BIU}, \text{ Errorvar.} = 0.52, R^2 = 0.57 \\ &\quad (0.035) \quad (0.033) \\ &\quad 23.81 \quad 16.02 \end{aligned}$$

Structural Equations

$$\begin{aligned} \text{PU} &= 0.87 * \text{Y}, \text{ Errorvar.} = 0.10, R^2 = 0.88 \\ &\quad (0.043) \quad (0.021) \\ &\quad 20.16 \quad 4.89 \end{aligned}$$

PEOU = 0.95*Y, Errorvar.= 0.16 , R² = 0.85
 (0.040) (0.025)
 23.56 6.37

BIU = 0.81*Y, Errorvar.= 0.35 , R² = 0.65
 (0.038) (0.029)
 21.32 11.93

Correlation Matrix of Independent Variables

	Y
Y	1.00

Covariance Matrix of Latent Variables

	PU	PEOU	BIU	Y
PU	0.86			
PEOU	0.82	1.06		
BIU	0.70	0.77	1.00	
Y	0.87	0.95	0.81	1.00

Goodness of Fit Statistics

Degrees of Freedom = 64
 Minimum Fit Function Chi-Square = 71.83 (P = 0.05823)
 Normal Theory Weighted Least Squares Chi-Square = 74.10 (P = 0.05711)
 Chi-Square Difference with 5 Degrees of Freedom = 28.56 (P = 0.05201)

Estimated Non-centrality Parameter (NCP) = 630.10
 90 Percent Confidence Interval for NCP = (548.20 ; 719.48)

Minimum Fit Function Value = 1.15
 Population Discrepancy Function Value (F0) = 1.03
 90 Percent Confidence Interval for F0 = (0.90 ; 1.18)
 Root Mean Square Error of Approximation (RMSEA) = 0.048
 90 Percent Confidence Interval for RMSEA = (0.038 ; 0.092)
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 1.38
 90 Percent Confidence Interval for ECVI = (1.24 ; 1.52)
 ECVI for Saturated Model = 0.50
 ECVI for Independence Model = 55.48

Chi-Square for Independence Model with 136 Degrees of Freedom = 33921.15

Independence AIC = 33955.15
 Model AIC = 842.10
 Saturated AIC = 306.00
 Independence CAIC = 34047.27
 Model CAIC = 1161.79
 Saturated CAIC = 1135.01

Normed Fit Index (NFI) = 0.99
 Non-Normed Fit Index (NNFI) = 0.98
 Parsimony Normed Fit Index (PNFI) = 0.89
 Comparative Fit Index (CFI) = 0.99
 Incremental Fit Index (IFI) = 0.98
 Relative Fit Index (RFI) = 0.97

Critical N (CN) = 771.32

Root Mean Square Residual (RMR) = 0.048
 Standardized RMR = 0.046
 Goodness of Fit Index (GFI) = 0.96
 Adjusted Goodness of Fit Index (AGFI) = 0.95
 Parsimony Goodness of Fit Index (PGFI) = 0.54

The Modification Indices Suggest to Add the

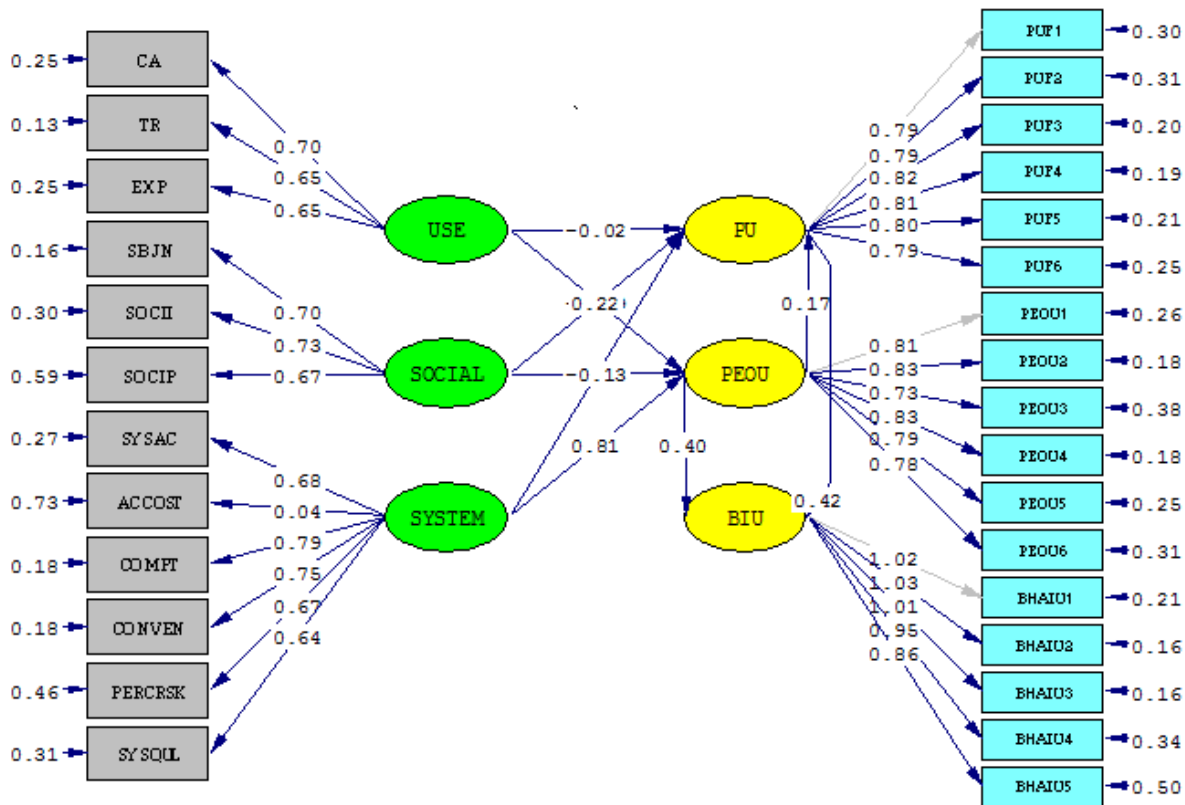
Path to	from	Decrease in Chi-Square	New Estimate
PUF2	BIU	9.7	0.12
PUF4	PEOU	14.0	-0.18
PUF6	BIU	10.5	0.12
PEOU1	PU	15.8	-0.23
PEOU1	BIU	14.0	-0.13
PEOU2	BIU	9.8	-0.10
PEOU5	BIU	9.4	0.11
PEOU6	PU	8.8	0.19
PEOU6	BIU	26.0	0.20
BHAIU5	PU	10.7	0.17

The Modification Indices Suggest to Add an Error Covariance
 Between and Decrease in Chi-Square New Estimate

PEOU2	PEOU1	107.0	0.12
PEOU5	PEOU1	21.6	-0.06
PEOU5	PEOU2	41.4	-0.07
PEOU6	PUF6	58.1	0.09
PEOU6	PEOU2	32.8	-0.07
PEOU6	PEOU4	32.1	-0.07
PEOU6	PEOU5	102.9	0.13
BHAIU2	BHAIU1	16.1	0.05
BHAIU5	PUF3	12.6	-0.05
BHAIU5	PEOU3	9.2	0.06
BHAIU5	PEOU5	10.0	0.05

Time used: 0.047 Seconds

5. OVERALL MODEL BEFORE ADJUSTMENT



Chi-Square=922.47, df=265, P-value=0.00000, RMSEA=0.91



DATE: 7/23/2017
TIME: 1:03

L I S R E L 8.72
BY

Karl G. Jöreskog & Dag Sörbom

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The following lines were read from file
C:\Users\WANADON\Desktop\PRMPAY\Path.SPJ:

SYSTEM FILE from file 'C:\Users\WANADON\Desktop\PRMPAY\DATA.dsf'

Sample Size = 613

Latent Variables PU PEOU BIU USE SOCIAL SYSTEM

Relationships

PUF1 = PU

PUF2 = PU

PUF3 = PU

PUF4 = PU

PUF5 = PU

PUF6 = PU

PEOU1 = PEOU

PEOU2 = PEOU

PEOU3 = PEOU

PEOU4 = PEOU

PEOU5 = PEOU

PEOU6 = PEOU

BHAIU1 = BIU

BHAIU2 = BIU

BHAIU3 = BIU

BHAIU4 = BIU

BHAIU5 = BIU

CA = USE

TR = USE

EXP = USE

SBJN = SOCIAL

SOCII = SOCIAL

SOCIP = SOCIAL

SYSAC = SYSTEM

ACCOST = SYSTEM

COMPT = SYSTEM

CONVEN = SYSTEM

PERCRSK = SYSTEM

SYSQUL = SYSTEM

PU = PEOU

BIU = PU PEOU

PU = USE SOCIAL SYSTEM

PEOU = USE SOCIAL SYSTEM

Path Diagram

End of Problem

Sample Size = 613

Covariance Matrix

	PUF1	PUF2	PUF3	PUF4	PUF5	
PUF6						
	-----	-----	-----	-----	-----	-----
0.88	PUF1	0.92				
0.54	PUF2	0.72	0.93			
0.56	PUF3	0.73	0.67	0.87		
0.52	PUF4	0.60	0.62	0.67	0.84	
0.56	PUF5	0.60	0.58	0.62	0.69	0.85
0.61	PUF6	0.58	0.61	0.62	0.64	0.67
0.67	PEOU1	0.52	0.49	0.56	0.53	0.58
0.65	PEOU2	0.57	0.52	0.59	0.57	0.59
0.67	PEOU3	0.51	0.55	0.52	0.49	0.51
0.66	PEOU4	0.55	0.55	0.58	0.58	0.61
0.65	PEOU5	0.49	0.55	0.56	0.56	0.57
0.61	PEOU6	0.51	0.55	0.57	0.57	0.57
0.48	BHAIU1	0.53	0.60	0.57	0.59	0.62
0.41	BHAIU2	0.58	0.62	0.60	0.60	0.63
0.42	BHAIU3	0.56	0.61	0.60	0.62	0.64
0.45	BHAIU4	0.50	0.58	0.52	0.57	0.61
0.40	BHAIU5	0.53	0.61	0.50	0.55	0.60
0.30	CA	0.45	0.48	0.50	0.48	0.50
0.51	TR	0.37	0.39	0.39	0.40	0.42
0.03	EXP	0.39	0.40	0.43	0.43	0.43
0.58	SBJN	0.41	0.45	0.42	0.42	0.44
	SOCII	0.37	0.38	0.36	0.36	0.38
	SOCIP	0.30	0.36	0.26	0.26	0.29
	SYSAC	0.49	0.49	0.52	0.53	0.52
	ACCOST	0.03	0.04	0.02	0.01	0.03
	COMPT	0.55	0.56	0.57	0.57	0.59

CONVEN	0.56	0.53	0.57	0.54	0.57
0.57					
PERCRSK	0.42	0.51	0.42	0.46	0.48
0.50					
SYSQUL	0.48	0.47	0.50	0.51	0.50
0.51					

Covariance Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
PEOU6					
PEOU1	0.92				
PEOU2	0.77	0.87			
PEOU3	0.57	0.60	0.91		
PEOU4	0.71	0.71	0.60	0.87	
PEOU5	0.59	0.62	0.57	0.65	0.87
PEOU6	0.54	0.59	0.56	0.61	0.75
0.91					
BHAIU1	0.55	0.58	0.58	0.59	0.64
0.70					
BHAIU2	0.56	0.59	0.57	0.60	0.65
0.69					
BHAIU3	0.58	0.62	0.57	0.61	0.62
0.68					
BHAIU4	0.53	0.58	0.58	0.60	0.64
0.68					
BHAIU5	0.48	0.51	0.58	0.53	0.62
0.63					
CA	0.45	0.46	0.43	0.47	0.45
0.47					
TR	0.40	0.42	0.40	0.43	0.41
0.41					
EXP	0.49	0.48	0.41	0.50	0.46
0.44					
SBJN	0.41	0.42	0.45	0.43	0.44
0.43					
SOCII	0.33	0.36	0.46	0.39	0.36
0.39					
SOCIP	0.25	0.28	0.44	0.28	0.28
0.29					
SYSAC	0.47	0.49	0.46	0.51	0.50
0.50					
ACCOST	0.01	-0.01	0.02	0.01	0.03
0.05					
COMPT	0.54	0.55	0.52	0.55	0.55
0.55					
CONVEN	0.53	0.55	0.50	0.55	0.55
0.57					
PERCRSK	0.42	0.44	0.50	0.46	0.46
0.51					
SYSQUL	0.51	0.51	0.45	0.51	0.53
0.50					

Covariance Matrix

	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5	
CA						
-----	-----	-----	-----	-----	-----	-----
BHAIU1	1.25					
BHAIU2	1.07	1.22				
BHAIU3	1.03	1.05	1.19			
BHAIU4	0.96	0.95	0.96	1.24		
BHAIU5	0.84	0.86	0.86	0.94	1.24	
CA	0.61	0.60	0.57	0.54	0.52	
0.74						
TR	0.52	0.50	0.50	0.49	0.47	
0.47						
EXP	0.46	0.45	0.47	0.42	0.42	
0.42						
SBJN	0.53	0.53	0.53	0.48	0.51	
0.43						
SOCII	0.55	0.51	0.50	0.49	0.59	
0.38						
SOCIP	0.50	0.45	0.46	0.47	0.58	
0.28						
SYSAC	0.54	0.54	0.52	0.49	0.47	
0.43						
ACCOST	0.04	0.06	0.08	0.04	0.02	
0.03						
COMPT	0.68	0.67	0.69	0.66	0.60	
0.50						
CONVEN	0.60	0.62	0.61	0.57	0.54	
0.47						
PERCRSK	0.71	0.67	0.67	0.72	0.66	
0.48						
SYSQUL	0.44	0.45	0.45	0.46	0.45	
0.37						

Covariance Matrix

	TR	EXP	SBJN	SOCII	SOCIP	
SYSAC						
-----	-----	-----	-----	-----	-----	-----
TR	0.56					
EXP	0.43	0.67				
SBJN	0.41	0.40	0.64			
SOCII	0.37	0.35	0.49	0.83		
SOCIP	0.30	0.26	0.43	0.65	1.04	
SYSAC	0.36	0.39	0.39	0.37	0.30	
0.73						
ACCOST	0.05	0.02	0.05	0.06	0.04	
0.02						
COMPT	0.45	0.45	0.46	0.45	0.37	
0.54						

CONVEN	0.40	0.45	0.44	0.41	0.32
0.51					
PERCRSK	0.47	0.35	0.48	0.49	0.49
0.42					
SYSQUL	0.34	0.40	0.35	0.29	0.22
0.45					

Covariance Matrix

	ACCCOST	COMPT	CONVEN	PERCRSK	SYSQUL
ACCCOST	0.73				
COMPT	0.04	0.80			
CONVEN	0.05	0.61	0.75		
PERCRSK	0.03	0.56	0.47	0.90	
SYSQUL	0.02	0.49	0.48	0.35	0.72

Number of Iterations = 22

LISREL Estimates (Maximum Likelihood)

Measurement Equations

PUF1 = 0.79*PU, Errorvar.= 0.30 , R² = 0.68
 (0.019)
 15.78

PUF2 = 0.79*PU, Errorvar.= 0.31 , R² = 0.66
 (0.032) (0.020)
 24.28 15.87

PUF3 = 0.82*PU, Errorvar.= 0.20 , R² = 0.77
 (0.030) (0.014)
 27.12 14.81

PUF4 = 0.81*PU, Errorvar.= 0.19 , R² = 0.78
 (0.029) (0.013)
 27.48 14.61

PUF5 = 0.80*PU, Errorvar.= 0.21 , R² = 0.76
 (0.030) (0.014)
 26.95 14.90

PUF6 = 0.79*PU, Errorvar.= 0.25 , R² = 0.71
 (0.031) (0.016)
 25.65 15.45

PEOU1 = 0.81*PEOU, Errorvar.= 0.26 , R² = 0.71
 (0.017)
 15.32

PEOU2 = 0.83*PEOU, Errorvar.= 0.18 , R² = 0.79
 (0.028) (0.013)
 29.40 14.11

PEOU3 = 0.73*PEOU, Errorvar.= 0.38 , R² = 0.58
 (0.032) (0.023)
 22.70 16.29

PEOU4 = 0.83*PEOU, Errorvar.= 0.18 , R² = 0.79
 (0.028) (0.013)
 29.30 14.17

PEOU5 = 0.79*PEOU, Errorvar.= 0.25 , R² = 0.72
 (0.029) (0.016)
 26.85 15.28

PEOU6 = 0.78*PEOU, Errorvar.= 0.31 , R² = 0.66
 (0.031) (0.020)
 24.98 15.82

BHAIU1 = 1.02*BIU, Errorvar.= 0.21 , R² = 0.83
 (0.015)
 13.68

BHAIU2 = 1.03*BIU, Errorvar.= 0.16 , R² = 0.87
 (0.025) (0.013)
 40.44 12.36

BHAIU3 = 1.01*BIU, Errorvar.= 0.16 , R² = 0.87
 (0.025) (0.013)
 40.09 12.58

BHAIU4 = 0.95*BIU, Errorvar.= 0.34 , R² = 0.73
 (0.030) (0.022)
 31.79 15.50

BHAIU5 = 0.86*BIU, Errorvar.= 0.50 , R² = 0.59
 (0.033) (0.031)
 25.69 16.41

CA = 0.70*USE, Errorvar.= 0.25 , R² = 0.66
 (0.029) (0.018)
 23.85 14.09

TR = 0.65*USE, Errorvar.= 0.13 , R² = 0.77
 (0.025) (0.011)
 26.67 11.66

EXP = 0.65*USE, Errorvar.= 0.25 , R² = 0.63
 (0.028) (0.017)
 22.82 14.64

SBJN = 0.70*SOCIAL, Errorvar.= 0.16 , R² = 0.76
 (0.027) (0.016)
 25.65 9.75

SOCII = 0.73*SOCIAL, Errorvar.= 0.30 , R² = 0.64
 (0.032) (0.023)
 22.78 13.00

SOCIP = 0.67*SOCIAL, Errorvar.= 0.59 , R² = 0.43
 (0.039) (0.038)
 17.36 15.70

SYSAC = 0.68*SYSTEM, Errorvar.= 0.27 , R² = 0.63
 (0.029) (0.017)
 23.34 15.97

ACCOST = 0.043*SYSTEM, Errorvar.= 0.73 , R² = 0.0026
 (0.035) (0.042)
 1.23 17.49

COMPT = 0.79*SYSTEM, Errorvar.= 0.18 , R² = 0.78
 (0.029) (0.012)
 27.52 14.21

CONVEN = 0.75*SYSTEM, Errorvar.= 0.18 , R² = 0.76
 (0.028) (0.013)
 26.89 14.62

PERCRSK = 0.67*SYSTEM, Errorvar.= 0.46 , R² = 0.49
 (0.034) (0.028)
 19.63 16.64

SYSQUL = 0.64*SYSTEM, Errorvar.= 0.31 , R² = 0.57
 (0.030) (0.019)
 21.61 16.33

Structural Equations

PU = 0.17*PEOU-0.025*USE-0.088*SOCIAL+0.87*SYSTEM, Errorvar.= 0.13, R² =
 0.87
 (0.067) (0.070) (0.053) (0.100) (0.017)
 2.46 -0.35 -1.67 8.71 7.72

PEOU = 0.22*USE - 0.13*SOCIAL + 0.81*SYSTEM, Errorvar.= 0.18 , R² =
 0.82
 (0.075) (0.055) (0.075) (0.020)
 2.96 -2.27 10.69 8.95

$$\text{BIU} = 0.42 \cdot \text{PU} + 0.40 \cdot \text{PEOU}, \text{ Errorvar.} = 0.37, R^2 = 0.63$$

(0.066)	(0.065)	(0.028)
6.42	6.06	13.44

Reduced Form Equations

$$\text{PU} = 0.012 \cdot \text{USE} - 0.11 \cdot \text{SOCIAL} + 1.00 \cdot \text{SYSTEM}, \text{ Errorvar.} = 0.14, R^2 = 0.86$$

(0.073)	(0.053)	(0.079)
0.17	-2.04	12.74

$$\text{PEOU} = 0.22 \cdot \text{USE} - 0.13 \cdot \text{SOCIAL} + 0.81 \cdot \text{SYSTEM}, \text{ Errorvar.} = 0.18, R^2 = 0.82$$

(0.075)	(0.055)	(0.075)
2.96	-2.27	10.69

$$\text{BIU} = 0.093 \cdot \text{USE} - 0.096 \cdot \text{SOCIAL} + 0.74 \cdot \text{SYSTEM}, \text{ Errorvar.} = 0.44, R^2 = 0.56$$

(0.052)	(0.037)	(0.059)
1.80	-2.59	12.56

Correlation Matrix of Independent Variables

	USE	SOCIAL	SYSTEM
USE	1.00		
SOCIAL	0.82 (0.02) 38.37	1.00	
SYSTEM	0.88 (0.01) 59.21	0.80 (0.02) 38.85	1.00

Covariance Matrix of Latent Variables

	PU	PEOU	BIU	USE	SOCIAL
SYSTEM					
PU	1.00				
PEOU	0.87	1.00			
BIU	0.77	0.76	1.00		
USE	0.81	0.83	0.67	1.00	
SOCIAL	0.71	0.70	0.58	0.82	1.00
SYSTEM	0.93	0.90	0.75	0.88	0.80
1.00					

Goodness of Fit Statistics

Degrees of Freedom = 365
 Minimum Fit Function Chi-Square = 2191.19 (P = 0.0)
 Normal Theory Weighted Least Squares Chi-Square = 2622.47 (P = 0.0)
 Estimated Non-centrality Parameter (NCP) = 2257.47
 90 Percent Confidence Interval for NCP = (2098.62 ; 2423.73)

Minimum Fit Function Value = 3.58
 Population Discrepancy Function Value (F0) = 3.69
 90 Percent Confidence Interval for F0 = (3.43 ; 3.96)
 Root Mean Square Error of Approximation (RMSEA) = 0.10
 90 Percent Confidence Interval for RMSEA = (0.097 ; 0.10)
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 4.51
 90 Percent Confidence Interval for ECVI = (4.25 ; 4.79)
 ECVI for Saturated Model = 1.42
 ECVI for Independence Model = 134.12

Chi-Square for Independence Model with 406 Degrees of Freedom = 82023.95

Independence AIC = 82081.95
 Model AIC = 2762.47
 Saturated AIC = 870.00
 Independence CAIC = 82239.08
 Model CAIC = 3141.76
 Saturated CAIC = 3226.99

Normed Fit Index (NFI) = 0.97
 Non-Normed Fit Index (NNFI) = 0.98
 Parsimony Normed Fit Index (PNFI) = 0.87
 Comparative Fit Index (CFI) = 0.98
 Incremental Fit Index (IFI) = 0.98
 Relative Fit Index (RFI) = 0.97

Critical N (CN) = 168.32

Root Mean Square Residual (RMR) = 0.056
 Standardized RMR = 0.059
 Goodness of Fit Index (GFI) = 0.77
 Adjusted Goodness of Fit Index (AGFI) = 0.73
 Parsimony Goodness of Fit Index (PGFI) = 0.65

The Modification Indices Suggest to Add the

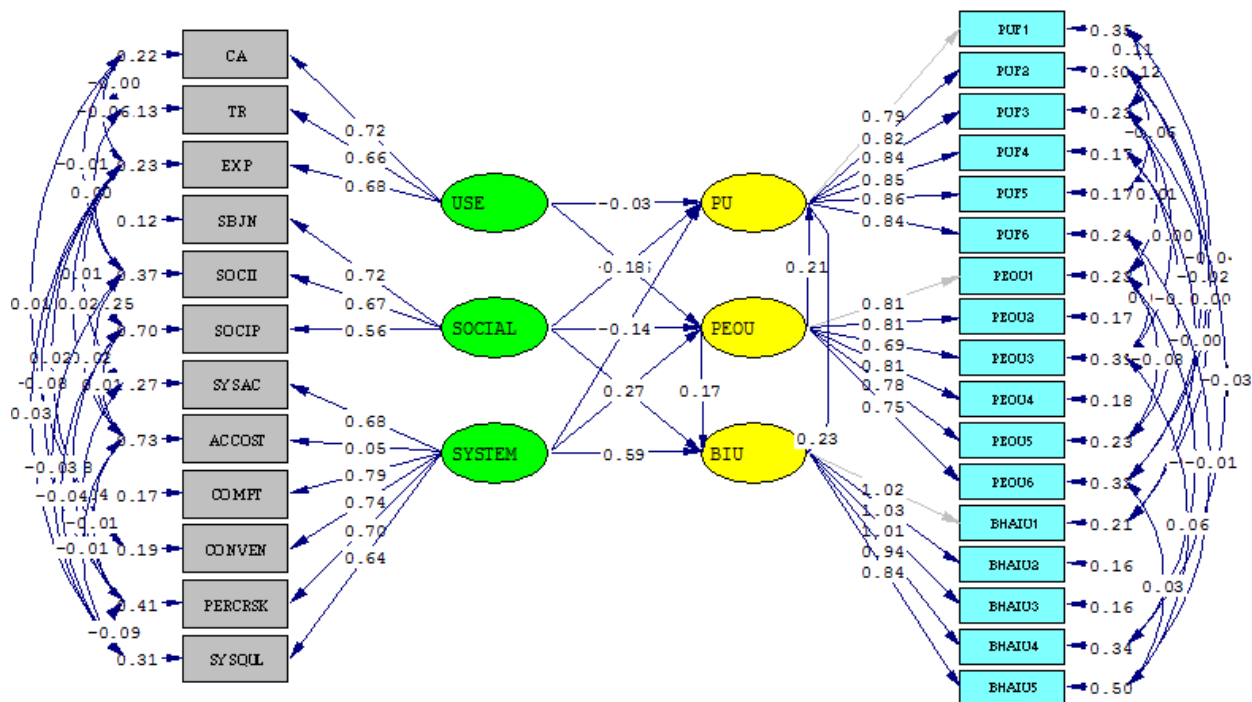
Path to	from	Decrease in Chi-Square	New Estimate
PUF1	BIU	16.9	-0.16
PUF3	BIU	22.6	-0.16
PUF6	PEOU	10.0	0.17
PUF6	BIU	16.7	0.15
PEOU1	PU	14.0	-0.21
PEOU1	BIU	28.6	-0.20
PEOU2	BIU	21.5	-0.15
PEOU6	PU	26.1	0.30
PEOU6	BIU	46.7	0.28
BHAIU5	PU	10.3	0.16
TR	SYSTEM	26.4	-0.38
SBJN	USE	152.6	0.97
SBJN	SYSTEM	89.6	0.62
SOCII	USE	28.3	-0.43
SOCII	SYSTEM	17.0	-0.28
SOCIP	USE	55.9	-0.61
SOCIP	SYSTEM	36.8	-0.44
PERCRSK	USE	42.6	0.54
PERCRSK	SOCIAL	77.9	0.53
SYSQUL	SOCIAL	22.4	-0.24
PU	BIU	58.3	-0.44
PEOU	BIU	69.2	-0.52
BIU	USE	56.4	0.47
BIU	SOCIAL	71.8	0.39
BIU	SYSTEM	78.5	1.04

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
BIU	PU	58.3	-0.16
BIU	PEOU	69.2	-0.19
PUF2	PUF1	84.6	0.13
PUF3	PUF1	98.5	0.12
PUF4	PUF1	17.7	-0.05
PEOU2	PEOU1	193.8	0.15
PEOU5	PEOU1	42.5	-0.08
PEOU5	PEOU2	38.8	-0.07
PEOU6	PUF6	68.5	0.10
PEOU6	PEOU1	68.9	-0.11
PEOU6	PEOU2	42.5	-0.08
PEOU6	PEOU4	20.5	-0.05
PEOU6	PEOU5	185.8	0.18
BHAIU2	BHAIU1	25.7	0.06
BHAIU5	BHAIU4	67.0	0.15
SOCIP	SOCII	162.2	0.29
PERCRSK	TR	48.9	0.08
PERCRSK	EXP	36.5	-0.09

Time used: 0.187 Seconds

6. OVERALL MODEL AFTER ADJUSTMENT



Chi-Square=583.60, df=296, P-value=0.05302, RMSEA=0.047

Goodness of Fit Statistics

Degrees of Freedom = 328

Minimum Fit Function Chi-Square = 1520.18 (P = 0.0)

Normal Theory Weighted Least Squares Chi-Square = 1584.66 (P = 0.0)

Chi-Square Difference with 7 Degrees of Freedom = 209.14 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 1256.66

90 Percent Confidence Interval for NCP = (1136.37 ; 1384.44)

Minimum Fit Function Value = 2.48

Population Discrepancy Function Value (F0) = 2.05

90 Percent Confidence Interval for F0 = (1.86 ; 2.26)

Root Mean Square Error of Approximation (RMSEA) = 0.079

90 Percent Confidence Interval for RMSEA = (0.075 ; 0.083)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 2.94

90 Percent Confidence Interval for ECVI = (2.74 ; 3.15)

ECVI for Saturated Model = 1.42

ECVI for Independence Model = 134.12

Chi-Square for Independence Model with 406 Degrees of Freedom = 82023.95

Independence AIC = 82081.95
 Model AIC = 1798.66
 Saturated AIC = 870.00
 Independence CAIC = 82239.08
 Model CAIC = 2378.43
 Saturated CAIC = 3226.99

Normed Fit Index (NFI) = 0.98
 Non-Normed Fit Index (NNFI) = 0.98
 Parsimony Normed Fit Index (PNFI) = 0.79
 Comparative Fit Index (CFI) = 0.99
 Incremental Fit Index (IFI) = 0.99
 Relative Fit Index (RFI) = 0.98

Critical N (CN) = 158.21

Root Mean Square Residual (RMR) = 0.044
 Standardized RMR = 0.046
 Goodness of Fit Index (GFI) = 0.85
 Adjusted Goodness of Fit Index (AGFI) = 0.80
 Parsimony Goodness of Fit Index (PGFI) = 0.64

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
PUF6	BIU	15.9	0.15
PEOU1	PU	30.6	-0.31
PEOU1	BIU	23.2	-0.17
PEOU2	BIU	9.6	-0.10
PEOU6	PU	39.3	0.37
PEOU6	BIU	59.6	0.30
BHAIU5	PU	13.3	0.19
CA	SYSTEM	12.4	0.46
SBJN	USE	9.3	0.46
SOCIP	USE	13.3	-0.29
PERCRSK	USE	45.1	0.52
PERCRSK	SOCIAL	44.7	0.43

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
PUF3	PUF2	15.9	0.05
PUF4	PUF3	10.2	0.03
PUF5	PUF3	12.7	-0.03
PUF5	PUF4	13.1	0.04
PEOU2	PUF1	10.5	0.03
PEOU2	PUF2	9.7	-0.03
PEOU2	PEOU1	124.6	0.13
PEOU3	PUF2	7.9	0.04
PEOU3	PEOU1	9.7	-0.04
PEOU4	PUF6	14.5	-0.04
PEOU5	PUF1	15.6	-0.04

PEOU5	PUF6	9.9	0.04
PEOU5	PEOU2	32.9	-0.06
PEOU6	PUF5	11.0	-0.04
PEOU6	PUF6	63.5	0.10
PEOU6	PEOU1	45.1	-0.09
PEOU6	PEOU2	38.4	-0.07
PEOU6	PEOU4	15.2	-0.04
PEOU6	PEOU5	118.5	0.14
BHAIU1	PEOU6	8.3	0.03
BHAIU2	BHAIU1	26.1	0.06
BHAIU3	PEOU2	10.0	0.03
BHAIU3	PEOU5	8.8	-0.03
BHAIU4	BHAIU2	14.2	-0.05
BHAIU5	PUF3	10.1	-0.04
BHAIU5	PEOU5	11.4	0.05
BHAIU5	BHAIU1	17.4	-0.06
BHAIU5	BHAIU2	8.3	-0.04
BHAIU5	BHAIU4	55.3	0.13
CA	PUF3	8.1	0.03
CA	BHAIU2	8.5	0.03
EXP	PEOU4	9.3	0.03
SOCII	PUF2	8.8	-0.04
SOCII	BHAIU3	8.1	-0.03
SOCIP	PUF2	10.7	0.05
SOCIP	PEOU3	12.3	0.06
SOCIP	BHAIU5	8.3	0.06
SOCIP	CA	8.3	-0.05
CONVEN	PUF1	10.2	0.03
CONVEN	COMPT	13.0	0.03
PERCRSK	BHAIU4	17.2	0.06
PERCRSK	TR	23.7	0.06
PERCRSK	SOCII	12.1	0.06
PERCRSK	CONVEN	22.3	-0.06
SYSQUL	PEOU5	9.2	0.04
SYSQUL	BHAIU5	9.0	0.05

Time used: 0.234 Seconds

DATE: 7/23/2017

TIME: 2:33

L I S R E L 8.72

BY

Karl G. J"reskog & Dag S"rbom

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		Covariance Matrix				
		PUF1	PUF2	PUF3	PUF4	PUF5
PUF6						
	PUF1	0.92				
	PUF2	0.72	0.93			
	PUF3	0.73	0.67	0.87		
	PUF4	0.60	0.62	0.67	0.84	
	PUF5	0.60	0.58	0.62	0.69	0.85
	PUF6	0.58	0.61	0.62	0.64	0.67
0.88	PEOU1	0.52	0.49	0.56	0.53	0.58
0.54	PEOU2	0.57	0.52	0.59	0.57	0.59
0.56	PEOU3	0.51	0.55	0.52	0.49	0.51
0.52	PEOU4	0.55	0.55	0.58	0.58	0.61
0.56	PEOU5	0.49	0.55	0.56	0.56	0.57
0.61	PEOU6	0.51	0.55	0.57	0.57	0.57
0.67	BHAIU1	0.53	0.60	0.57	0.59	0.62
0.65	BHAIU2	0.58	0.62	0.60	0.60	0.63
0.67	BHAIU3	0.56	0.61	0.60	0.62	0.64
0.66	BHAIU4	0.50	0.58	0.52	0.57	0.61
0.65	BHAIU5	0.53	0.61	0.50	0.55	0.60
0.61	CA	0.45	0.48	0.50	0.48	0.50
0.48	TR	0.37	0.39	0.39	0.40	0.42
0.41	EXP	0.39	0.40	0.43	0.43	0.43
0.42	SBJN	0.41	0.45	0.42	0.42	0.44
0.45	SOCII	0.37	0.38	0.36	0.36	0.38
0.40	SOCIP	0.30	0.36	0.26	0.26	0.29
0.30	SYSAC	0.49	0.49	0.52	0.53	0.52
0.51	ACCOST	0.03	0.04	0.02	0.01	0.03
0.03						

COMPT	0.55	0.56	0.57	0.57	0.59
0.58					
CONVEN	0.56	0.53	0.57	0.54	0.57
0.57					
PERCRSK	0.42	0.51	0.42	0.46	0.48
0.50					
SYSQUL	0.48	0.47	0.50	0.51	0.50
0.51					

Covariance Matrix

	PEOU1	PEOU2	PEOU3	PEOU4	PEOU5
PEOU6					
PEOU1	0.92				
PEOU2	0.77	0.87			
PEOU3	0.57	0.60	0.91		
PEOU4	0.71	0.71	0.60	0.87	
PEOU5	0.59	0.62	0.57	0.65	0.87
PEOU6	0.54	0.59	0.56	0.61	0.75
BHAIU1	0.55	0.58	0.58	0.59	0.64
BHAIU2	0.56	0.59	0.57	0.60	0.65
BHAIU3	0.58	0.62	0.57	0.61	0.62
BHAIU4	0.53	0.58	0.58	0.60	0.64
BHAIU5	0.48	0.51	0.58	0.53	0.62
CA	0.45	0.46	0.43	0.47	0.45
TR	0.40	0.42	0.40	0.43	0.41
EXP	0.49	0.48	0.41	0.50	0.46
SBJN	0.41	0.42	0.45	0.43	0.44
SOCII	0.33	0.36	0.46	0.39	0.36
SOCIP	0.25	0.28	0.44	0.28	0.28
SYSAC	0.47	0.49	0.46	0.51	0.50
AC COST	0.01	-0.01	0.02	0.01	0.03
COMPT	0.54	0.55	0.52	0.55	0.55
CONVEN	0.53	0.55	0.50	0.55	0.55
PERCRSK	0.42	0.44	0.50	0.46	0.46

SYSQUL	0.51	0.51	0.45	0.51	0.53
0.50					

Covariance Matrix

	BHAIU1	BHAIU2	BHAIU3	BHAIU4	BHAIU5
CA					

BHAIU1	1.25				
BHAIU2	1.07	1.22			
BHAIU3	1.03	1.05	1.19		
BHAIU4	0.96	0.95	0.96	1.24	
BHAIU5	0.84	0.86	0.86	0.94	1.24
CA	0.61	0.60	0.57	0.54	0.52
0.74					
TR	0.52	0.50	0.50	0.49	0.47
0.47					
EXP	0.46	0.45	0.47	0.42	0.42
0.42					
SBJN	0.53	0.53	0.53	0.48	0.51
0.43					
SOCII	0.55	0.51	0.50	0.49	0.59
0.38					
SOCIP	0.50	0.45	0.46	0.47	0.58
0.28					
SYSAC	0.54	0.54	0.52	0.49	0.47
0.43					
ACCCOST	0.04	0.06	0.08	0.04	0.02
0.03					
COMPT	0.68	0.67	0.69	0.66	0.60
0.50					
CONVEN	0.60	0.62	0.61	0.57	0.54
0.47					
PERCRSK	0.71	0.67	0.67	0.72	0.66
0.48					
SYSQUL	0.44	0.45	0.45	0.46	0.45
0.37					

Covariance Matrix

	TR	EXP	SBJN	SOCII	SOCIP
SYSAC					

TR	0.56				
EXP	0.43	0.67			
SBJN	0.41	0.40	0.64		
SOCII	0.37	0.35	0.49	0.83	
SOCIP	0.30	0.26	0.43	0.65	1.04
SYSAC	0.36	0.39	0.39	0.37	0.30
0.73					
ACCCOST	0.05	0.02	0.05	0.06	0.04
0.02					

COMPT	0.45	0.45	0.46	0.45	0.37
0.54					
CONVEN	0.40	0.45	0.44	0.41	0.32
0.51					
PERCRSK	0.47	0.35	0.48	0.49	0.49
0.42					
SYSQUL	0.34	0.40	0.35	0.29	0.22
0.45					

Covariance Matrix

	ACCOST	COMPT	CONVEN	PERCRSK	SYSQUL
ACCOST	0.73				
COMPT	0.04	0.80			
CONVEN	0.05	0.61	0.75		
PERCRSK	0.03	0.56	0.47	0.90	
SYSQUL	0.02	0.49	0.48	0.35	0.72

Number of Iterations = 8

LISREL Estimates (Maximum Likelihood)
Measurement Equations

PUF1 = 0.79*PU, Errorvar.= 0.35 , R² = 0.62
(0.021)
16.51

PUF2 = 0.82*PU, Errorvar.= 0.32 , R² = 0.66
(0.030) (0.021)
27.58 15.31

PUF3 = 0.84*PU, Errorvar.= 0.23 , R² = 0.73
(0.027) (0.015)
31.18 15.25

PUF4 = 0.85*PU, Errorvar.= 0.17 , R² = 0.79
(0.033) (0.012)
25.61 14.26

PUF5 = 0.86*PU, Errorvar.= 0.17 , R² = 0.80
(0.034) (0.013)
25.59 13.59

PUF6 = 0.84*PU, Errorvar.= 0.24 , R² = 0.73
(0.035) (0.016)
24.16 15.26

PEOU1 = 0.81*PEOU, Errorvar.= 0.23 , R² = 0.75

(0.016)
14.43

PEOU2 = 0.81*PEOU, Errorvar.= 0.17 , R² = 0.80
(0.026) (0.012)
31.44 14.36

PEOU3 = 0.69*PEOU, Errorvar.= 0.39 , R² = 0.56
(0.030) (0.024)
22.95 16.53

PEOU4 = 0.81*PEOU, Errorvar.= 0.18 , R² = 0.79
(0.026) (0.012)
30.96 14.59

PEOU5 = 0.78*PEOU, Errorvar.= 0.23 , R² = 0.74
(0.031) (0.016)
24.81 14.62

PEOU6 = 0.75*PEOU, Errorvar.= 0.32 , R² = 0.65
(0.029) (0.020)
25.77 16.10

BHAIU1 = 1.02*BIU, Errorvar.= 0.21 , R² = 0.84
(0.015)
13.72

BHAIU2 = 1.03*BIU, Errorvar.= 0.16 , R² = 0.87
(0.025) (0.013)
40.35 12.57

BHAIU3 = 1.01*BIU, Errorvar.= 0.16 , R² = 0.87
(0.025) (0.013)
40.16 12.68

BHAIU4 = 0.94*BIU, Errorvar.= 0.34 , R² = 0.72
(0.030) (0.022)
31.73 15.56

BHAIU5 = 0.84*BIU, Errorvar.= 0.50 , R² = 0.59
(0.033) (0.030)
25.53 16.46

CA = 0.72*USE, Errorvar.= 0.22 , R² = 0.70
(0.032) (0.025)
22.78 8.88

TR = 0.66*USE, Errorvar.= 0.13 , R² = 0.77
(0.025) (0.013)
26.28 9.90

EXP = 0.68*USE, Errorvar.= 0.23 , R² = 0.67
 (0.029) (0.017)
 23.77 13.01

SBJN = 0.72*SOCIAL, Errorvar.= 0.12 , R² = 0.81
 (0.027) (0.018)
 26.21 6.98

SOCII = 0.67*SOCIAL, Errorvar.= 0.37 , R² = 0.55
 (0.033) (0.026)
 20.33 14.44

SOCIP = 0.56*SOCIAL, Errorvar.= 0.70 , R² = 0.31
 (0.040) (0.042)
 14.16 16.50

SYSAC = 0.68*SYSTEM, Errorvar.= 0.27 , R² = 0.63
 (0.029) (0.017)
 23.29 15.88

ACCOST = 0.046*SYSTEM, Errorvar.= 0.73 , R² = 0.0029
 (0.035) (0.042)
 1.30 17.49

COMPT = 0.79*SYSTEM, Errorvar.= 0.17 , R² = 0.78
 (0.028) (0.012)
 27.70 14.46

CONVEN = 0.74*SYSTEM, Errorvar.= 0.19 , R² = 0.74
 (0.028) (0.013)
 26.50 15.08

PERCRSK = 0.70*SYSTEM, Errorvar.= 0.41 , R² = 0.54
 (0.033) (0.025)
 20.91 16.28

SYSQUL = 0.64*SYSTEM, Errorvar.= 0.31 , R² = 0.57
 (0.030) (0.019)
 21.64 16.25

Structural Equations

PU = 0.21*PEOU-0.029*USE-0.058*SOCIAL+0.76*SYSTEM, Errorvar.= 0.14, R² =
 0.85
 (0.054) (0.061) (0.058) (0.088)
 (0.016)
 3.83 -0.47 -1.00 8.59
 8.31

PEOU = 0.18*USE - 0.14*SOCIAL + 0.86*SYSTEM, Errorvar.= 0.23 , R² = 0.79

(0.074)	(0.069)	(0.076)	(0.023)
2.48	-2.02	11.37	10.00

BIU = 0.033*PU+0.070*PEOU+0.17*SOCIAL+0.59*SYSTEM, Errorvar.= 0.31, R² = 0.69

(0.091)	(0.065)	(0.065)	(0.13)
(0.024)			
0.36	1.07	2.67	4.44
12.71			

Reduced Form Equations

PU = 0.0091*USE - 0.086*SOCIAL + 0.94*SYSTEM, Errorvar.= 0.15, R² = 0.84

(0.065)	(0.060)	(0.074)
0.14	-1.44	12.75

PEOU = 0.18*USE - 0.14*SOCIAL + 0.86*SYSTEM, Errorvar.= 0.23, R² = 0.79

(0.074)	(0.069)	(0.076)
2.48	-2.02	11.37

BIU = 0.013*USE + 0.16*SOCIAL + 0.68*SYSTEM, Errorvar.= 0.31, R² = 0.69

(0.014)	(0.062)	(0.066)
0.93	2.58	10.33

Correlation Matrix of Independent Variables

	USE	SOCIAL	SYSTEM
USE	1.00		
SOCIAL	0.84 (0.02) 38.61	1.00	
SYSTEM	0.87 (0.02) 51.83	0.83 (0.02) 41.10	1.00

Covariance Matrix of Latent Variables

SYSTEM	PU	PEOU	BIU	USE	SOCIAL	
-----	-----	-----	-----	-----	-----	-----

PU	0.91					
PEOU	0.84	1.06				
BIU	0.73	0.77	1.00			
USE	0.75	0.82	0.74	1.00		
SOCIAL	0.70	0.74	0.74	0.84	1.00	
SYSTEM	0.87	0.91	0.83	0.87	0.83	
1.00						

Goodness of Fit Statistics

Degrees of Freedom = 296

Minimum Fit Function Chi-Square = 589.42 (P = 0.05311)

Normal Theory Weighted Least Squares Chi-Square = 583.60 (P = 0.05302)

Chi-Square Difference with 2 Degrees of Freedom = 136.26 (P = 0.032)

Estimated Non-centrality Parameter (NCP) = 1257.60

90 Percent Confidence Interval for NCP = (1137.32 ; 1385.38)

Minimum Fit Function Value = 2.48

Population Discrepancy Function Value (F0) = 2.05

90 Percent Confidence Interval for F0 = (1.86 ; 2.26)

Root Mean Square Error of Approximation (RMSEA) = 0.047

90 Percent Confidence Interval for RMSEA = (0.043 ; 0.083)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 2.94

90 Percent Confidence Interval for ECVI = (2.75 ; 3.15)

ECVI for Saturated Model = 1.42

ECVI for Independence Model = 134.12

Chi-Square for Independence Model with 406 Degrees of Freedom = 23.95

Independence AIC = 82081.95

Model AIC = 801.60

Saturated AIC = 870.00

Independence CAIC = 239.08

Model CAIC = 392.20

Saturated CAIC = 226.99

Normed Fit Index (NFI) = 0.98

Non-Normed Fit Index (NNFI) = 0.98

Parsimony Normed Fit Index (PNFI) = 0.79

Comparative Fit Index (CFI) = 0.99

Incremental Fit Index (IFI) = 0.99

Relative Fit Index (RFI) = 0.98

Critical N (CN) = 648.41

Root Mean Square Residual (RMR) = 0.037
 Standardized RMR = 0.036
 Goodness of Fit Index (GFI) = 0.96
 Adjusted Goodness of Fit Index (AGFI) = 0.95
 Parsimony Goodness of Fit Index (PGFI) = 0.64

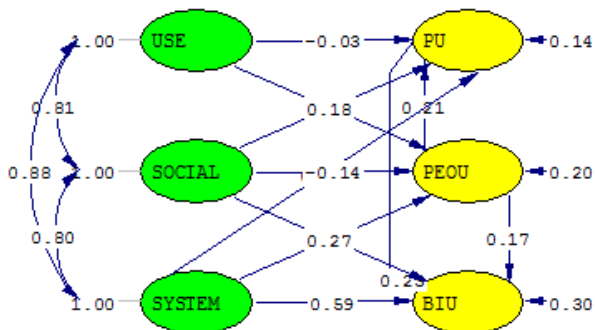
The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
PUF6	BIU	15.9	0.15
PEOU1	PU	30.6	-0.31
PEOU1	BIU	23.2	-0.17
PEOU6	BIU	59.6	0.30
BHAIU5	PU	13.3	0.19
CA	SYSTEM	12.3	0.46
SBJN	USE	9.3	0.46
SOCIP	USE	13.3	-0.29
PERCRSK	USE	45.3	0.52
PERCRSK	SOCIAL	44.9	0.44

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
PEOU2	PEOU1	124.7	0.13
PEOU6	PUF6	63.5	0.10
PEOU6	PEOU1	45.2	-0.09
PEOU6	PEOU2	38.4	-0.07
PEOU6	PEOU4	15.2	-0.04
PEOU6	PEOU5	118.4	0.14
BHAIU2	BHAIU1	26.1	0.06
BHAIU3	PEOU2	10.0	0.03
BHAIU5	BHAIU4	55.3	0.13
PERCRSK	TR	24.0	0.06

Time used: 0.234 Seconds



Chi-Square=583.60, df=296, P-value=0.05302, RMSEA=0.047

BIOGRAPHY

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