


THE FACTORS OF CONSUMER INTENSION OF USING MOBILE PAYMENT IN  
VIETNAM

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p>Received 01 May 2023</p> <p>Accepted 28 July 2023</p>	<p><b>Purpose:</b> Within the context of emerging mobile technologies, Mobile payment or M-payment has been introduced as the new trend for payment methods bringing more value and convenience to consumers. However, the development of M-payment services is still quite timid in some Southeast Asia countries including Vietnam. This is also the reason and motivation for the author to do this research.</p>
<p><b>Keywords:</b></p> <p>Mobile Payment; Unified Theory of Acceptance and Use of Technology (UTAUT); Vietnam.</p> 	<p><b>Theoretical framework:</b> The goal of this study is to spot some factors that affect the use behavior (UB) of M-payment consumers in five major metropolises that were most influential on the economy in Vietnam.</p> <p><b>Design/methodology/approach:</b> A quantitative questionnaire was used to measure the responses of participants and Partial Least Squares (PLS) method was employed to analyze the collection data as well as test all hypotheses.</p> <p><b>Findings:</b> The results indicated that SI has been the important factor leading to the BI to use M-payment followed by SV and SC issues and BI also had a strong influence on the UB of consumers. Since M-payment is still in the infancy stage and is one of the most exciting mobile applications for the next few years in Vietnam, the identification of important factors concerning M-payments.</p> <p><b>Research, Practical &amp; Social Implications:</b> To investigate the factors affecting UB of Vietnamese M-payment consumers, the researcher proposed a research model which analyzes the impact of various variables extracted from system quality (ST), service quality (SV), security (SC), social influence (SI) on behavioral intention (BI) to use and BI on M-payment UB.</p> <p><b>Originality/value:</b> This study will assist merchants and software developers to design and improve the systems and services to ensure the full acceptance and continuous use of the systems. Finally, a set of suggestions for the subsequent research works also was listed at the end of this study.</p> <p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i8.3197">https://doi.org/10.26668/businessreview/2023.v8i8.3197</a></p>

OS FATORES DE INTENÇÃO DOS CONSUMIDORES DE UTILIZAR PAGAMENTO MÓVEL NO  
VIETNÃ

RESUMO

**Objetivo:** No contexto das novas tecnologias móveis, o pagamento móvel ou o pagamento móvel foi introduzido como a nova tendência para métodos de pagamento que trazem mais valor e comodidade aos consumidores. No entanto, o desenvolvimento dos serviços de pagamento através de fusões e aquisições é ainda bastante tímido em alguns países do Sudeste Asiático, incluindo o Vietname. Essa é também a razão e a motivação para a autora fazer essa pesquisa.

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**Estrutura teórica:** O objetivo deste estudo é identificar alguns fatores que afetam o comportamento de uso (UB) dos consumidores de pagamentos M em cinco grandes metrópoles que foram mais influentes na economia do Vietnã.

**Projeto/metodologia/abordagem:** Foi utilizado um questionário quantitativo para medir as respostas dos participantes e foi utilizado o método dos mínimos quadrados parciais (PLS) para analisar os dados da coleta, bem como testar todas as hipóteses.

**Constatações:** Os resultados indicaram que o SI tem sido o fator importante que levou o BI a utilizar o pagamento M, seguido de questões do SV e do SC, e o BI também teve uma forte influência no UB dos consumidores. Uma vez que a M-payment ainda está na fase inicial e é uma das aplicações móveis mais interessantes para os próximos anos no Vietname, a identificação de fatores importantes relativos à M-payments.

**Pesquisa, Implicações Práticas e Sociais:** Para investigar os fatores que afetam a UB dos consumidores vietnamitas de M-payment, o pesquisador propôs um modelo de pesquisa que analisa o impacto de várias variáveis extraídas da qualidade do sistema (ST), qualidade do serviço (SV), segurança (SC), influência social (SI) na intenção comportamental (BI) para usar e BI no M-payment UB.

**Originalidade/valor:** Este estudo ajudará os comerciantes e desenvolvedores de software a projetar e melhorar os sistemas e serviços para garantir a aceitação total e o uso contínuo dos sistemas. Finalmente, um conjunto de sugestões para os trabalhos de pesquisa subsequentes também foi listado no final deste estudo.

**Palavras-chave:** Pagamento por Telefone Celular, Teoria Unificada de Aceitação e Uso de Tecnologia (UTAUT), Vietnã.

## LOS FACTORES DE INTENCIÓN DEL CONSUMIDOR DE UTILIZAR EL PAGO MÓVIL EN VIETNAM

### RESUMEN

**Finalidad:** En el contexto de las tecnologías móviles emergentes, el pago móvil o M-payment se ha introducido como la nueva tendencia para los métodos de pago que aportan más valor y comodidad a los consumidores. Sin embargo, el desarrollo de los servicios de pago electrónico todavía es bastante tímido en algunos países del sudeste asiático, incluido Vietnam. Esta es también la razón y la motivación para que el autor haga esta investigación.

**Marco teórico:** El objetivo de este estudio es detectar algunos factores que afectan el comportamiento de uso (USE) de los consumidores de pagos móviles en cinco grandes metrópolis que tuvieron mayor influencia en la economía de Vietnam.

**Diseño/metodología/enfoque:** Se utilizó un cuestionario cuantitativo para medir las respuestas de los participantes y se empleó el método de Mínimos Cuadrados Parciales (PLS) para analizar los datos de recolección y probar todas las hipótesis.

**Hallazgos:** Los resultados indicaron que el SI ha sido el factor importante que ha llevado al BI a utilizar el M-payment seguido de los problemas de SV y SC y el BI también tuvo una fuerte influencia en el UB de los consumidores. Dado que el M-payment está todavía en la etapa de infancia y es una de las aplicaciones móviles más emocionantes para los próximos años en Vietnam, la identificación de factores importantes en relación con los M-payments.

**Investigación, Implicaciones Prácticas y Sociales:** Para investigar los factores que afectan a la UB de los consumidores vietnamitas de M-pago, el investigador propuso un modelo de investigación que analiza el impacto de varias variables extraídas de la calidad del sistema (ST), la calidad del servicio (SV), la seguridad (SC), la influencia social (SI) en la intención de comportamiento (BI) a utilizar y BI en M-pago UB.

**Originalidad/valor:** Este estudio ayudará a los comerciantes y desarrolladores de software a diseñar y mejorar los sistemas y servicios para garantizar la plena aceptación y el uso continuo de los sistemas. Finalmente, al final de este estudio también se enumeró un conjunto de sugerencias para los trabajos de investigación posteriores.

**Palabras clave:** Pago Móvil, Teoría Unificada de la Aceptación y el Uso de la Tecnología (UTAUT), Vietnam.

### INTRODUCTION

Over the last few years, payment systems used in business activities have been altered by the advancement of Information and Communication Technologies (ICT) such as ubiquitous Internet access and innovative mobile devices - smartphones (Liébana- Cabanillas, 2014).

Nowadays, more and more consumers use their mobile phones to make purchases. The growth in the number of mobile devices particularly smartphones supported the potential opportunities presented by mobile commerce (m-commerce). As m-commerce increases in popularity, it creates requirements for new payment instruments to enable feasible and more convenient transactions (Ondrus & Pigneur, 2006). Therefore, M- payment is expected to become an important and essential channel for conducting financial transactions (Adebiyi et al., 2013). The Organisation for Economic Cooperation and Development (OECD) (2012) defines m-payment as: “M-payments are payments for which payment data and instruction are made via mobile phones or other mobile devices. Such payments would include Internet payments using a mobile device, as well as payments made through mobile network operators (MNOs). Note that the location of the payer and supporting infrastructure is not important: the payer may be on the move (remote payments) or at a point of sale (POS)”. A report from Juniper Research has found that the value of global M-payments transaction reached approximately \$507 billion in 2014, increasing nearly 40% year-on-year (M-payment Strategies: Remote, Contactless & Money Transfer 2014-2018). Besides, according to the data of Capgemini Analysis in M-payment (2014), the number of transactions in Global M-payment will reach 46.9 billion in 2015, up from just only 7 billion in 2011.

In Vietnam M-payment users are using this new type of payment now primarily for mcommerce, P2P (peer-to-peer) value transfers, POS. Vietnamese users are average in usage among these three types of M-payments. There are some well-known M-payment players in Vietnam namely Mobivi, Soha Pay, Mpay, PatNet, Payoo, 1Pay, VinaPay, NganLuong... (Teachinasia, 2013). Nevertheless, Vietnam is still a Cash-based society. Cash is “king” since the bulk of personal consumption is done through the medium of cash. It is also a barrier for consumers to transition from Cash on Delivery (COD) to making online payments. According to Vice Prime Minister Vu Duc Dam, M-payment in Vietnam is developing very slowly compared to other countries in the region and around the world. Currently, only about 10% of the payment transaction is using Mobile Banking (Speaking at the ceremony honoring Electronic Banking favorite in Vietnam - My eBank 2014 by electronic newspaper VnExpress held in Hanoi at 19.11.2014). Considering the low adoption rate of M-payment, it is essential to identify the factors affecting consumer UB of M-payment.

The next section, chapter 2 will be dedicated to a literature review relevant to this research. Chapter 3 contains the conceptual framework, hypotheses, measurement items, research design, data collection procedures and data analysis techniques that will be used in this

study. Chapter 4 includes the descriptive analysis of the respondents and the analysis results. Finally, chapter 5 consists of the discussion of the findings of the study, the limitations and suggestions of this study.

## LITERATURE REVIEW

### Mobile Payment

M-payment is defined as a financial business transaction activities conducted through a mobile device like mobile phone, smartphone, tablet... based on mobile network (Zhao & Kurnia, 2014). According to Xin et al. (2013) and Li et al. (2014), M-payments fall broadly into two categories: POS contactless payments (or proximity M-payment) and mobile remote payments. From the targets of transaction, M-payment can be classified into P2P payment, C2B payment (consumer-to-business) and B2B payment (business-to-business) (Deloitte, 2012).

Moreover, from the provider's perspectives, M-payment can be classified into three types: mobile network operator centric, financial institution centric and third-party operator centric (Lu et al. 2011).

In terms of M-payment adoption, the topic on consumer in the domain of M-payment raised the interests of many scholars. Understanding consumer preferences and the reasons to use or not use a specific technology-enabled service is important for designing a viable service that create conducive value to consumers, merchants, and the other stakeholders. A summary of current research in term of M-payment adoption is present in the table below:

Table 1. Review of M-payment research after 2013

Authors	Topic & Location	Theoretical Model	Core Constructs	Key Findings
Zhou (2013)	An empirical examination of continuance intention of mobile payment services  <i>China</i>	D&M IS success Model	ST, SV, Information Quality (IQ), Trust, Satisfaction, Flow, Continuance Intention	The main factor effect on trust is SV. SV also is the main factor influence on satisfaction. Flow is affected by SV and IQ. Continuance intention of M-payment is determined by trust, flow and satisfaction. Service providers have to offer quality of services, system, and information in order to facilitate consumer continues to use Mpayment services.
Tan et al. (2014)	NFC mobile credit card (MCC): The next frontier of mobile payment?  <i>Malaysia</i>	TAM	Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Perceived Risk (PR), Perceived Finance Cost (PFC), SI, Personal Innovativeness in Information Technology (PIIT)	PU is a significant factor in predicting the intention to use MCC. PEOU is a significant construct in predicting MCC adoption and has a positive relationship with PU with turn in affect MCC acceptance. PR and PFC is an insignificant construct in this research. The intention of both the genders followed the same patterns equally, therefore gender was found to have moderating insignificant

				effect on the paths of the structural model.
Dutot (2015)	Factors influencing Near Field Communication (NFC) adoption: extended TAM approach <i>France</i>	Ann TAM	SC, SI, Technology Available, Trust, PEOU, PU, Intention of Use (IU), Usage	Trust, SI and technology availability effect positively PU. SC issues affect PEOU. The results are showing a strong support for the extended TAM model proposed.
Yan & Yang (2015)	Examining Mobile Payment User Adoption from the Perspective of Trust <i>China</i>	TAM	PEOU, PU, Structural assurance, Ubiquity, Trust, usage intention	PU, PEOU, ubiquity, and structure assurance have significantly positive influence on trust, which will turn to affect usage intention of consumer. Merchants and providers in mobile service context must to concern about trust to make a good condition for adoption and usage of M-payment services.
Di Pietro et al. (2015)	The Integrated Model on Mobile Payment Acceptance (IMMPA): An empirical application to public transport <i>Italy (Europe)</i>	UTAUT, TAM	Attitude towards mobile services, Compatibility, Ease of Use, Usefulness, SC, IU, Behavioral use	The intention to use a new technology is affected by the Ease of use, Usefulness, and the SC of that technology. The Usefulness is simultaneously affected by Ease of use, Compatibility, and Attitude towards mobile services. The model confirms that IU has a significantly direct effect on M-payment actual usage.

Source: Author collects

### Related Theory: The Unified Theory of Acceptance and Use of Technology (UTAUT)

Drawing The UTAUT was developed by Venkatesh et al. (2003) which is an extension of Technology acceptance model (TAM), representing a shift from technology acceptance to unified view (Wong et al., 2015). UTAUT has two endogenous variables consist of BI to use and UB of technology; Four exogenous variables including facilitating conditions (FCs), SI, performance expectancy (PE), and effort expectancy (EE); Four moderators which are voluntariness, experience, age, and gender.

UTAUT was built not only to predict and explain the adoption of technological innovations in organizations (Venkatesh et al., 2003), but also it can be employed to investigate the adoption of information systems of consumers and private users. For instance, UTAUT is frequently adopted and used of information systems such as M- payment acceptance research (Leong et al. 2013; Di Pietro et al., 2015), Mobile Banking (Oliveira et al., 2014), Internet Banking (Martins et al., 2014), Electronic payment (Junadi, 2015), Mobile Advertising (Wong et al., 2015), Technology - Based Service (Tsourela & Roumeliotis, 2015), 3G Mobile Communications (Mardikyan et al., 2012), Education (chang, 2013), and so on.

## Relevant Research and Relationship Between Research Constructs

The following table provides the definition of the constructs relating to this study and shows some previous researches that have demonstrated the relationship between all of the constructs.

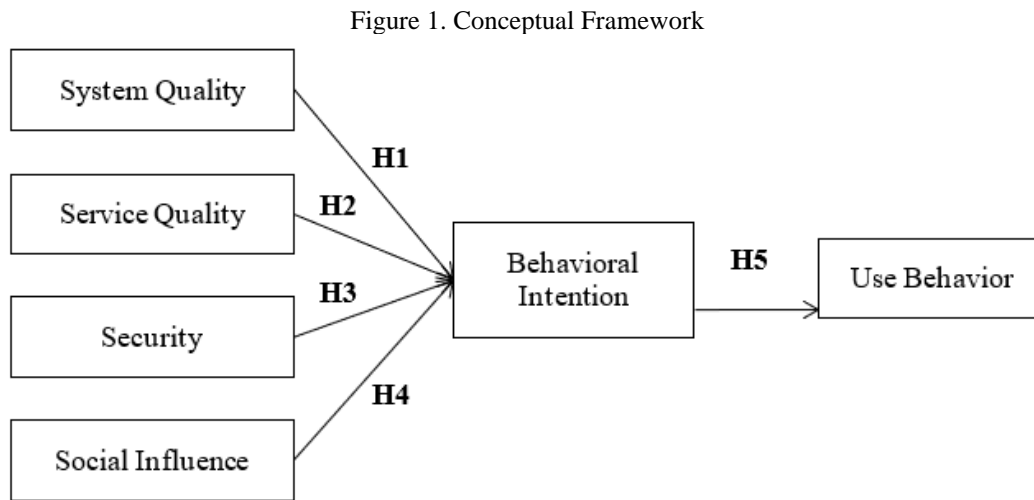
Table 2. Definition and relationship of the constructs

Construct	Definition	Relationship between research construct
<b>System Quality</b>	ST represents the quality of the information system processing itself, which includes software and data components (Lee and Yu, 2012). ST measures following aspects: ease of use, ease of learning, compatibility, function ability, reliability, availability, user requirements, flexibility, system features, (Garcia-Smith & Effken (2013); Balaban et al., (2013)).	Many studies have found that ST and BI to Use have positive relationships. (Cheng, 2012; Islam, 2012; Li et al., 2012; Ramayah et al., 2010; Wang & Chiu, 2011; Zhou (2013)).
<b>Service Quality</b>	SV was defined as the overall support delivered by the M- payment service provider, and it applies regardless of whether this support is delivered by the banking service provider, an outsourcing software merchant, or an Internet service provider (Delone & McLean, 2003; Lee & Yu, 2012).	A number of researchers examined the relationship between SV and consumer BI to use. Wang and Chiu (2011) discovered SV as a significant factor in determining users' intentions towards e-learning system use. Similarly, Cheng, 2012; Li et al., 2012; Balaban (2012); Zhou (2013) also reported a significant positive effect of SV on intention to use.
<b>Security</b>	Huang and Cheng (2012) referred SC is a set of procedures, mechanisms and computer programs to authenticate the source of information and ensure the integrity and privacy to avoid the problems of the data and the network. Some SC standards and rules will allow consumers to perform all operations in a safety way.	Some researchers believe that current SC standards and rules will allow consumers to perform all operations in a safety way. They demonstrated that SC and intention to use have a positive relationship (Nasri & Charfeddine, 2012; Junadi <sup>a</sup> , 2015; Di Pietro et al., 2015).
<b>Social Influence</b>	SI is defined as the degree to which an individual perceives that important others believe he or she should use the new system (Venkatesh et al., 2003; Chong et al., 2010; Thakur, 2013; Dutot, 2015).	The relationship between SI and BI has been empirically investigated by many previous studies (Kwong & Park, 2008; Tsu Wei et al., 2009; Gu, Lee, & Suh, 2009; Kim et al., 2011; Chong et al., 2010; Chong et al., 2012). Many studies have found the significantly positive relationship between SI and Intention to Use (Nikou & Bouwman, 2014; Lu et al., 2011; Yang et al., 2012; Tan et al., 2014; Liébana-Cabanillas, 2014).
<b>Behavioral Intention to Use</b>	Mohammadi (2015) defined Intention as the likelihood that an individual will use an Information System.	In the technology acceptance dimension, many studies are conducted to exploring the relationship between this two construct: BI and UB. Nikou & Bouwman (2014) Mohammadi, 2015; Di Pietro et al., 2015 reported that Intention to Use has a significant relationship influence on Use.

Source: Author collects

## DESIGN AND METHODOLOGY

### Research Framework



Source: Author suggest

### Research Hypotheses

From the Literature Review, independent factors such as ST, SV, SC, SI have an indirect effect on M-payment acceptance through its impact on consumer' BI to use M- payment. Thus, the following five hypotheses will be tested:

H1: ST will affect positively Consumer' BI to use in the context of M-payment. H2: SV will affect positively Consumer' BI to use in the context of M-payment. H3: SC will affect positively Consumer' BI to use in the context of M-payment. H4: SI will affect positively Consumer' BI to Use in the context of M-payment. H5: BI will affect positively Consumer' UB in the context of M-payment.

### Research Design

A quantitative research technique, the self- administered was developed in English version and then translated into Vietnamese. Survey questionnaires were sent to the target population from 5 big cities in Viet Nam: Hanoi, Ho chi minh, Can tho, Da nang, Hai Phong. All of the items in questionnaire are generated from previous studies, then modified to fit the context of M-payments and written in the form of statements with which M-payment users are to agree or disagree on a five-point Liker-type scale. After dispensing the links of questionnaires through Facebook accounts to 400 target populations, a total 245 valid survey responses were collected. All data collected was back-translated into English. SmartPLS (Smart Partial Least

Squares) were used to analysis the collected data to examine the relationship between dependent and independent constructs in the research model.

## RESULTS AND DISCUSSION

### Validity and Reliability Measures (PLS Measurement Model Results)

According to our result, the measurement model is completely satisfactory. Firstly, all standardized loading are greater than 0.740 (table 3). Furthermore, PLS does not directly provide significance tests. Significance levels for loadings, weights, and paths were calculated through bootstrapping. We used bootstrapping (N=1000) to perform significance testing for the loadings. Factor loading of each item was highly significant (P <0.001) as illustrated by the t-value (T-statistics) of the outer loadings in smartPLS output. These values ranged from a low value of 16.5 to a high of 141 (table 4). Consequently, the individual item reliability is adequate.

Table 3. Factor loadings (both) and cross loadings

	System Quality	Service Quality	Security	Social Influence	Behavioral Intention	Use Behavior
STQ1	<b>0.793</b>	0.322	0.338	0.350	0.266	0.254
STQ2	<b>0.883</b>	0.315	0.370	0.347	0.257	0.254
STQ3	<b>0.827</b>	0.310	0.339	0.315	0.296	0.248
STQ4	<b>0.752</b>	0.314	0.354	0.303	0.236	0.202
STQ5	<b>0.740</b>	0.347	0.354	0.289	0.341	0.295
STQ6	<b>0.840</b>	0.315	0.343	0.289	0.230	0.255
SVQ1	0.314	<b>0.802</b>	0.679	0.592	0.625	0.476
SVQ2	0.387	<b>0.759</b>	0.648	0.639	0.585	0.479
SVQ3	0.366	<b>0.889</b>	0.708	0.657	0.641	0.572
SVQ4	0.274	<b>0.775</b>	0.638	0.595	0.591	0.464
SVQ5	0.302	<b>0.845</b>	0.660	0.660	0.676	0.550
SVQ6	0.340	<b>0.866</b>	0.686	0.616	0.599	0.512
SC1	0.412	0.749	<b>0.905</b>	0.754	0.691	0.609
SC2	0.391	0.717	<b>0.845</b>	0.740	0.661	0.556
SC3	0.431	0.711	<b>0.854</b>	0.747	0.714	0.595
SC4	0.359	0.648	<b>0.837</b>	0.672	0.594	0.516
SC5	0.232	0.619	<b>0.807</b>	0.578	0.570	0.508
SI1	0.408	0.703	0.722	<b>0.912</b>	0.669	0.490
SI2	0.289	0.634	0.760	<b>0.845</b>	0.591	0.525
SI3	0.349	0.639	0.728	<b>0.851</b>	0.675	0.544
SI4	0.337	0.717	0.745	<b>0.929</b>	0.743	0.571
SI5	0.343	0.660	0.697	<b>0.869</b>	0.700	0.567
BI1	0.314	0.687	0.723	0.672	<b>0.905</b>	0.653
BI2	0.313	0.661	0.650	0.693	<b>0.890</b>	0.668
BI3	0.291	0.665	0.666	0.690	<b>0.875</b>	0.568
UB1	0.334	0.614	0.684	0.640	0.697	<b>0.939</b>
UB2	0.250	0.535	0.532	0.491	0.619	<b>0.922</b>

Source: Author calculates



Table 4. T-Statistics and P-Values of outer model loading

Constructs	Items	T Statistics	P Values
System Quality $\alpha$ : 0.893	STQ1	21.214	0.000
	STQ2	35.414	0.000
	STQ3	25.695	0.000
	STQ4	18.407	0.000
	STQ5	16.498	0.000
	STQ6	26.015	0.000
Service Quality $\alpha$ : 0.912	SVQ1	34.943	0.000
	SVQ2	23.957	0.000
	SVQ3	60.257	0.000
	SVQ4	28.191	0.000
	SVQ5	46.255	0.000
	SVQ6	46.545	0.000
Security $\alpha$ : 0.901	SC1	69.043	0.000
	SC2	44.082	0.000
	SC3	47.157	0.000
	SC4	37.909	0.000
	SC5	33.905	0.000
Social Influence $\alpha$ : 0.948	SI1	65.129	0.000
	SI2	31.226	0.000
	SI3	34.364	0.000
	SI4	100.997	0.000
	SI5	40.000	0.000
Intention to Use $\alpha$ : 0.869	BI1	72.211	0.000
	BI2	64.969	0.000
	BI3	49.883	0.000
Actual Usage $\alpha$ : 0.846	UB1	140.989	0.000
	Ub2	77.432	0.000

Source: Author calculates

Second, six constructs meet the requirement of composite reliabilities are greater than 0.7, demonstrated in table 5. In addition, such latent variables achieve convergent validity because their average variance extracted (AVE) was above the recommended value of 0.5 (table 5). Thus we concluded that all our constructs had satisfactory convergent validity.

Table 5. Convergent validity and discriminant validity

CR	AVE		ST	SV	SC	SI	BI	UB
0.918	0.652	STQ	0.807					
0.927	0.679	SVQ	0.401	0.824				
0.929	0.723	SC	0.435	0.813	0.850			
0.946	0.778	SI	0.392	0.761	0.826	0.882		
0.919	0.792	BI	0.344	0.754	0.764	0.769	0.890	
0.928	0.866	UB	0.316	0.619	0.658	0.612	0.709	0.931

CR: (Construct / composite reliabilities) AVE: (Average variance extracted)

Matrix diagonals (both): The square roots of the AVEs

Source: Author calculates

Finally, we can observe that the six constructs demonstrate adequate discriminant validity. This is achieved both via the comparison of the square root of AVE vs correlations

(table 5) and the cross-loadings table (table 5). In addition, most constructs have good distribution because the skewness is  $< 2$  and kurtosis  $< 5$  as shown in table 6.

Table 6. Kurtosis, Skewness, mean, and Standard deviation

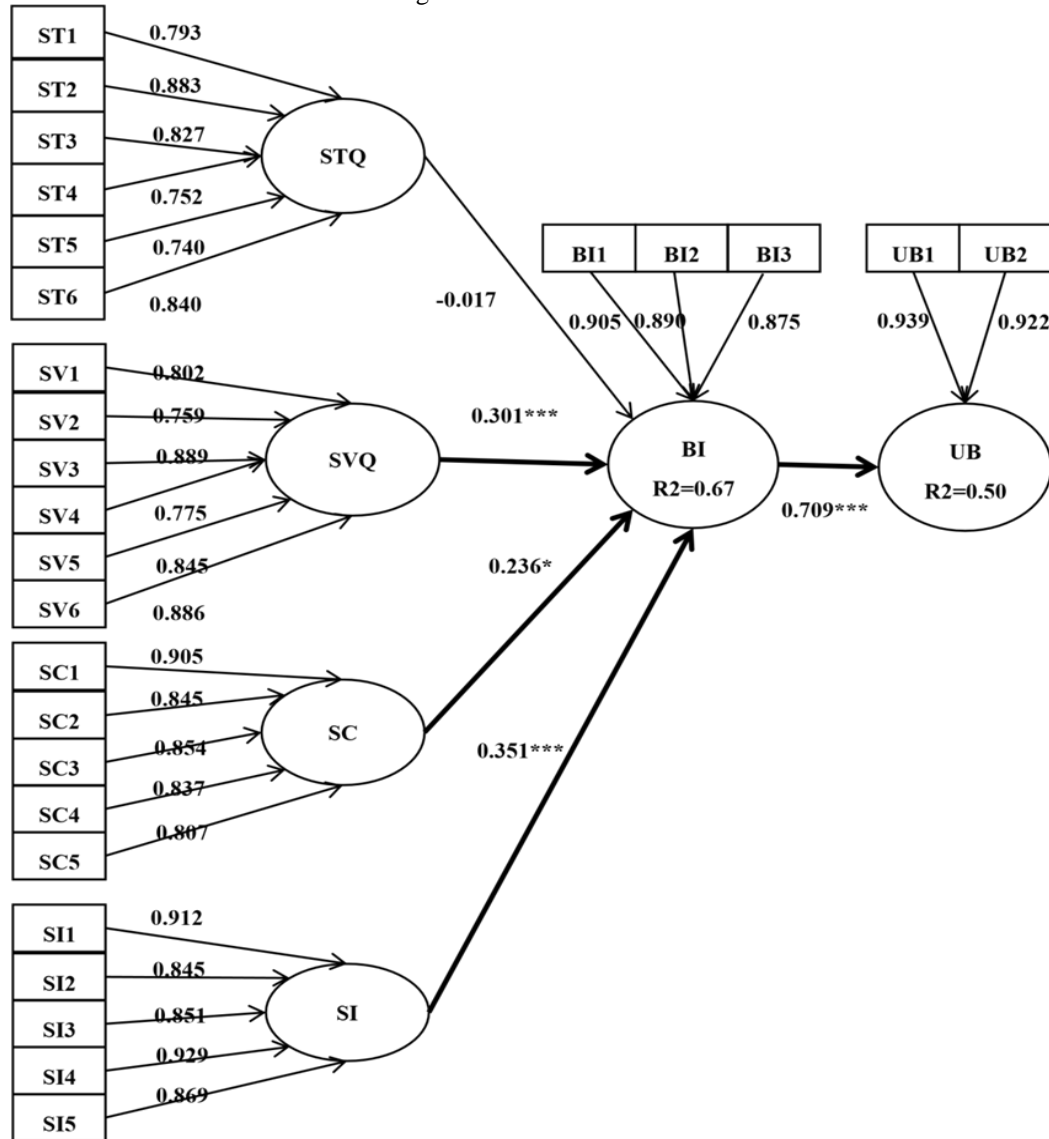
	Mean	Standard deviation	Kurtosis	Skewness
<b>ST1</b>	4.135	0.690	-0.058	-0.409
<b>ST2</b>	4.159	0.719	-0.309	-0.447
<b>ST3</b>	4.176	0.776	-0.534	-0.527
<b>ST4</b>	4.131	0.722	-0.606	-0.334
<b>ST5</b>	4.155	0.740	-0.706	-0.378
<b>ST6</b>	4.106	0.737	-0.534	-0.355
<b>SV1</b>	4.245	0.704	-0.027	-0.598
<b>SV2</b>	4.037	0.784	-0.240	-0.474
<b>SV3</b>	4.000	0.952	-0.632	-0.543
<b>SV4</b>	4.147	0.805	-0.024	-0.699
<b>SV5</b>	4.069	0.857	-0.471	-0.565
<b>SV6</b>	4.041	0.903	-0.407	-0.583
<b>SC1</b>	4.020	0.941	-0.821	-0.514
<b>SC2</b>	4.053	0.940	-0.525	-0.671
<b>SC3</b>	4.012	0.887	-0.259	-0.588
<b>SC4</b>	4.090	0.871	-0.443	-0.623
<b>SC5</b>	4.122	0.751	-0.818	-0.322
<b>SI1</b>	4.069	0.782	-0.750	-0.329
<b>SI2</b>	4.057	0.846	-0.621	-0.476
<b>SI3</b>	4.061	0.867	-0.199	-0.611
<b>SI4</b>	4.086	0.831	0.106	-0.592
<b>SI5</b>	4.037	0.905	0.489	-0.771
<b>BI1</b>	4.184	0.795	0.277	-0.735
<b>BI2</b>	4.024	0.908	0.198	-0.773
<b>BI3</b>	4.151	0.851	-0.133	-0.695
<b>UB1</b>	3.649	1.121	-0.236	-0.709
<b>UB2</b>	3.131	1.128	-0.738	-0.054

Source: Author calculates

### Hypotheses Results (PLS Structure Model Results)

The SmartPLS result for Beta value of all path coefficients and the R2 are indicated in Figure 1, significant paths are represented with bold arrows. Table 7 summarized the hypotheses and outcome.

Figure 1. Structure Result



Source: Author calculates

Table 7. Hypotheses Testing Results

Hypothesis	Suggested effect	Path coefficients	T-value (bootstrap)	P-value	Support
H1: ST→BI	+	-0.017	0.416	0.677	No
H2: SV→BI	+	0.301***	3.743	0.000	Yes
H3: SC→BI	+	0.236*	2.362	0.018	Yes
H4: SI→BI	+	0.351***	3.954	0.000	Yes
H5: BI→UB	+	0.709***	22.891	0.000	Yes

Note: \*P<0.05; \*\*P<0.01; \*\*\*P<0.001 (based on t(999); two-tailed test)

Source: Author calculates

As shown in figure 1 and table 7, all most beta path coefficients were positive and statistically significant excepting the path between ST and BI. This also means hypotheses 2, 3, 4 and 5 were supported while hypothesis 2 was not supported. At first, the weak influence of ST on BI was not statistically significant, because the path between ST and BI was insignificant

(beta = -0.017; t = 0.416; p > 0.05) hence hypothesis 1 was rejected. In contrast, SV had a positive influence on intention since the path between SV and BI was highly significant (beta = 0.301; t = 3.743; p < 0.001), fully supporting hypothesis 2. SC also had a positive effect on BI when the path between this two construct was moderately significant (beta = 0.236; t = 2.362; p > 0.05), upholding hypothesis 3. Besides, the path between SI and BI was also highly significant (beta = 0.351; t = 3.954; p > 0.001), SI thus had a significantly positive influence on BI, confirming hypothesis 4. Finally, BI is concluded that had positively affected UB, this two construct yielded a significant path (beta = 0.709; t = 22.891; p > 0.001), hypothesis 5 was thus accepted.

It is important to note that we used  $R^2$  to measure the model's explanatory power, interpreted in the same way as for regression analysis. The coefficient of determination,  $R^2$  is 0.672 for the BI endogenous latent variable. This reveals the latent variables ST, SV, SC, and SI explain about 67% ( $R^2 = 0.672$ ) of the variance in BI. UB, similarly, the coefficient of determination,  $R^2$  is 0.503, this reveals the latent variables BI explain about 50% ( $R^2 = 0.503$ ) of the variance in UB.

## CONCLUSION

### Theoretical Implications

This study extends the UTAUT to explain consumer acceptance of M-payments and promises an understanding of the factors that influence the acceptance of M-payments. The results of this study indicated that SV, SC issues, SI had an indirect influence on the M-payment adoption of Vietnamese consumers through consumers' BI to use. First at all, SI had the strongest effect on BI to use M-payment, followed by SV and SC issues. In addition, BI also had strong influence on UB of consumers. Thus we conclude that this study contributes to a better understanding of the factors that influence the acceptance of M-payments in Vietnam.

M-payments system is one of the most exciting mobile applications for the next few years in Vietnam, so that the results of the research in this thesis should be of interest to the business communities. The results of this study provides valuable information for mobile phone manufacturers, merchants, banking system, software developers, and practitioners as well as governments when developing their communication and business strategies regarding to Mpayment adoption. The identification of important factors concerning M-payments in this study will assist them to develop and improve their systems and service to ensure the full acceptance and continuous use of the systems.

### **Practical Implications**

The results obtained from this research suggest a few areas the M-payments industry should consider in order to develop and establish the industry. To increase the adoption of Mpayments, it is important that M-payment provider should think a way to build a good reputation or having a good company image in order to attract more M-payments customers. These approaches will be associated with ST. Service providers and system designers should ameliorate and improve the quality of the system in the early stage of the development. Furthermore, Good quality of service has always proved important to consumers' acceptance of M-payment. To attracting and retaining customers, M-payment provider should maintain and enhance the quality of their service. Last but not least, SC issue is one of the determinants that influence consumer acceptance of M-payments. Providers should concern about selecting an appropriate and secure technology solution, therefore with the advantage of new technologies, service providers can increase the SC of the M-payment environment.

### **LIMITATIONS**

Firstly, this study was conducted in only 5 major metropolises in Vietnam with data collection were geographically constrained, therefore the results may not be applicable to the whole country or other countries. Secondly, the sample method used in this study is convenience sampling and snowballing sampling, this method makes the randomness of sampling is insufficient and may lead to the deviation of a sample. Thirdly, the research framework only takes into consideration the consumers' perspective and was focused only on ST, SV, SI and SI dimensions. It might not fully reflect overarching situation of M- payment services in Vietnam.

### **FUTURE RESEARCH**

The results of our study offer insights into several issues that deserve further investigation. First at all, researcher should gather the viewpoints of merchants in subsequent research works. Besides, future research can extend UTAUT theoretical model to investigate the acceptance of M-payment system in particular, and generally technology applications in Vietnam or other countries. Finally, in view that M-payment is still at the infancy stage in Vietnam, it call for research in different dimension such as research can be extended to proposing ways to increase

M-payment adoption rate, studying of factors affect continuous use of M-payment, or exploring the satisfaction of M-payment consumers, etc.

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