

베트남 모바일결제시스템 수용의도에 영향을 미치는 요인에 관한 실증연구*

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An Empirical Study on Factors Affecting Customer Intention to Use Mobile Payment System in Vietnam*

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■ Abstract ■

Nowadays, mobile commerce is having an increasingly profound impact on our daily lives, and offer interesting and advantageous new services. Mobile payment is an emerging and important application of mobile commerce in smart work, enabling users to use their mobile devices (especially mobile phones) for paying goods and services wherever they go. The appearance of m-payment is expected to provide us a convenient and bright future to enjoy. That is the common trend on over the world, but in Vietnam, although the number of smart phone users has been increasing rapidly, the adoption of m-payment system still didn't succeed completely.

The research reviewed literature regarding mobile payment services, analyzed the impact of customer characteristics and system characteristics on m-payment adoption in Vietnam. To analyze the adoption behaviors of m-payment users, m-payment research model which consists of three customer-characteristics (m-payment trust, personal innovativeness, m-payment knowledge) and four m-payment system characteristics (mobility, reachability, convenience, compatibility) were studied. The results indicate that perceived usefulness, trust, and compatibility are the important predictors to the intention to use m-payment.

This study will assist m-payment services suppliers in implementing appropriate business models and service strategies to successfully attract customer to use m-payment in Vietnam, allowing managers to exert appropriate investment, time, and effort for m-payment system development in designing smart working.

Keyword : Vietnam Mobile Payment, Customer Characteristics, System Characteristics,
Intend to Use

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1. Introduction

Industry experts believe that m-payments subscribers will increase from 206 million users worldwide at the end of 2010 to 1,050 million users by the end of 2015. Researchers have predicted that worldwide, 5.4 billion smart phone handsets will be in circulation by 2015 which could result in approximately \$1 trillion m-payments worldwide by 2015. With a growing number of handset owners not having bank accounts, it is predicted that the mobile phone will become the influencing force to capitalize on the potential for smart working and wider potential of m-payment services enabled by the mobile phone (Richard, 2013).

As consumers become increasingly used at smart phones, the growing ownership will influence stronger adoption of m-payments, which at present is more inclined towards m-commerce than for person-to-person or point-of-sale transactions. Activities such as downloading and using applications are likely to lead to an increase in consumer mobile payment activities either for access to electronic payments (mainly in developing economies) or the convenience of mobile phone payments (in the developed world). Frequent use of activities related to mobile financial services in turn build trust and awareness, and give consumers willingness to try emerging mobile payment

This paper is to research on the effect of mobile payment system characteristics and customer characteristics on customer intention to use mobile payment services in Vietnam. Because studying about Vietnam mobile payment service quality not only help mobile payment suppliers in setting up operational strategies of smart

work to attract customers successfully, but also provides directions for future mobile payment-related studies in Vietnam that there is few prior study in this area.

2. Literature Review

2.1 The Characteristics of Vietnam Mobile Payment Market

According to Pricewaterhouse Coopers (PwC), e-commerce in Vietnam is a largely untapped market that's worth exploring. Projected market growth is expected to reach nearly US\$3 billion in a year's time, as close to 87 million aspiring consumers are taking advantage of increased broadband availability and steadily growing incomes. The southeastern Asian nation's e-commerce industry was valued at US\$300 million in 2011, but PwC estimates that it has grown and will continue to mature at a rate of 75 percent each year until 2015. Online payments accounted for US\$2.2 billion in 2013 : 314 percent year-over-year increase (Vietnamese news outlet Tuoi Tre News reported).

Vietnam currently has four kinds of Mobile Payment : SMS and Wap charging, SMS & Wap charging, E-wallet, E-banking service. E-wallet, E-banking payment methods have more advantages than method supplied by telecom operators. But the coverage is not yet wide. Because "Only 20% of the Vietnamese population has access to banking services ... 70% of the Vietnamese population lives in rural areas" (<http://dantri.com.vn>). Vietnam has a very large percentage of people in the remote areas, low-income, virtually no access to banking services.

Telcos payment have some features such as

low payout rate (45%) and slow payment (45 days), hard to connect directly, lack of support. Now, 90% of mobile payment in Vietnam are telcos payment.

Vietnamese market now accepts electronic payments thanks to mPOS deal (June 23, 2014 www.mobilepaymentstoday.com). Saigon Commercial Bank, which is also known as Sacombank in Vietnam, today announced a partnership with MasterCard to deploy mobile point-of-sale terminals to merchants who do business in the country's "Ben Thanh" market. The market, which is located in Ho Chi Minh, previously only accepted cash. The bank said the market is the first wet market in Vietnam to accept electronic payments. Sacombank launched the program with MasterCard and deployed 300 terminals to merchants at Ben Thanh market, as well as to a select number of insurance companies.

The rate of smart phone users are increasing (20% of the population in 2013), the percentage of smartphone users to find information, products, purchases, and payments. According to Google's investigative report on September 14th of 2014, the percentage of population using smart phones in Vietnam had risen to over 36%, nearly double the 20% rate of 2013.

Simon Kahn, CEO of Google Marketing in Asia Pacific (Chief Marketing Officer, Asia Pacific) said smart phones have changed consumer behavior. (www.thesaigontimes.vn). Smart phone users often search news, watch videos, download applications or in social networks, and this number is on the rise. According to a survey by Google, 92% of smart phone users are able to do many things at once, 64% among them responded that they had used the phone while listening to music in Vietnam.

2.2 Customer characteristic

The notion that customer characteristics are strong predictors to the adoption of any technological innovation has been a recurrent research theme in various disciplines including information systems, production, and marketing (Wirtz, 2010). In the information systems domain specifically, a relationship between customer characteristic and a variety of information system success outcome variables has been posited theoretically and demonstrated empirically in a large body of prior research (Lu, 2011; Wirtz, 2010). Numerous customer characteristic variables have been also researched, including cognitive variables, demographic variables, and personality-related variables (Kim et al., 2010; Yang, 2012).

A synthesis of prior research also suggests that user characteristics with respect to user motivation and capabilities are important determinants of success. For instance, Barnes (2002) found user success was positively associated with user motivation. Choi (2004) provided a review of work related to examining the effects of a variety of user characteristics variables within the context of promotion and adoption of new technologies.

2.3 Mobile Payment System Characteristic

System characteristics have the potential to affect directly both the perceived usefulness and perceived ease of use of IS (Davis, 1989). Previous research involving system qualities as external constructs of TAM has suggested strong relationships between the system characteristics and the TAM's theoretical constructs (Davis, 1989; Venkatesh and Davis, 2000). As mobile

commerce and related m-payment grow rapidly in importance, it is necessary to identify specific system characteristics and assess their individual effects on both of the perceived usefulness and the perceived ease of use of m-payment.

Mobile technology is a broad category which addresses all devices, protocols, and infrastructures that permit one to communicate and exchange data with other individuals or systems anywhere and anytime (Chau and Hu, 2001). With regard to mobile technology, the unique attributes include mobility and reachability, which provide mobile payments with advantages over online payments (Gefen, 2000; Gefen 2003; Gefen et al., 2003; Eastin, 2002). Mobility implies that users can carry cell phones or other mobile devices to conduct transactions from anywhere within a mobile network area. Reachability of the mobile devices make people to be contacted anytime and anywhere, and supplies users the choice to limit their reachability to particular people or times.

2.4 TAM Model

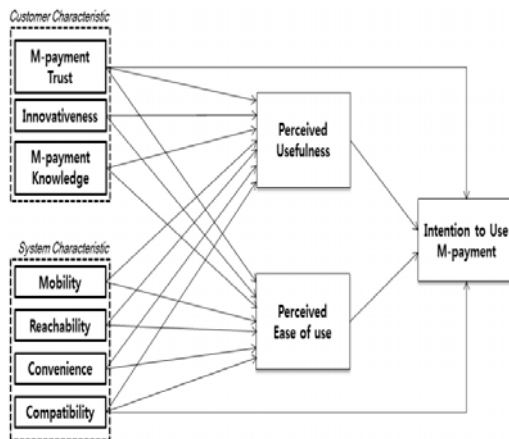
TAM has been used extensively to study the IT adoption behavior and is considered to be a seminal theory for technology acceptance and adoption (Gefen et al., 2003). It found that a user's IT adoption behavior is determined by user's intention to use the system, being related to the user's beliefs about the system. The basic model purports that perceived ease of use and perceived usefulness of a new technology are related to the behavioral intention to use the IS, and finally to the actual use of the IS. The general appeal for TAM lies in its empirical sound-

ness, parsimony, and reliable instrument with excellent measurement properties (Pavlou, 2003). Various IS studies have confirmed the explanatory power of TAM for technology acceptance, and it has been tested for multiple IS types (Davis, 1989; Moore and Benbasat, 1991; Venkatesh and Davis, 2000) and also for predicting user's acceptance of IS in different organizational contexts.

The two central belief constructs of perceived usefulness and perceived ease of use in the TAM may not fully explain the influence of other usage factors that may affect the user's adoption intention (Davis, 1989). Previous IS studies have extended the TAM by adding constructs such as "perceived playfulness", "product involvement and perceived enjoyment", "computer self-efficacy" (Chau and Hu, 2001), "personal innovativeness", "perceived information quality", and "social factors." Few studies have also explored "trust" as an added construct to the Internet shopping (Gefen et al., 2003) and e-Government contexts. Doney and Cannon (1997) integrated "trust" and "perceived risk" in the acceptance model to study consumer acceptance of e-commerce. "Consumer trust" which reflects the user's concerns about the reliability of technology enabled transactions may be concerned importantly in the context of m-payment systems given the nature of environmental and mobile service provider related uncertainties. Pavlou (2003) examined trust as the antecedent of cognitive beliefs for the user acceptance of e-commerce. Drawing from Pavlou (2003) study we contextualize the trust antecedents to the m-payment situation and propose a trust-theoretic m-payment adoption model.

3. Research Design

Previous research has identified two principal categories of external variables—namely, customer characteristics and system characteristics—as major external variables of the TAM (Davis, 1989; Venkatesh, 2000). The proposed research model includes three constructs of the customer characteristics and four constructs of m-payment system characteristics (MPS), see <Figure 1>.



<Figure 1> Research Model

3.1 Hypothesis

With the purpose to find out successful factors for the adoption of mobile payment in Vietnam, this research applies previous study results according to the structure in <Figure 1> and hypothesize :

- H1-1** : Consumer trust positively impact upon the perceived usefulness of the m-payment systems.
- H1-2** : Personal innovativeness positively impact upon the perceived usefulness of m-payment.

- H1-3** : M-payment knowledge positively impact upon the perceived usefulness of m-payment.
- H1-4** : Mobility positively impact upon the perceived usefulness of m-payment.
- H1-5** : Reachability positively impact upon the perceived usefulness of m-payment.
- H1-6** : Convenience positively impact upon the perceived usefulness of m-payment.
- H1-7** : Compatibility positively impact upon the perceived usefulness of m-payment.
- H2-1** : Consumer trust positively impact upon the perceived ease of use of m-payment systems.
- H2-2** : Personal innovativeness positively impact upon the perceived ease of use of m-payment.
- H2-3** : M-payment knowledge positively impact upon the perceived ease of use of m-payment.
- H2-4** : Mobility positively impact upon the perceived ease of use of m-payment.
- H2-5** : Reachability positively impact upon the perceived ease of use of m-payment.
- H2-6** : Convenience positively impact upon the perceived ease of use of m-payment.
- H2-7** : Compatibility positively impact upon the perceived usefulness of m-payment.
- H3-1** : Perceived ease of use positively impact upon the adoption intention for the m-payment systems.
- H3-2** : Perceived Usefulness positively impact upon the adoption intention for the m-payment systems.
- H3-3** : Consumer trust positively impact upon the adoption intention for m-payment systems.
- H3-4** : Compatibility positively impact upon

the adoption intention for m-payment systems.

3.2 Variable Measurements

Measurement items were developed based on prior research, adopted with change in wording appropriate for mobile payment context. More details on variable measurements are shown in <Table 1>. All these items are measured on a seven-point Likert scale. The survey included demographic questions about age, gender, expe-

rience to use mobile service, career and education level. Detailed measure items are shown in Appendices.

A sampling of 365 questionnaires was collected from Vietnamese people. After removing 21 respondents having problem, 344 ones were used as an analysis of research models. The rate of meaningful questionnaires was 94.2%. SPSS 18.0 was used for basic statistical analysis, factor analysis, reliability analysis. AMOS 18.0 was used for path analysis between factors.

<Table 1> Operational Definition of Variables

Variables	Definitions	Sources
M-payment Trust	The degree to which a person believes the promise of another and that the other will act in a spirit of goodwill toward the trustor in unforeseen circumstances.	Gefen et al. (2003) Delichte (2001)
Individual innovativeness	The degree to which an individual have also been shown to be communicative, curious, dynamic, venturesome, and stimulation-seeking. That is inclination of an individual to try out new information systems.	Kim et al. (2010) Yang (2012)
M-payment Knowledge	The degree that user can utilize their experience to facilitate their information processing and to distinguish relevant and irrelevant information.	Kim et al. (2010) Lee and Noh (2009)
Mobility	The degree to which a person believes that using m-payment service through a mobile phone would make payment for products or services accessible on move, anytime, anywhere at the point of need.	Knol and Stroeken (2001) Kumar and Zahn (2003) Legris et al. (2003)
Compatibility	The degree to which an innovation is compatible with existent technologies and consistent with users' needs and prior experiences.	Lederer et al. (2000) Kim (2007)
Reach-ability	The degree that m-payment system can be connected by users anytime and anywhere, and helps users to limit their reachability to particular people or times.	Kim et al. (2010) NG-Kruelle et al. (2002)
Convenience	The degree that m-payment system fitting in well with a person's need, activities, and plans. It is related to the elements generating time and place utility for users.	Eastin (2002) Delichte (2001) Yoris (2008)
Perceived Usefulness	The degree to which a person believes that using m-payment services through a mobile phone would enhance his/her performance	Gefen et al. (2003) Davis (1989)
Perceived Ease of use	The degree to which a person believes that using m-payment services through a mobile phone would be free of effort.	Gefen et al. (2003) Davis (1989)
Intention to Use M-payment	The users' likelihood to use m-payment services.	Gefen et al. (2003) Davis (1989)

4. Empirical Analysis

4.1 Demographic Analysis

A total number of 344 responses were utilized in the analysis. The demographic characteristics and general statistical characteristics are following <Table 2>.

<Table 2> Demographic Profile of Respondents

Item		Frequency analysis	
		Frequency	%
Gender	Male	155	45.1
	Female	189	54.9
Age	Under 20 years-old	6	1.7
	21~30 years-old	268	77.9
	31~40 years-old	54	15.7
	Over 40 years-old	16	4.7
Experience	Yes	334	97.1
	Not yes	10	2.9
Education	Under high school	4	1.2
	High school	6	1.7
	College	22	6.4
	University	113	32.8
	Master or higher degree	199	57.8
Occupation	Pupil/Student	119	34.6
	Public servant/ Lecturer	52	15.1
	Researcher	63	18.3
	Waged worker	67	19.5
	Entrepreneur	8	2.3
	House wife	5	1.5
	Freelancer	24	7.0
	Other	6	1.7
Monthly Income	Less than 100USD	25	7.3
	100~250 USD	27	7.8
	250~500 USD	106	30.8
	500~1000 USD	111	32.3
	Over 1000 USD	75	21.8

4.2 Reliability and Validity Analysis

Validity and Reliability were examined by computing Cronbach's alpha coefficient. Discriminant and convergent validity of the scales were initially examined using extraction method is principal axis factor analysis with varimax rotation. The factor analysis for each construct are present detail in <Table 3>.

After analyzing the data with varimax rotation, 52 variables was grouped into 10 groups of factor.

The MSA (Kaiser-Meyer-Olkin measure of sampling adequacy) was found to be 0.951. Therefore, the application of factor analysis was concluded appropriate.

Most of 10 factors were identified with Eigen values greater than 1.0. The Cronbach's alpha (reliability) ranges from 0.880 to 0.959. Because the overall reliability of measurement was above 0.8, the measurement instrument was shown to have a sufficient internal consistency. As a result, the data were found to be appropriate for further analysis.

4.3 Research Model Evaluation

The fitness of the research model from the covariance structure modeling analysis is presented in <Table 4>. With regard to the results of our analysis of the fitness, the p value for (796.157) χ^2 appeared as 0.000, which did not satisfy the standard. However, as the result is affected by the sample size and complexity of the model sensitively, it was determined that it was more proper to evaluate the fitness by means of RMR, GFI, NFI, CFI, and RMSEA. The comparison of all fit indices provided evidence of acceptable model fit (NS = 1.873, RMR = 0.044, GFI

〈Table 3〉 Results of Reliability and Validity Analysis

Factors	Items	Factor group										Cronbach's Alpha
		1	2	3	4	5	6	7	8	9	10	
PE	PE2	0.749	0.169	0.137	0.202	0.236	0.214	0.166	0.093	0.151	0.189	0.959
	PE3	0.748	0.208	0.113	0.221	0.237	0.221	0.164	0.183	0.154	0.158	
	PE1	0.716	0.234	0.097	0.261	0.232	0.213	0.119	0.143	0.136	0.244	
	PE4	0.714	0.262	0.098	0.133	0.185	0.208	0.171	0.219	0.203	0.208	
	PE5	0.637	0.313	0.157	0.184	0.201	0.160	0.172	0.234	0.332	0.157	
	PE6	0.631	0.272	0.117	0.181	0.212	0.213	0.202	0.125	0.311	0.141	
TR	TR2	0.143	0.814	0.116	0.052	0.071	0.152	0.158	0.102	0.205	0.169	0.945
	TR1	0.144	0.761	0.162	0.103	0.228	0.185	0.157	0.232	0.119	0.087	
	TR3	0.148	0.750	0.136	0.108	0.238	0.164	0.159	0.094	0.186	0.004	
	TR5	0.258	0.722	0.075	0.375	0.098	0.168	0.056	0.145	0.016	0.067	
	TR4	0.264	0.708	0.160	0.327	0.089	0.188	0.123	0.121	0.033	0.167	
	TR6	0.235	0.685	0.265	0.200	0.143	0.236	0.191	0.204	0.084	0.056	
IN	IN4	0.100	0.084	0.866	0.131	0.047	0.153	0.077	0.062	-0.03	0.037	0.924
	IN5	0.022	0.046	0.82	-0.012	0.111	0.095	0.134	0.151	0.102	0.033	
	IN3	0.123	0.127	0.805	0.219	0.073	0.073	0.188	0.072	-0.045	0.123	
	IN6	0.186	-0.013	0.796	0.192	0.107	0.028	0.151	0.142	0.006	0.008	
	IN2	-0.011	0.268	0.780	-0.059	0.105	0.146	0.001	0.159	0.167	0.000	
	IN1	0.054	0.219	0.752	-0.082	0.064	0.170	0.066	0.167	0.157	0.182	
MO	MO3	0.185	0.110	0.081	0.778	0.04	0.149	0.087	0.142	0.306	0.086	0.919
	MO2	0.126	0.207	0.109	0.768	0.084	0.125	0.110	0.141	0.263	0.061	
	MO1	0.211	0.282	0.063	0.753	0.148	0.105	0.120	0.112	0.122	0.175	
	MO6	0.212	0.197	0.066	0.631	0.436	0.166	0.099	0.078	0.116	0.269	
	MO4	0.18	0.118	0.100	0.627	0.318	0.180	0.192	0.133	0.058	0.295	
PU	PU3	0.356	0.224	0.166	0.264	0.637	0.214	0.191	0.121	0.258	0.133	0.958
	PU2	0.364	0.249	0.103	0.288	0.625	0.238	0.193	0.16	0.158	0.205	
	PU5	0.286	0.168	0.237	0.114	0.623	0.243	0.275	0.143	0.233	0.233	
	PU1	0.347	0.254	0.155	0.355	0.618	0.142	0.16	0.164	0.202	0.162	
	PU4	0.241	0.250	0.219	0.102	0.593	0.273	0.214	0.222	0.315	0.125	
	PU6	0.283	0.256	0.201	0.165	0.568	0.284	0.191	0.183	0.259	0.279	
IU	IU2	0.202	0.318	0.162	0.246	0.207	0.714	0.135	0.202	0.141	0.082	0.952
	IU5	0.271	0.272	0.253	0.166	0.26	0.709	0.175	0.152	0.140	0.044	
	IU1	0.199	0.261	0.140	0.152	0.202	0.707	0.193	0.210	0.142	0.209	
	IU6	0.253	0.203	0.319	0.130	0.148	0.682	0.285	0.127	0.158	0.128	
	IU4	0.294	0.271	0.220	0.197	0.151	0.678	0.148	0.305	0.015	0.127	
COM	COM4	0.153	0.189	0.265	0.075	0.153	0.161	0.722	0.320	0.157	0.174	0.939
	COM3	0.247	0.219	0.234	0.100	0.122	0.188	0.669	0.331	0.153	0.206	
	COM5	0.229	0.196	0.185	0.281	0.259	0.234	0.627	0.135	0.153	0.207	
	COM2	0.216	0.321	0.245	0.200	0.196	0.247	0.621	0.16	0.234	0.100	
	COM6	0.257	0.233	0.204	0.240	0.377	0.243	0.594	0.112	0.102	0.165	
MK	MK2	0.111	0.149	0.177	0.103	0.062	0.128	0.165	0.845	0.093	0.039	0.880
	MK3	0.093	0.289	0.181	0.024	0.081	0.183	0.067	0.768	0.184	0.069	
	MK1	0.194	0.084	0.174	0.210	0.155	0.111	0.153	0.749	-0.020	0.115	
	MK5	0.175	0.138	0.249	0.166	0.151	0.193	0.19	0.650	-0.180	0.087	

REA	REA2	0.272	0.228	0.133	0.309	0.117	0.198	0.078	0.063	0.675	0.103	0.909
	REA3	0.232	0.150	0.067	0.200	0.292	0.111	0.184	0.050	0.663	0.208	
	REA4	0.261	0.189	0.095	0.400	0.302	0.047	0.156	-0.001	0.657	0.104	
	REA5	0.273	0.145	0.056	0.360	0.230	0.161	0.322	-0.031	0.567	0.280	
CON	CON3	0.321	0.110	0.137	0.236	0.133	0.138	0.189	0.101	0.378	0.667	0.935
	CON2	0.289	0.125	0.179	0.320	0.253	0.140	0.150	0.159	0.322	0.640	
	CON4	0.465	0.212	0.076	0.238	0.206	0.129	0.276	0.074	0.086	0.577	
	CON1	0.332	0.161	0.149	0.332	0.335	0.174	0.215	0.149	0.014	0.560	
	CON5	0.334	0.202	0.112	0.218	0.355	0.180	0.340	0.189	0.165	0.521	
Eigen value		26.971	3.922	2.335	1.921	1.709	1.309	1.269	1.156	1.001	0.793	
Accumulative distribution (%)		51.867	7.542	4.490	3.694	3.286	2.518	2.440	2.223	1.925	1.525	

= 0.817, NFI = 0.880, CFI = 0.915, TLI = 0.901, and RMSEA = 0.077). Thus, we move to the final step of the study, the test of the hypotheses.

<Table 4> Measures of Model Fitness

CMIN = 796.157, df = 425, p = 0.000, CMIN/df = 1.873, RMR = 0.044, GFI = 0.817, NFI = 0.880, IFI = 0.916, TLI = 0.901, CFI = 0.915, RMSEA = 0.077
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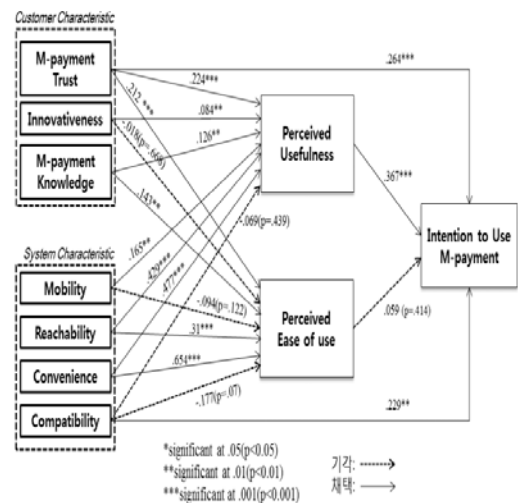
4.4 Hypothesis Testing

In an effort to determine the effects of m-payment system characteristics and customer characteristics on the perceived ease of use, usefulness, and intention to use m-payment, we conducted covariance structure modeling analysis, the test results of which are shown in <Figure 2> and <Table 5>.

First, we examine the effects on perceived usefulness. Among customer characteristics, trust with C.R value = 4.313 (Standard C.R. > ±1.96) is associated positively with perceived usefulness at a significance level of p = 0.000; therefore, we concluded that Hypothesis 1_1 was supported. In addition, innovativeness (IN) is also related positively to perceived usefulness at a significance level of 0.045; therefore, Hypothesis

1_2 is supported. Similarly, we have supported Hypotheses are H1_3, H1_4, H1_5, H1_6 showed that m-payment knowledge, mobility, reachability, convenience are associated positively with perceive usefulness. However, Hypothesis H1_7 was not supported (p = 0.439).

Second, we examine the effects on perceived ease of use. We have supported hypothesis H2_1, H2_3, H2_5, H2_6 showed that trust, m-payment knowledge, reachability, convenience are associated positively with perceived ease of use. Not supported hypothesizes are H2_2, H2_4, H2_7.



<Figure 2> Hypothesis Test

〈Table 5〉 Hypothesis Test Result

Hypothesis	Attributes	Beta	S.E	C.R.	P	Status
H1_1	TR > PU	0.224	0.053	4.313	0.000	Supported
H1_2	IN > PU	0.084	0.038	2.009	0.045	Supported
H1_3	MK > PU	0.126	0.046	2.517	0.012	Supported
H1_4	MO > PU	0.165	0.062	2.829	0.005	Supported
H1-5	REA > PU	0.429	0.059	6.687	0.000	Supported
H1_6	CON > PU	0.477	0.068	6.644	0.000	Supported
H1_7	COM > PU	-0.069	0.100	-0.774	0.439	Not supported
H2_1	TR > PE	0.212	0.056	3.828	0.000	Supported
H2_2	IN > PE	-0.018	0.039	-0.401	0.688	Not supported
H2_3	MK > PE	0.143	0.048	2.673	0.007	Supported
H2_4	MO > PE	-0.094	0.064	-1.545	0.122	Not supported
H2-5	REA > PE	0.310	0.06	4.67	0.000	Supported
H2_6	CON > PE	0.654	0.075	8.111	0.000	Supported
H2_7	COM > PE	-0.177	0.107	-1.814	0.070	Not supported
H3_1	PE > IU	0.059	0.075	0.817	0.414	Not supported
H3_2	PU > IU	0.367	0.091	4.129	0.000	Supported
H3_3	TR > IU	0.264	0.066	4.228	0.000	Supported
H3_4	COM > IU	0.229	0.088	2.964	0.003	Supported

At last, we examine the effect of perceived ease of use, perceived usefulness, trust and compatibility on Customer Intention to use m-payment. Perceived usefulness and Trust are associated positively with Intention to use a significance level of $p = 0.000$, Compatibility is associated positively with Intention to use a significance level of $p = 0.003$. The factor perceived usefulness have most effect on Intention to use, after that is Trust, and then Compatibility. However, the hypothesis examining the relation between perceived ease of use and customers' intention to use is not supported.

5. Conclusion and Discussion

5.1 Research Summary

In this study, we explore the factors motivating consumers' adoption of mobile payment. In order to adapt the TAM to the research context of mobile payment, we extended it by incorporating three user centric factors (mobile payment

knowledge, mobile payment trust, individual innovativeness), four system characteristics (mobility, reachability, convenience and compatibility) in our research model.

The results show that three factors affect consumers' intention to adopt mobile payment directly and positively : 1) perceived usefulness, 2) mobile payment trust, and 3) compatibility. Among the three variables, perceived usefulness has the highest predictive values on intention to use mobile payment. It is followed by mobile payment trust and compatibility.

What is interesting, our findings highlight that compatibility has a strong, significant and positive direct influence on intention to use, even though it does not implicate perceived usefulness and perceived ease of use. We think that consumers care most about whether mobile payment is versatile enough to meet the ways of paying at present, not about how compatibility make m-payment useful and easy to use. In current, Vietnam don't have many services, methods

supply for mobile payment, so people have not identified the compatibility as a factor affect the usefulness and easiness of mobile payment.

Consistent with our expectations and prior research, we found that perceived usefulness still plays important role in determining consumers' intention to use mobile payment—consumers are more likely to adopt an IS if it is useful. The strong, significant and positive effect of trust on perceived usefulness and intention to use is consistent with prior research findings (Lee and Noh, 2009).

Contrary to our expectations, perceived ease of use is not significant predictors of consumers' intention to use mobile payment. This is also in contrast to prior findings in predicting mobile payment success (Yang, 2012; Kim et al., 2010). But in recent research, some finding on the insignificant influence of perceived ease of use on customers' intention to use IS implies that one cannot use TAM as such, when studying non-users' intention to adopt (Kim, 2007). Plausible reasons for the findings might be that the users' expectation is that payments are not exactly easy as such, but must be done nevertheless, and in useful, safe and secure way. And in the context that mobile payment is still new in Vietnam, people might not feel the easiness of mobile payment as a factor to adopt mobile payment. Anyway, there is no clear indication of perceived ease of use to affect the intention to adopt among the customers.

The impact of mobile payment trust, innovativeness, mobile payment knowledge, mobility, reachability, convenience on perceived usefulness reflects that they will improve consumers' understanding on the usefulness of mobile payment.

The result reflects that mobile payment trust,

mobile payment knowledge, reachability, convenience on perceived ease of use will improve consumers' understanding on the ease of use mobile payment. However, personal innovativeness and mobility don't have effect on perceived ease of use. The reason might be because currently, Vietnam don't have the context that people can pay at stores, markets by card if they don't have cash, so Vietnam customer can't identify using mobile tool such as mobile payment are easy. In the same, even innovative person also might not feel the easiness of using mobile payment because of that context. So it might be understandable that mobility and personal innovativeness don't have relationship with perceived ease of use of mobile payment.

To summarize our findings, it seems the factors influencing the intention to adopt new means of payment, mobile payment, are fewer than expected. It is better to be compatible with existing values, past experiences, and the needs of potential users, it must be useful to use, and the more customer trust about mobile payment, the more willing they are to adopt. It seems that ease of use is not seen as an issue, while considering to adopt mobile payment.

We think that the usefulness, compatibility and reliability of paying with mobile payment might moderate customers' perception about ease of use in this context.

5.2 Implications and limitations

This paper is one of the first research on m-payment system in Vietnam and provided insights into the factors concern intention to use m-payment services and relationships among some related variables, also it has some limitations. Notably, the subjects are not representa-

tive fully of the entire population because most of the sample was drawn from young people which have high education (21~30 years-old 78%, university and master or higher degree 90.6%), most of them have experience to use mobile service by smart phone (97.1). As a result, we didn't examine the effects of other potential variables such as demographic characteristics including age, job, and income etc. In fact, general people in Vietnam those who are not familiar with high technology service may be sensitive to Perceived ease-of-use which were found insignificant in our study. So further research are needed for more various user segmentation.

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