

## Differences in Consumers' Intention to Use E-Payments in Large Cities and Small Provinces in Vietnam

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ARTICLE INFO	ABSTRACT
Published Online: 05 May 2022	The main objective of this paper was to contribute to the general understanding of consumer intention for using E-payment. In particular, the study examines differences in consumer intention in large cities and small provinces. A total 170 customers in Tay Ninh province and 131 customers in Ho Chi Minh city participated in this study by responding to a structured questionnaire. The findings indicate that factors impacting consumer intention to use E-payment in big cities are effort expectancy, performance expectancy, social influence, user innovativeness, facilitating conditions.
Corresponding Author: <b>Nguyen Thi Thanh Van</b>	However, there is a slight difference that effort expectancy does not affect consumer intention to use E-payment in Tay Ninh province, instead it is the perceived risk factor. Therefore, E-payment service providers implement their development strategies.
<b>KEYWORDS:</b> E-payment, consumers' intention, UTAUT, Vietnam	

### I. INTRODUCTION

E-payments are an important component of E-commerce. As E-commerce grows, more and more E-payments will be made. According to Euromonitor (a market research firm) data in March 2020 in Vietnam, the E-commerce value in 2019 reached USD 11.8 billion, a growth rate of 18%. The annual growth rate is expected to be 16% and reach USD 26.1 billion by 2024. About E-payment, according to information from NAPAS (Vietnam National Payment Joint Stock Company), up to March 2020, the number of online payment transactions was about 76%, the total transaction value increased by 124% over the same period in 2019. In the first 5 months of 2021, more than 800 million transactions were processed (equivalent to around VND 8 million billion), an increase of 113% in quantity and a 169% increase in transaction value compared to the same period last year.

In Vietnam, E-payment is a new method made through mobile devices with network connection, suitable for the flow of the market such as payment via e-wallets Zalo pay, Momo, etc.; or direct payment from an electronic bank such as online payment internet banking; payment on smart phone - mobile banking; scanning visa card, master card, QR code.... These online payment methods are becoming more and more popular with many people because of their convenience, speed and ease. The Covid-19 pandemic makes E-payment forms develop more than ever.

Customers using E-payment in Vietnam are often concentrated in big cities, who like convenience, speed and can experience trendy online services. They are becoming familiar with this type of online payment. However, in small provinces, this type of online transaction and electronic payment is not popular and still unfamiliar to consumers. Therefore, this paper aims to contribute to the general understanding of consumer's intention for using E-payment. In particular, the study examines differences in consumer intention in large cities and small provinces.

### II. LITERATURE REVIEW

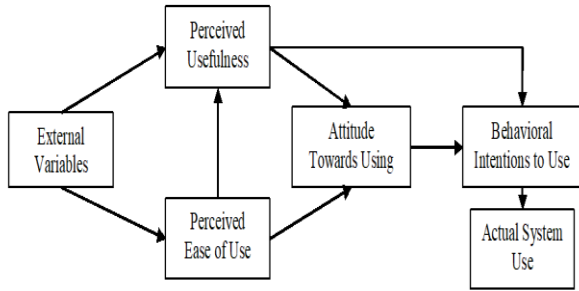
#### E-payment

E-payment payments are defined as payments made in electronic commerce environment in the form of money exchange through electronic means (Kaur & Pathak, 2015). Kabir, et al. (2015) defined E-payment system as a collection of components and processes that enables two or more parties to transact and exchange monetary value via electronic means.

In Vietnam, from 2015 until now, E-payment has developed strongly alongside the development of the Internet, smartphones, bank cards and E-commerce sites. Nowadays, in Vietnam, there are 04 most widely used E-payment channels, including: payment by card, payment by payment gateway, payment by e-wallet, and payment by smartphone.

**Technology Acceptance Model – TAM**

Davis et al. (1989) provided Technology Acceptance Model - TAM to explain consumer acceptance behavior in the most fundamental and reasonable way. Through studying people who use technology, TAM has surveyed external variables to internal perception, attitude, and intention. The model includes: External variables, perceived usefulness, perceived ease of use, attitude towards using, behavioral intentions to use and actual system use.

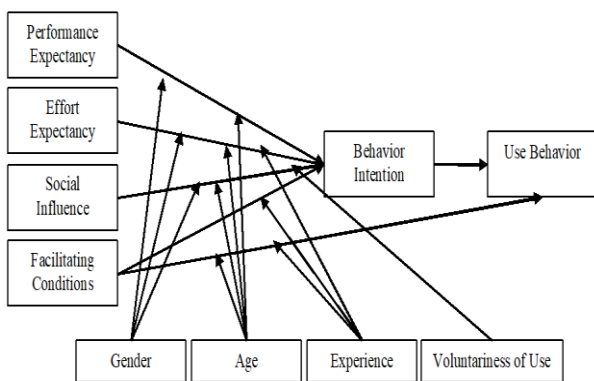


**Figure 1:** Technology Acceptance Model - TAM  
**Source:** Davis et al. (1989)

**Unified Theory of Acceptance and Use of Technology - UTAUT**

Venkatesh, et al. (2003) developed the Unified Theory of Acceptance and Use of Technology - UTAUT through synthesizing and unifying Theory of Reasoned Action TRA, the Technology Acceptance Model TAM, Motivational Models MM, Theory of Planned Behavior TPB, the Model of the PC Utilization MPCU, Diffusion of Innovations theory DOI, and Social Cognitive Theory SCT.

The Unified Theory of Acceptance and Use of Technology - UTAUT has 4 factors that affect intention and technology use: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions.



**Figure 2:** Unified Theory of Acceptance and Use of Technology - UTAUT  
**Source:** Venkatesh et al. (2003)

Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her attain gains in job performance. Performance expectancy is connected with these five concepts: perceived usefulness (TAM/TAM2 and C-TAM-TPB), extrinsic

motivation (MM), job-fit (MPCU), relative advantage (IDT), and outcome expectations (SCT).

Effort expectancy is defined as the degree of ease associated with the use of the system. Effort expectancy is related to three concepts: perceived ease of use (TAM/TAM2), complexity (MPCU), and ease of use (IDT).

Social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system. Social influence is associated with three concepts: subjective norm (TRA, TAM2, TPB/IDTPB, and C-TAM-TPB), social factors (MPCU), and image (IDT).

Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. Facilitating conditions are linked with three concepts: perceived behavioral control (TPBI DTPB, C-TAM-TPB), facilitating conditions (MPCU), and compatibility (IDT).

**Hypotheses Development for the Proposed Model**

Social influence: According to Junadi and Sfenrianto (2015), social influence will impact everyone around. When relatives and friends use E-payment, the mentality of keeping up with modern trends will promote a far-reaching impact in society. Relatives and friends are reliable sources of information for an individual to get introduced and familiarized with new trends because they have first-hand experience to consult and explain in a comprehensible and detailed manner. Therefore, the study puts forward a hypothesis:

H1: Social influence has positive impact on Consumers' intention to use E-payment

Effort expectancy: According to the model of Junadi and Sfenrianto (2015) and Venkatesh, et al. (2012), effort expectancy will increase the use of E-payment. This model suggests that transactions on the internet are /should be easy to use with a few guided steps; a quick performance also provides simple and clear E-payment interactions. This is the foundation for hypothesis:

H2: Effort expectancy has positive impact on Consumers' intention to use E-payment

Performance expectancy: Junadi and Sfenrianto (2015), Venkatesh, et al. (2012) also give the result: E-payment helps boost transaction efficiency, and allows us to omit the tedious cash preparation step thus making transactions more convenient and faster. On the other hand, Venkatesh, et al. (2012) believe E-payment is very useful in everyday life. Hence the suggestion of this hypothesis:

H3: Performance expectancy has positive impact on Consumers' intention to use E-payment

Facilitating conditions: With reference to the model of Venkatesh, et al. (2003), given favorable conditions such as a readily available computer system with internet connection, it is easier and more likely to perform E-payment. Besides, knowing how to use E-payment and getting updated on necessary information will promote this

behavior. Furthermore, receiving external help from an instructor/an E-payment service provider will provide positive conditions for E-payment. Lastly, with assistance from relatives, an individual will have an optimal guide to complete E-payment. Therefore, this hypothesis is proposed:

H4: Facilitating conditions has positive impact on Consumers' intention to use E-payment

Perceived risk: According to Nguyễn Duy Thanh and Huỳnh Anh Phúc (2018); Lê Văn Phúc, et al. (2019), even though consumers use E-payment, they are still worried about the risk level. Consumers have a perception of this risk, and they suspect the money may get stolen or cheated in online internet transactions. Furthermore, consumers fear for personal information leakage or data theft from hackers, or they fear that E-payment is not safe. Therefore, the larger the risk is, the less likely a consumer accepts E-payment. Hence the proposal of the hypothesis:

H5: Perceived risk has negative impact on Consumers' intention to use E-payment

User innovativeness: Referring to the model of Zhang & Kizildag (2018); Hirunyawipada and Paswan (2006); Lê Văn Phúc, et al. (2019), it was shown that the more developed the information technology is, the more products are created. Consumers always want to experience and discover new things and sometimes they want themselves to be the first to use a new product with a very proud attitude. It is the same for E-payment, alongside the development of science and technology are many new channels of E-payment, more advanced, better in quality, faster than their predecessors. Therefore, this hypothesis is proposed:

H6: User innovativeness has positive impact on Consumers' intention to use E-payment

**III. RESEARCH METHODOLOGY**

Measurement scale for the observed variables is inherited and modified from the scale of Junadi and Sfenrianto (2015), Venkatesh et al. (2012) ... and uses the 5-point Likert scale where point 1 means totally disagree and point 5 means totally agree. The research methodology is quantitative and the primary data is collected through surveys. The sampling method adopted is convenience sampling. Bollen (1989) suggested that an empirical ratio of at least five observations per each estimated parameter (5:1). Thus, a sample size of 100 (20x5) or more can be accepted for this research.

The surveyed people are consumers who have known about E-payment. The survey is conducted in Ho Chi Minh city and Tay Ninh province. There are 131 valid questionnaires at Ho Chi Minh city and 170 ones at Tay Ninh province with completed information used in the analysis.

**IV. THE RESULTS**

**4.1 Testing for Reliability of Scales**

The Cronbach's Alpha in Table 1 shows that all scales are rather high (the minimum is 0.761>0.6). In the data from Tay Ninh province, HQ4 and DK4 items are removed and the item-total correlations of other items are over 0.3. Thus, all measurement items should be tested using Exploratory Factor Analysis (EFA).

**Table 1:** Cronbach's Alpha Results of Measurement Items

Code	Items	Source	Cronbach's Alpha	
			Data from HCM City	Data from Tay Ninh province
	<b>Social influence (XH)</b>	Junadi and Sfenrianto (2015)	<b>0.798</b>	<b>0.885</b>
XH1	The important people (family/ relatives/ friends) recommends E-payment		0.538	0.801
XH2	The important people (family/ relatives/ friends) use E-payment system		0.633	0.770
XH3	The important people (family/ relatives/ friends) support the use of E-payment		0.769	0.756
	<b>Effort expectancy (NL)</b>	Junadi and Sfenrianto (2015)	<b>0.793</b>	<b>0.887</b>
NL1	Easy of use e-payment system		0.545	0.734
NL2	Easy to learn E-payment system		0.749	0.789
NL3	My interaction with E-payment is clear and understandable	Venkatesh et al. (2012)	0.623	0.819
	<b>Performance expectancy (HQ)</b>	Junadi and Sfenrianto (2015); Venkatesh et al. (2012)	<b>0.776</b>	<b>0.834</b>
HQ1	Productivity in the transaction		0.533	0.727
HQ2	Convenient in the transaction		0.647	0.710
HQ3	Speed in the transaction		0.515	0.656
HQ4	I find E-payment useful in my daily life		0.668	(removed)
	<b>Facilitating conditions (DK)</b>	Venkatesh et al.	<b>0.761</b>	<b>0.883</b>

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DK1	I have the resources necessary to use E-payment	(2012)	0.604	0.814
DK2	I have the knowledge necessary to use E-payment		0.603	0.748
DK3	E-payment is compatible with other technologies		0.561	0.763
DK4	I can get help from others when I have difficulties using E-payment		0.477	(removed)
	<b>Perceived risk (RR)</b>	Nguyen and Huynh (2018)	<b>0.832</b>	<b>0.829</b>
RR1	There may be leaked information online transactions		0.655	0.667
RR2	There may be caused fraud or lost money when using E-payments		0.655	0.664
RR3	There may be accessed into unauthorized personal data by hackers		0.652	0.637
RR4	E-payment transactions may not be secure		0.683	0.659
	<b>User innovativeness (DM)</b>	Zhang and Kizildag (2018); Le et al. (2019)	<b>0.868</b>	<b>0.772</b>
DM1	When I hear about a new product, I look for ways to try it.		0.684	0.554
DM2	Among my peers, I am usually the first one to try a new product		0.801	0.635
DM3	Whenever the new product gets to the market, I am among the first to know		0.762	0.672
	<b>Consumers' intention to use E-payment (SD)</b>	Junadi and Sfenrianto (2015) Venkatesh et al. (2012); Phan et al. (2020)	<b>0.817</b>	<b>0.895</b>
SD1	I plan to use E-payment		0.531	0.707
SD2	I intend to using E-payment		0.450	0.763
SD3	I intend to continue using E-payment in the future		0.699	0.675
SD4	I plan to continue to use E-payment		0.735	0.793
SD5	Recommend others to use e-payment system		0.654	0.770

Exploratory Factor Analysis (EFA) with principal axis factoring in conjunction with promax rotation was

conducted to explore dimensionality of factors (construct). The results shown in Table 2.

**Table 2:** Exploratory Factor Analysis (EFA) Results of Measurement Items

Factor	Data from HCM City				Data from Tay Ninh province			
	KMO	Number of Items	Eigen-value	Total variance explained	KMO	Number of Items	Eigen-value	Total variance explained
Social influence	0.739	3	1.032	72.122	0.753	3	1.43	76.30
Effort expectancy		3						
Performance expectancy		4						
Facilitating conditions		2						
Perceived risk		4						
User innovativeness		3						
Consumers' intention to use E-payment	0.777	5	2.934	58.684	0.885	5	3.52	70,45

With results of CRA and EFA, the scales of concepts are accepted and have their reliability guaranteed. The number of factors extracted for factors that influence Consumers’

intention to use E-payment is 6, which is consistent with the proposed hypothesis.

4.2. Results of hypotheses test

Table 3: Results of Measurement Items

	Hypothesis	Data from HCM City		Data from Tay Ninh province			
		Standardized Coefficients	Sig.	Hypothesis support	Standardized Coefficients	Sig.	Hypothesis support
Social influence	H1	0.402	0.000	Yes	0.256	0.000	Yes
Effort expectancy	H2	0.182	0.007	Yes	0.094	0.080	No
Performance expectancy	H3	0.311	0.000	Yes	0.253	0.000	Yes
Facilitating conditions	H4	0.234	0.001	Yes	0.321	0.000	Yes
Perceived risk	H5	-0.021	0.756	No	-0.179	0.002	Yes
User innovativeness	H6	0.320	0.000	Yes	0.151	0.008	Yes

From table 3, a difference is shown between E-payment users in Ho Chi Minh City and Tay Ninh province. In Ho Chi Minh city, H5 examines the relationship between perceived risk and consumers’ intention to use E-payment, which is not supported with p-value = 0.756 > 0.05. In Tay Ninh province, Effort expectancy was also found not to have a positive impact on Consumers’ intention to use E-payment – H2 is not supported with p-value = 0.080 > 0.05. Besides, all the remaining hypotheses are supported as proposed by the model.

V. CONCLUSION AND IMPLICATIONS

The study is based on theories of TAM, UTAUT and previous studies to examine factors that affect consumer intention of E-payment. In particular, the study examines differences in consumer intention in large cities and small provinces. The result shows that Ho Chi Minh city and Tay Ninh province both have the 4 factors affecting consumer intention to use E-payment: Social influence, Performance expectancy, Facilitating conditions, User innovativeness. However, there are differences between consumer intention to use E-payment in Ho Chi Minh city and Tay Ninh province. In Ho Chi Minh city, Effort expectancy has a positive impact on the intention to use E-payment while Perceived risk does not. In Tay Ninh province, this trend is reversed: Perceived risk has a positive impact on the intention to use E-payment while Effort expectancy does not. This result is necessary for E-payment service providers to expand their user network.

Factor “Social influence”

From this factor, the fact that friends or relatives currently use E-payment is an important factor to encourage another new user to use E-payment. Influence from acquaintances is an iconic cultural feature of Vietnam. E-payment service providers can attract relatives of existing consumers through offers and promotions for themselves and their relatives.

Factor “Performance expectancy”

E-payment services should have programs to demonstrate the effectiveness of E-payment methods, allowing every consumer to understand and experience using E-payment methods, thus letting them realize in the most transparent and specific way how simpler, faster and more convenient E-payment is than using cash.

Factor “Facilitating conditions”

Companies that provide E-payment service should standardize the process of E-payment in detail so that the consumers can easily follow. In addition, companies should augment activities and provide consulting services to guide users to effortlessly perform E-payment. The higher these support conditions, the easier and more likely for the user to perform E-payment.

Factor “User innovativeness”

Companies that provide E-payment service should frequently research, update new features, interfaces. They should actively promote to ensure that users access information about new and improved aspects thus convincing them into using this new payment method. They should cooperate with partner companies and banks to upgrade new infrastructure of the E-payment system, thus always providing new, advanced services, products that satisfy the growing demand of the consumers.

Factor “Perceived risk”

For Tay Ninh consumers, this factor impacts on intention to use E-payment. According to survey data, consumers are concerned about personal information leakage, the toll of the transaction, data theft from hackers, or unsafe payment. Companies that provide E-payment services need to upgrade infrastructure and improve security. Financial institutions, banks, fintechs, and telecommunications businesses need to cooperate to establish an interconnected payment network that is convenient and safe for consumers. In addition, they should regularly update, forewarn consumers about fraudulent forms of E-payment.

Factor “Effort expectancy” measures the level of ease of use associated with the use of an information technology.

For Ho Chi Minh city consumers, this factor impacts on intention to use E-payment. Therefore, companies that provide E-payment service need to improve the service's ease of use, simple and convenient app, suitable for consumers from different ages and levels of tech-savviness. The interface of the app needs to be intuitively simple to minimize payment time.

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