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FACTORS AFFECTING INTENTIONS TO USE CREDIT CARDS IN VIETNAM: AN EMPIRICAL RESEARCH BASED ON UTAUT

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A R T I C L E I N F O	A B S T R A C T
	The paper examines factors that influence intentions to use credit cards in Vietnam. Based on the Unified Theory of Acceptance and Use of Technology (UTAUT), the study develops a theoretical paradigm including four explanatory variables of intentions to use credit card services which are performance expectancy (PE), social influence (SI), effort expectancy (EE), and facilitating conditions (FC). The empirical results obtained a sample of 630 valid participants reveal the significant and concurrent impact of the four determinants. Specifically, performance expectancy and social influence exert the most significant impact on intentions of credit card use. We have confidence that the findings will provide banks with guidance in improving their services as well as developing their media and marketing strategies in order to highlight efficiency, ease of use, and convenience and popularity, thereby promoting the intention of credit card adoption. **Disciplinary**: Management Sciences (Business Management and Banking).

1. INTRODUCTION

The year 2020 is a landmark in the history of 70 years since the first credit card was first issued. After seven decades, credit cards have been popularized worldwide and recognized as a payment method without cash. Together with this positive influence, credit cards also help boost the economy. According to Moody's Analytics (2016), more use of credit card gives a 0.1% cumulative rise in global GDP which equals a \$74 billion contribution to yearly GDP. This popularity rocketed in the U.S, one of the biggest markets. TransUnion (2016) reported that the use of credit and debit card reached a peak in the U.S, where nearly 79% of consumers use credit cards. However, the mentioned data could only reveal half of the story so it is necessary to investigate other emerging markets in the East and Southeast Asia.

According to World Bank figures in 2017, in Southeast Asian countries like Indonesia, the Philippines, Thailand and Vietnam, credit card ownership still languishes at single-digit percentages.

The only ones bucking the ASEAN trend are Singapore (48%) and Malaysia (21%). In the bigger Asian markets of India and China, the story is similar – credit card penetration in India is at 2% while China fares slightly better at 25%. That is still lower than in developed economies like Japan, the UK, and the USA.

With low levels of market penetration in the Asia-Pacific region, credit cards have available room for growth. But with the rise of mobile payments, that space is considerably shrinking. In the initial period of e-commerce, credit cards and online purchase seemed destined for each other, which were assessed to be the most convenient cashless payment. Nevertheless, with the growth of mobile technologies and apps, alternate payment solutions are launched rapidly. Thanks to faster checkouts and flexible services, they promise a more comfortable shopping experience than traditional credit card use.

In fact, digital payments have gradually been playing a key role in the global economy. Particularly, in 2017, they reached around US$ 3.1 trillion, or 13% of all commercial transactions and predicted to climb to US$4.1 trillion in 2019. At this rate, alternate payment solutions could overtake credit payment on e-commerce platforms by the end of 2019. In this context, credit cards are surrendering their users and turnover to new payments. There is no doubt that credit card service needs to be changed for development. With many advancements in information technology, consumers are always in demand for speed, convenience, most notable, mobiles are recognized as the future of payments.

Credit card service is nascent in Vietnam as compared to the long history of global credit payment. Being official released in 2002, Vietnam's credit card service was experiencing many difficulties and unknown to a majority of consumers. Meanwhile, a limited number of theoretical and practical studies have aimed to determine the level of credit card acceptance of consumers. Hence, it is vital to identify determinants of intentions to utilize credit cards in order to help banks retain and attract customers. This paper aims to investigate these determinants among Vietnamese users, thereby assisting the management in giving wise decisions and business strategies to attract customers.

2. LITERATURE REVIEW

The Unified Theory of Acceptance and Use of Technology (UTAUT), based on eight theories and models of Technology Acceptance, was first introduced by Venkatesh et al. (2003). Following earlier theories of the Technology Acceptance Model, the UTAUT assumes that behavioral intention is a factor that exerts the most significant influence on the real user behavior of customers. Indeed, according to Venkatesh et al. (2003), behavioral intention can be explained for 70% cases of real user behavior, being superior to the earlier studies (with their explanation at 30 to 45 percent). More than that, the UTAUT has been adopted by a big number of empirical researchers. Specifically, Martín and Herrero (2012) employed it to examine the impact of the user's psychological factors on the online purchase intention in rural tourism by the observation of 1083 tourists that had previously visited several websites of rural accommodations. In the same vein, Abubakar and Ahmad (2013) investigated the correlation between the UTAUT and behavioral intention to the adoption at Point of Sale (POS) terminals. This theory was also utilized by Jambulingam (2013) to identify determinants of behavioral intention to adopt mobile technology in the learning environment by observing 351

students from private Malaysian universities. Jansorn et al. (2013) also adopted this theory to determine the factors which influence the acceptance of e-payment service in Thailand with the participation of 100 correspondents. Another analysis of Junadi and Sfenrianto (2015) also suggested the UTAUT model examine intention to use electronic payments among Indonesian consumers. Maillet et al. (2015) gave an explanation for the acceptance, adoption and satisfaction of 616 nurses using electronic patient records in Canada by testing a theoretical model adapted from the UTAUT. Similarly, Abrahão et al. (2016) adapted it to explain the intention to use mobile payments by the participation of 605 Brazilian users. A model of the UTAUT was also adapted by Chauhan and Jaiswal (2016) for testing determinants of acceptance of ERP software training in business schools by researching 324 students in India. The UTAUT was also used by Kissi et al. (2017) to determine factors that exert impact on intention to use debit cards of 400 students in the faculty of Business Administration at Nigeria University. With a framework of the UTAUT, Sarfaraz (2017) tested drivers of intention to adopt mobile banking by conducting surveys among 340 observations in Jordan. A study by Isaac et al. (2018) also adapted the UTAUT to examine factors that influence decisions to use the internet of 520 users in organizations in Yemen. Chao (2019) adopted a model of the UTAUT to predict factors influencing intention to use mobile learning by delivering online surveys to 1562 students in Taiwan. In summary, the UTAUT is superior to any of the prior theories. Hence, it is selected in this paper to examine drivers of intention to use a credit card of Vietnamese. The four factors affecting the intention of credit card adoption are mentioned including:

2.1 PERFORMANCE EXPECTANCY

In this study, based on the framework of the UTAUT developed by Venkatesh et al (2003), performance expectancy is defined as the degree to which users believe credit card services can help to improve their work performance. By the analyses of determinants of technology use intention, Martín & Herrero (2012), Jambulingam (2013) and Isaac et al. (2018) stressed the positive correlation between performance expectancy and intention. This relationship was also proved by Jansorn et al. (2013), Abrahão et al. (2016), Kissi et al. (2017) and Sarfaraz (2017) who researched factors of intention to use banking services. Further, these results also show that performance expectancy is the most significant antecedent of behaviors in technology and banking service adoption. From this premise, the hypothesis is proposed:

H1: Performance expectancy has a positive impact on the intention to use credit card services.

2.2 EFFORT EXPECTANCY

In this study, we define effort expectancy as the extent to which users perceive credit card services as easy to use. Up to now, there have been many studies investigating the influence of effort expectancy on behavioral intention. Martín & Herrero (2012), Abrahão et al. (2016), Sarfaraz (2017) and Isaac et al. (2018) recognized that effort expectancy is positively correlated to behavioral intention. however, some scholars argued that effort expectancy is not a prediction of intention (Jambulingam, 2013; Jansorn et al., 2013; Kissi et al., 2017). Especially to credit card services, problems occurring in use will cause customers considerable financial loss. Thus, if they can perceive the ease to use that is without problems, their intention will increase. Hence, we hypothesized that:

H2: Effort expectancy has a positive impact on the intention to use credit card services.

2.3 SOCIAL INFLUENCE

For the purpose of this study, social influence is defined as the degree to which users perceive

that important others believe they should use a credit card. Social influence is assessed to be a major driver of behavioral intention which is stated by subjective norms in other models like TRA. A number of recent studies have determined the impact of social influence on behavioral intention. Some of them concluded that social influence is a positive determinant of behavioral intention (Abrahão et al., 2016; Kissi et al., 2017; Isaac et al., 2018). Meanwhile, others revealed that social influence is insignificantly related to intention (Martín & Herrero, 2012; Jambulingam, 2013; Jansorn et al., 2013; Sarfaraz, 2017). Different from Western countries, social pressure, and influences from others are significant, so it is vital to analyze social influence toward the intention. Thus, we have

H3: Social influence has a positive impact on the intention to use credit card services.

2.4 FACILITATING CONDITIONS

In this study, facilitating conditions is defined as the extent to which users believe that administrative and technical structures exist to support the adoption of credit card services. Utilizing credit cards requires certain skills such as Internet connectivity, mobile phone usage, and knowledge of credit card online services, so those with these skills have a greater possibility to use credit cards. From this idea, the following assumption is developed:

H4: Facilitating conditions have a positive impact on the intention to use credit card services.

3. METHODOLOGY

3.1 RESEARCH MODEL

Following the UTAUT and prior studies, the theoretical paradigm is suggested

$$IU = \beta_0 + \beta_1 * PE + \beta_2 * EE + \beta_3 * FC + \beta_4 * SI + \varepsilon \qquad (1),$$

where

Dependent variable: Intention to use credit card services (IU).

Independent variables: performance expectancy (PE), effort expectancy (EE), facilitating conditions (FC), social influence (SI).

The term ε is the regression model error term.
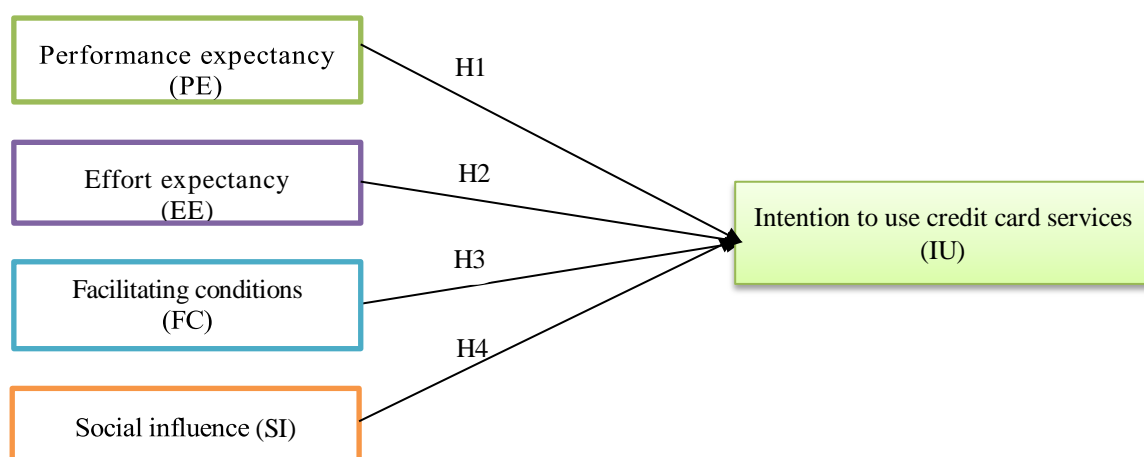

Figure 1: The proposed model of factors affecting credit card as a method of payment.

The survey is developed on the basis of previous theoretical and empirical models, combining with constructing some new questions in order to bring the paper the novelty and appropriateness to the actual credit card services in the Ho Chi Minh city context. Table 1 gives the survey design.

Table 1: Measuring scales and references for the proposed constructs.

Variables	Code	Definitions	References
Performance expectancy (PE)	PE1	Using credit card services enables users to manage their financial information well.	Newly constructed
	PE2	Users can save more time by using credit card services.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
	PE3	It is unnecessary for users to pay a frequent visit to traditional banks.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Sarfaraz (2017); Isaac et al. (2018).
	PE4	Using credit card services increases users' productivity and work performance.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
	PE5	Users can access to more integrated services when using credit cards.	Martín and Herrero (2012); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
Effort expectancy (EE)	EE1	Users can interact with credit card service systems everywhere.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
	EE2	Instructions are clear and understandable.	Martín and Herrero (2012); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Sarfaraz (2017).
	EE3	Processes in credit card services are simple to users.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
	EE4	There are always 24/7 hotlines for customer assistance.	Newly constructed
Facilitating conditions (FC)	FC1	Users have the necessary resources for the use of credit card services.	Martín and Herrero (2012); Chauhan and Jaiswal (2016); Kissi et al. (2017); Isaac et al. (2018).
	FC2	Users have the necessary knowledge for the use of credit card services.	Martín and Herrero (2012); Chauhan and Jaiswal (2016); Kissi et al. (2017).
	FC3	Languages used in a transaction are clear and understandable.	Newly constructed
Social influence (SI)	SI1	Users' acquaintances (relative, friends…) frequently use credit card services.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
	SI2	Users' working/ studying environments are supportive of credit card services	Abrahão et al. (2016); Kissi et al. (2017); Sarfaraz (2017).
	SI3	Credit card services are following social trends.	Abrahão et al. (2016).
	SI4	Credit card services are advertised everywhere.	Newly constructed
Intention to use credit card services (IU)	IU1	Users intend to use/ keep using credit cards in the future.	Martín and Herrero (2012); Junadi and Sfenrianto (2015); Abrahão et al. (2016); Chauhan and Jaiswal (2016); Kissi et al. (2017); Sarfaraz (2017); Isaac et al. (2018).
	IU2	Users will use credit cards more frequently.	Kissi et al. (2017); Isaac et al. (2018).
	IU3	Users intend to recommend credit card services to their friends and relatives.	Junadi and Sfenrianto (2015).

3.2 DATA COLLECTION

A survey is conducted to collect data in 63 provinces in Vietnam during May-August, 2019. Data are gathered by using questionnaires that are directly delivered and via online tools under forms of Google docs. Before a survey, a test is conducted to ensure the validity and comprehensibility of the questionnaires. A total of 1000 paper and online questionnaires are administered, in which 752 forms

are collected with 630 valid questionnaires are obtained for the analysis.

3.3 RESEARCH METHODOLOGY

This research employs exploratory factor analysis (EFA) and multiple regression to evaluate the factors affecting the intention to use credit cards in 63 provinces in Vietnam. EFA allows to extract observed variables to one or a smaller number of latent variables ('factors'). Meanwhile, this analysis determine convergent validity according to how participant responses and its discriminant validity. After the analysis, only the set of factors satisfied can be included in the next steps.

4. RESULT

4.1 DESCRIPTIVE STATISTICS

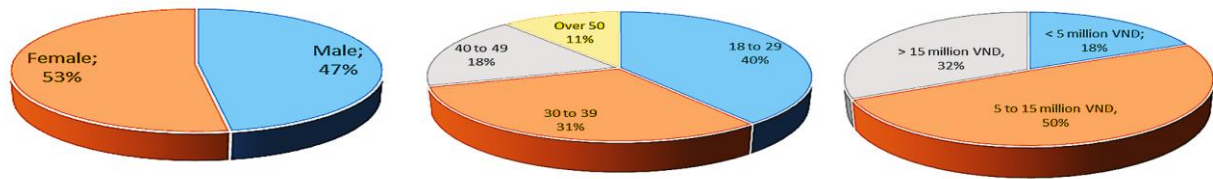Figure 2 shows the detail of questionnaire participants, including gender, age, and income.

Figure 2: Descriptive statistics of participants.

4.2 CRONBACH'S ALPHA TEST

Cronbach's Alpha is an estimate of the reliability of the construct. This test is to examine the robustness and correlation among observed variables. Moreover, this helps analyzers eliminate inappropriate variables and constrain garbage value in the model. Accordingly, only variable with the corrected item-total correlation being greater than 0.3 and alpha being greater than 0.6 is considered to be acceptable and fit for the analyses.

Table 2: Cronbach's Alpha

Observed variables	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Performance expectancy (PE) Cronbach's Alpha = 0.868		
PE1	0.783	0.816
PE2	0.772	0.820
PE3	0.657	0.850
PE4	0.629	0.855
PE5	0.642	0.851
Effort expectancy (EE) Cronbach's Alpha = 0.843		
EE1	0.727	0.780
EE2	0.625	0.823
EE3	0.653	0.818
EE4	0.722	0.783
Facilitating conditions (FC) Cronbach's Alpha = 0.882		
FC1	0.747	0.855
FC2	0.772	0.834
FC3	0.812	0.810
Social influence (SI): Cronbach's Alpha = 0.876		
SI1	0.769	0.827
SI2	0.718	0.849
SI3	0.744	0.837
SI4	0.708	0.852
Intention to use credit card services (IU) Cronbach's Alpha = 0.638		
IU1	0.554	0.393
IU2	0.398	0.617
IU3	0.402	0.599

The results show that all variables possess a total correlation of corrected items of greater than 0.3 and alpha of higher than 0.6, thereby meeting the acceptance level and fitting the next steps.

4.3 EXPLORATORY FACTOR ANALYSIS (EFA)

4.3.1 EXPLORATORY FACTOR ANALYSIS (EFA) RESULTS OF INDEPENDENT VARIABLES

The EFA results indicate that the analysis can extract four factors, including performance expectancy (PE), effort expectancy (EF), facilitating conditions (FC) and social influence (SI), with KMO of 0.745 (greater than 0.5), an eigenvalue of 1.719 (greater than 1), average variance extracted of 72.108% (greater than 50%); the Bartlett test's significance level of 0.000 (lower than 5%). It can be deduced that these factors are independent variables considered reliable and significant for the analysis.

Table 3: EFA results of independent variables

Factor loading	Result	SD
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.745	$0.5 < 0.745 < 1$
Bartlett's Test of Sphericity (Sig.)	0.000	$0.000 < 5\%$
Cumulative %	72.108%	$72.108\% > 50\%$
Eigenvalue	1.719	$1.719 > 1$

Table 4: Rotated Component Matrix (independent variables)

Variables	Component			
	1	2	3	4
PE2	0.876			
PE1	0.865			
PE3	0.768			
PE4	0.745			
PE5	0.715			
SI1		0.873		
SI2		0.856		
SI3		0.841		
SI4		0.804		
EE1			0.875	
EE4			0.856	
EE3			0.762	
EE2			0.757	
FC2				0.892
FC3				0.892
FC1				0.873

4.3.2 EXPLORATORY FACTOR ANALYSIS (EFA) RESULTS OF DEPENDENT VARIABLES

Table 5, the analysis can extract one factor which is the intention to use credit card services (IU) with KMO of 0.604 (greater than 0.5), an eigenvalue of 1.755 (greater than 1), average variance extracted of 58.487% (greater than 50%); the Bartlett test's significance level of 0.000 (lower than 5%). Hence, this factor is the valid dependent variable for the next steps in the model.

Table 5: EFA results of dependent variables (IU).

Factor loading	Results	SD
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.604	$0.5 < 0.604 < 1$
Bartlett's Test of Sphericity (Sig.)	0.000	$0.000 < 5\%$
Cumulative %	58.487%	$58.487\% > 50\%$
Eigenvalue	1.755	$1.755 > 1$

Table 6: Rotated Component Matrix (dependent variable)

| Variables	Component
	1
IU1	0.840
IU3	0.731
IU2	0.717

4.4 ESTIMATED RESULTS OF THE MODEL

The estimated results of the model determine the extent to which independent variables influence dependent ones. Therefore, levels of dependent variables can be predicted with the given value of independent ones. The estimated results of the model are presented as follows:

Table 7: Estimated results of the model

Variables	Beta	Sig.
Performance expectancy (PE)	0.418	0.000[***]
Social influence (SI)	0.304	0.000[***]
Effort expectancy (EE)	0.247	0.000[***]
Facilitating conditions (FC)	0.166	0.000[***]
N	630	
ANOVA (sig.)	0.000[***]	
R Square	71.8%	

Note: *** indicates significance at the 1% level.
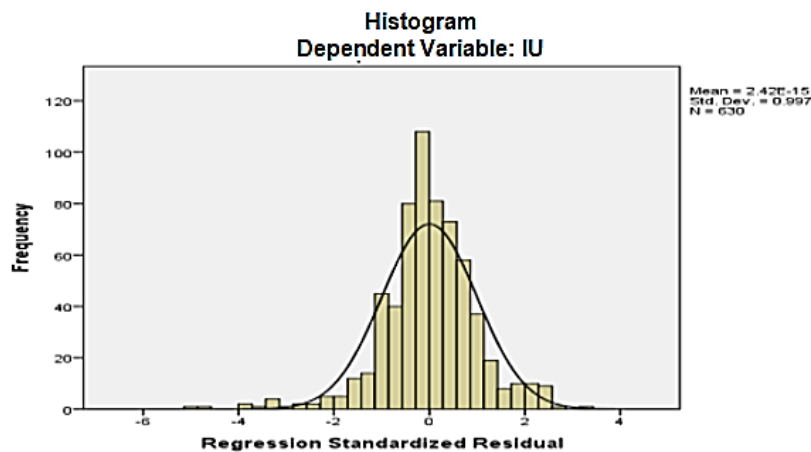
Figure 3: Histogram.

The ANOVA test reveals that the estimated results are significant at the 1% level (sig. = 0.000), being reliable and valid for the study. Further, R-squared is adapted to evaluate the appropriateness of the model. It indicates how much variation of a dependent variable is explained by the independent variables in a regression model. That R-squared values are close to 1 means how the model fits the dataset and vice versa with the values being close to 0. R-squared is 71.8% which means that 71.8% variation of intention to use credit cards can be explained by the selected independent variables.

The behavioral intention in Vietnam is also concurrently influenced by independent variables. The estimated results of the model are thus written in the following equation:

$$IU = 0.418 * PE + 0.247 * EE + 0.166 * FC + 0.304 * SI \qquad (2)$$

4.5 DISCUSSION

The results report that intention of the credit card usage is influenced by four drivers, namely performance expectancy, effort expectancy, facilitating conditions and social influence. All of them are positively correlated to the behavioral intention.
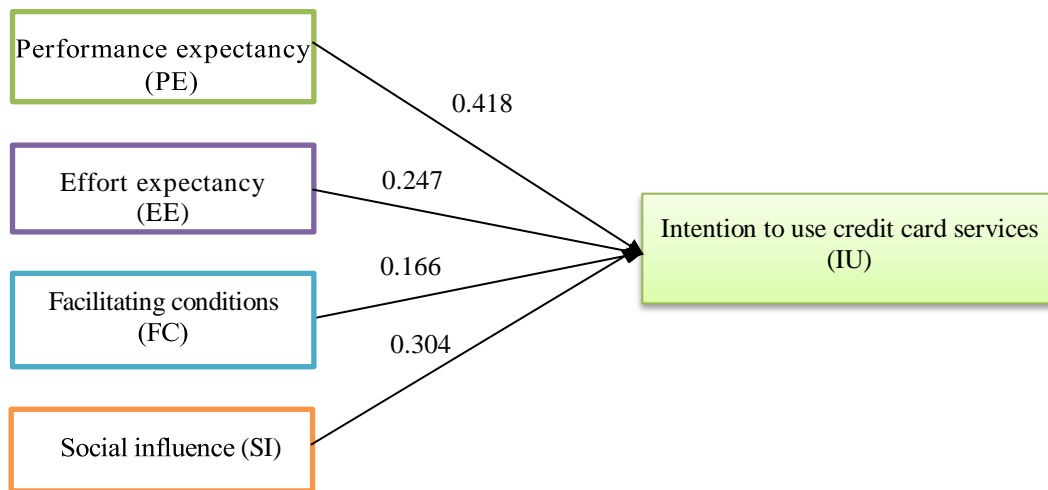
Figure 4: Results of testing the model

Performance expectancy is the most significant ($\beta = 0.418$) determinant which reflects how users' work performance is believed to obtain by the use of credit cards. The performance can be seen by how users feel the convenience, efficiency of the service which makes the transaction simpler and faster. Therefore, the more effective users perceive, the higher their intentions are.

The second substantial ($\beta = 0.304$) factor affecting the intention to use credit cards is the social influence which indicates how an individual is influenced by their acquaintances such as friends, family, colleagues… These recommendations are an effective marketing channel that helps increase the number of customers using credit cards. An individual increasingly tends to use credit cards when being recommended by their important people.

Effort expectancy defined as the ease to use the system also has a significant ($\beta = 0.247$) impact on the intention of credit card adoption. Obviously, a complicated credit card service will cause hesitation in using. This complexity can be the root of errors in usage and financial damages. If users believe that the system is easy to use without lots of effort, they certainly tend to use the service more.

The last driver of the behavioral intention is facilitating conditions that are defined as how users believe that the technical infrastructure can assist their usage. Hence, a good technical infrastructure to facilitate the credit card uses exert considerable impact on the users' intention.

5. CONCLUSION

The paper examines the factors which are related to the intention to use credit card services among Vietnamese. The findings show that behavioral intention is significantly influenced by performance expectancy, social influence, effort expectancy and facilitating conditions. These results provide bank policymakers with essential information to promote their credit card services. Understanding the determinants of the intention to use credit cards in Vietnam helps the management concentrate on each factor in order to raise users' intentions and expand more services. Based on the empirical results, some implications are suggested as follows:

- Improve performance expectancy: It can be deduced that performance expectancy is the major driver of the intention to adopt credit cards, so it is important to be improved. It is necessary for banks to convince their users of the superiority of credit card services, most notably to their potential users.

To attract more customers, it is recommended to free the issuance and first-year annual fees. Consequently, more customers can experience the advantages of credit card usage.

- Value social influence: Consumers tend to have a belief in their acquaintances such as family, friends, colleagues who have experienced and recommend the services. In spite of their subjectivity, these opinions significantly affect those who have hesitation in credit card services. Thus, it is vital for banks to enhance their belief through positive recommendations from the important people who have experienced the convenience in shopping, safety in payment and good customer services.

- Enhance effort expectancy: The quality of the services should be concentrated. Specifically, user-friendly designs on compatible equipment as well as fast and precise processing speed are recommended to avoid technical problems, risks and losses during the transaction. This can catch a positive impression on the compatibility of the services. In addition, detailed instructions should be updated as well as popularized to facilitate users' transactions.

- Improve facilitating conditions: The more attractive the equipment, the more customers it can attract. Therefore, technical modernization is crucial in developing banking services in general and credit card counterparts in particular. The bank leading in new technical applications has more competitive advantages in introducing their services.

The paper successfully achieves its objective of investigating factors influencing the intention to use credit cards among Vietnamese by adopting the Unified Theory of Acceptance and Use of Technology (UTAUT). Hopefully, these implications contribute to the sustainable development of the services in Vietnam. However, as its limitations, limited observations are adopted in the study which is conducted from a single Vietnam. These may be interesting proposals for future research.

6. DATA AND MATERIALS AVAILABILITY

Information relevant to this study is available by contacting the corresponding author.

7. REFERENCES

Abubakar, F. M., & Ahmad, H. B. (2013). The Moderating Effect of Technology Awareness on the Relationship between UTAUT Constructs and Behavioural Intention to Use Technology: A Conceptual Paper. *Australian Journal of Business and Management Research, 3*(2), 14–23.

Chao, C. M. (2019). Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model. *Frontiers in Psychology, 10*, 1–14.

Chauhan, S., and Jaiswal, M. (2016). Determinants of acceptance of ERP software training in business schools: empirical investigation using UTAUT model. *The International Journal of Management Education, 14*(3), 248–262.

Isaac, O., Abdullah, Z., Aldholay, A. H., & Ameen, A. A. (2019). Antecedents and outcomes of internet usage within organizations in Yemen: An extension of the Unified Theory of Acceptance and Use of Technology (UTAUT) model. *Asia Pacific Management Review, In press, corrected proof, Available online 23 May 2019.* https://www.sciencedirect.com/science/article/pii/S1029313217305614

Jambulingam, M. (2013). Behavioural Intention to Adopt Mobile Technology among Tertiary Students. World Applied Sciences Journal, 22(9), 1262–1271.

Jansorn, T., Kiattisin, S., & Leelasantitham, A. (2013). Study of acceptance factors for electronic payment services. *ISS & MLB / September, 24*(26), 452–461.

Junadi, & Sfenrianto,. (2015). A Model of Factors Influencing Consumer's Intention To Use E-Payment System in Indonesia. *Procedia Computer Science, 59*, 214–220.

Kissi, P. S., Oluwatobiloba, M. K., & Berko, A. Y. (2017). Factors affecting university students Intentions to use debit card services:An empirical study based on UTAUT. *Business, Management and Education, 15*(2), 196–210.

Maillet, É., Mathieu, L., and Sicotte, C. (2015). Modeling factors explaining the acceptance, actual use and satisfaction of nurses using an electronic patient record in acute care settings: an extension of the UTAUT. *International journal of medical informatics, 84*, 36–47.

Martín, H. S., & Herrero, A. (2012), Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism Management, 33*(2), 341–350.

Moody's Analytics. (2016). The Impact of Electronic Payments on Economic Growth. *Available from internet:* https://usa.visa.com/dam/VCOM/download/visa-everywhere/global-impact/impact-of-electronic-payments-on-economic-growth.pdf

Sarfaraz, J. (2017). Unified theory of acceptance and use of technology (UTAUT) model-mobile banking. *Journal of Internet Banking and Commerce, 22*(3), 1–20.

TransUnion. (2016). TransUnion Industry Insights Report Q2 2016 press release. *Available from internet:* https://newsroom.transunion.com/credit-card-popularity-soars-as-133-million-consumers-now-possess-at-least-one-card-with-a-balance

The World Bank. (2017). The Global Findex Database 2017. *Available from internet:* https://globalfindex.worldbank.org/sites/globalfindex/files/2018-04/2017%20Findex%20full%20report_0.pdf

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems, 27*(3), 425–478.

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