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RESEARCH ARTICLE

APPLYING TAM THEORY TO EXAMINE THE CONSUMER'S INTENTIONS OF E-TOURISM SERVICES

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ABSTRACT

This paper aims to study customers' intentional behavior using the E-tourism service by applying the TAM model. There were 176 valid questionnaires put into the analysis system of SPSS. The result indicates that two factors are not significantly affected by intentional behavior toward E-tourism services, including perceived ease and cost. The four remaining factors have impacted intention behavior toward E-tourism services: perceived usefulness, risk awareness, Subjective norm, and Perceived behavioral control. The t-test and ANOVA test results cannot find the difference in intention behavior in using E-tourism services among customer demographics. The result also indicates that the intended behavior of the customers in using E-tourism services is low, with a mean value just above three scores. The conclusion, recommendations, limitations, and future research suggestions are also discussed in this study.

INTRODUCTION

Information technology development has created a favourable environment for the development of online travel services, especially in the context of the current Covid-19 epidemic. A new trend is the transformation of Travel to Smart Travel; technology convergences such as IoT (Internet of things), cloud computing, mobile communication, blockchain, big data, and artificial intelligence (AI) are combined to enhance the tourist experience. It also collects and aggregates information on tourists' behaviours, shopping patterns, visits to each attraction, duration of use, and monetary benefits generated at tourist destinations; from there, it will provide the basis for the destination management board as well as the travel companies to have the right plans and decisions to manage the destination and develop tourism. E-tourism is defined as the application of information and communication technologies (ICT) to the tourism industry, which is the digitization of all processes and value chains in the tourism industry in order to maximize the efficiency of travel service businesses (Long & Shi, 2017). The benefits of e-Tourism Services have yet to be fully exploited. In addition, e-tourism services' utility has yet to satisfy customers' needs thoroughly. Although some studies about electric tourism services, such as Amaro & Duarte (2015), Cao & Yang (2016), and Liao & Shi (2017). Besides, on the academic side, more research still needs to be done on this electronic service and consumer behaviours intention in using the E tourism service. From the lack of knowledge and practice study in this area, this study aims to analyses consumer behaviours intention in using the electric tourism service in the tourism industry.

Literature review

Technology acceptance model (TAM) and Consumer's Intentions of E-Tourism Services: Predicting human behavior is the fundamental objective of the theories in social psychology study.

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Many theories, including the rational action theory, have been formed to serve this goal. A rational theory of action (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) along with its expansion theory as the theoretical behavior plans are theoretically used in many previous studies and appreciated the usefulness in predicting the different behavior of humans (Madden et al., 1992). These theories are applicable in many research areas, such as understanding the behavior ethical or unethical (e.g., behavioral studies of gambling, gaming), the study of human behavior people at work (for example, job satisfaction), the behavior of customers in marketing (for example, the reaction of customers with coupons, online shopping behavior) and learn behaviors related to information technology (e.g., acceptable e-commerce behavior). Davis's technology acceptance model (TAM) was first proposed in 1986 from the model theory origin TRA (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) and theoretical TPB (Ajzen, 1991). TAM was launched to explain the behavior-acceptable use of information technology systems. Intentions are desires, wishes, willingness, or self-instructions to behave in a certain way and the motivational factors that influence one's behavior (Ajzen, 1991). Intentions indicate how hard a person is willing to try and how much effort a person is planning to use to perform a behavior. The stronger intention to engage in a behavior, the more likely a behavior will be performed. Behavioral intention is an indication of the readiness of an individual to perform a given behavior. It is assumed to be an immediately preceding of a behavior (Omotayo & Adeyemi, 2018). Tourism products are among the most popular online products and services, such as computer hardware and software, airline tickets, and books. For other standard products, when learning to order products online, the information customers need to know is mainly price, quality, and form of payment (Long et al., 2017). As for travel services, in addition to basic information related to products for sale, customers are updated with travel knowledge, new destinations, and information about attractive destinations (Liao et al., 2017). Online travel services include hotel reservations, car rentals, airline tickets, train tickets, and travel programs. Information technology development has created a favorable environment for the development of online travel services (Wong, 2020).

Tourism services are getting more prosperous and livelier. Businesses are open to display space to offer many products and services on their booth. With the help of information technology, travel products also come alive with images and videos of tourist destinations. Besides, businesses also easily adjust their services according to the needs and tastes of users. Therefore, visitors have more options to suit their needs. However, tourism businesses also need some help in improve their E-service. That is, more and more online travel businesses are born, which has helped customers have more choices from competitors when they can compare the prices and services of many businesses simultaneously (Vijoli & Marinescu, 2016). Therefore, in addition to providing rich and diverse services suitable for tourists' tastes, tourism businesses also need to offer reasonable prices and good service quality to compete with competitors in the market. In addition, it is required that travel companies selling products via the Internet need to build a complete system from displaying services to forms of payment and after-sales service for customers.

The factor impact on Customers behavior intention in of E-Tourism Services

Perceived usefulness: Perceived as applicable or convenient is the extent people believe that using the online system will have usefulness in a specific product and will enhance the implementation of their work (Shima & Mohamadali, 2017). Some studies have shown that one of the factors affecting the decision to use the convenience Acquirer (Lichtenstein and Williamson, 2006, Masulis et al., 2007).

H1: There is a positive relationship between Perceived usefulness and customer intention behavior to E-tourism service

Perceived Ease to use: The ease to use factor, also known as the friendly website for users, is one of the main factors to be considered in the technology acceptance model (TAM). Ease to use is the degree to which a person believes the system can be used without special effort (Davis, 1989). The study by Long& Shi (2017) showed that efficiently performing online transactions is one of the main variables affecting the decision to use the service, Acquirer et al. (2015) have investigated, and the results show that a website's user-friendly is the most critical factor in deciding to use online banking services. In addition, research by Du (2011) has concluded that a well-designed website and user-friendliness will easily attract potential customers. Therefore, the following hypotheses are proposed:

H2: There is a positive relationship between Perceived Ease to use and customer intention behavior toward E-tourism service

Risk awareness: Risk awareness is the role of cognition of risk, has been studied extensively in business to learn the intent to use the service users as well as the decision to accept the use of the customer service (Im et al., 2008). Risks related to the uncertainty of the service can not predict and control the process of using the service. In addition, several other experimental studies showed that *risk perception* is defined as having a positive impact directly and significantly on customer intention behavior to E-tourism service.

H3: There is a positive relationship between risk awareness and customer intention behavior toward E-tourism service.

Cost: Liao and Cheung (2002) conducted a study on consumer attitudes toward online services and pointed out that prices influence customers' attitudes toward online services. Cost is understood that the cost of customer must pay when using an E-tourism service, the cost of money, and the cost of time. When the last transaction acquirer, if service charges low or no fees collected, that might push consumers to use E-tourism service. Besides, according to Vijoli & Marinescu (2016) factor, the price of fish is considered an essential criterion for accepting online services. Therefore, the following hypotheses are proposed:

H4: There is a positive relationship between low cost and customer intention behavior to E-tourism service.

Subjective norms and perceived behavioral control: Empirically, there is much evidence that subjective norms and perceived behavioral control impact consumer intention to use electricity (Urban & Scasny, 2012; Shima & Mohamadali, 2017). Therefore, the following hypotheses are proposed:

H5: There is a positive relationship between subjective norms and customer intention behavior to E-tourism service.

H6: There is a positive relationship between perceived behavioral control and customer intention behavior to E-tourism service.

H7: Customer demographics have different intentions and behavior in using E-tourism.

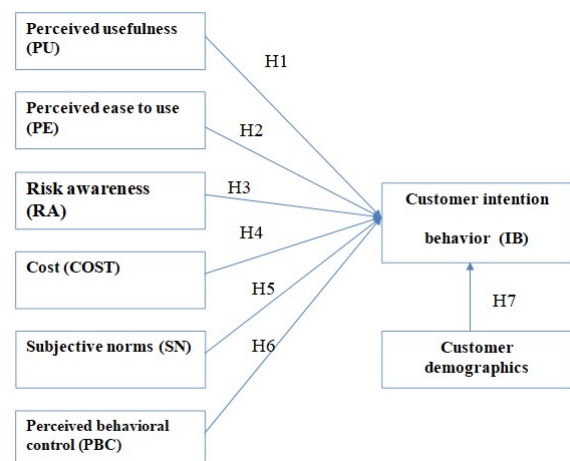


Figure 1. Research framework

METHODOLOGY

The questionnaires are based on studying the TAM model in the banking field in several countries around the world such studies. Especially studies in Thailand, Korea, and Malaysia because there are conditions like Vietnam on geographical and cultural. Also, after reviewing several studies in Vietnam, researchers have come up with the factors influencing the intention to use the services used based on the scale of David et al. (1989). Research Using the statistical software SPSS version 26.0 to synthesize and analyze the data collected from the survey results. EFA is an exploratory factor analysis method to reduce a set of many scales into different groups of variables. The internal consistency method assesses the scale's reliability through Cronbach's Alpha coefficient. The multivariable regression method tests the theoretical model with research hypotheses at a 5% significance level. %.

Data analysis

Respondent profile: There were 300 questionnaires sent to domestic customers at Noi Bai Airport who had returned from Da Nang and Ho Chi Minh cities on May, 2022. The data was collected from travel companies, and 225 questionnaires were returned, of which 176 were valid (78.2 rates of the sample size). The result shows that 37.7% of the customer in this study is male, and female is 62.5%. Relating to the age of customers, the result shows that customers, the customer with age from 20-35-year-old is 18%, 36-45-year-old is 34.7%, 46 – 55-year-old is 30.7%, and customers who are over 55-year-old reach 16.5% in this study. Related to the education level of customer, this study shows that customer who is at the High School level is 4.0%, those Under Bachelor is 13.1%, customer who has a Bachelor's degree is 56.3%, and customer who has the Master's degree or higher reach 26.7%. Count for the high education level of customers in this study. This study also conducted a survey related to customer income per month, from the result show that customer who has an income per month under VND 10 million is 10.8%, 10-15 mil. is 29.5, and from

VND 15-20 mil. is 33.0. Customers have an income per month is VND over 25 mil. reaches 26.7 % in this study, indicating the high income of customers.

Reliability Analysis: In the analysis result shows that 3 item is not meet the require of reliability with the Cronbach's Alpha is ≥ 0.60 and have to remove from the analysis system include (RA4: ET let me safer than other tourism service, PBC4: using ET help me to avoid being seen as obsolete and IB3: I will use the ET to access information on destination in a quick and convenience.)

Table 1. Cronbach's Alpha result

Variable	Number	Cronbach's Alpha
Perceived usefulness	4	.880
Perceived Ease to use	4	.781
Risk awareness	3	.828
Cost	4	.719
Subjective norms	3	.817
Perceived behavioral control	3	.788
Customer intention behavior to ET	3	.821

Factor analysis: Factor analysis was performed with 20 variables observed variables independent of achieved results as follows: KMO = 0.773 coefficient (between 0.5 and 1) should assert factor analysis in this study is consistent. With significance level Sig. = 0.000 < 0.005, correlated variables in the overall. Table 2 shows that ≥ 05 Eigen value, like the following factors when Cronbach's Alpha test is included in the analysis EFA. A total 68.471% variance extracted by > 50% said 06 factors extracted explain 68.471% variation of the data set. The rotated Component Matrix removed the variable with a loading factor coefficient of less than 0.5. The remaining factors are factors loaded > 0.5 : Ensure the practical implications of EFA. Table 2 shows 06 factors extracted from the observed variables of the scale components. Factor 1 is the sum of 4 observed variables: PU1, PU2, PU3, and PU4 of Perceived usefulness (PU). Factor 2 is the sum of 4 observed variables: PE1, PE2, PE3, and PE4 of Perceived Ease to use. Factor 3 is the sum of 3 observed variables: RA1, RA2 RA3 of the Risk awareness. Factor 4 is the sum of 4 observed variables: COST1, COST2, COST3, and COST4 of the Cost variable. Factor 5 is the sum of 3 observed variables: SN1, SN2, and SN3 of Subjective norms. Factor 6 is the sum of 3 observed variables, including PBC1, PBC2, and PBC3. Thus, after analyzing the factors explored EFA, with all 06 factors extracted based on 21 variables, observed similarities with the elements after testing was included in the analysis EFA. 6 factors will be included in the regression.

Table 2 Factor matrix of the Independent variables

	Component					
	1	2	3	4	5	6
PU1	.827					
PU2	.777					
PU3	.829					
PU4	.862					
PE1		.694				
PE2		.810				
PE3		.806				
PE4		.696				
RA1			.815			
RA2			.889			
RA3			.814			
COST1				.701		
COST2				.660		
COST3				.753		
COST4				.737		
SN1					.748	
SN2					.840	
SN3					.806	
PBC1						.821
PBC2						.839
PBC3						.796

Variables correlation: Pearson correlation analysis to determine the linear relationship between the dependent variable and the independent variables before conducting regression analysis. Correlation analysis was performed between the dependent variable, customer intention behavior toward ET, and the independent variables are Perceived usefulness, Perceived Ease to use, Risk awareness, Cost, Subjective norms, and Perceived behavioral control. Correlation analysis results are presented in Table 3.

Regression: For testing hypotheses H1-H6, this study uses multiple regression analysis. Regression analysis will determine the linear regression equation, with the beta found to confirm a causal relationship among the dependent variable: intention behavior to ET, and the independent variables: Perceived usefulness (PU), Perceived Ease (PE), risk awareness (RA), cost (COST), subjective norms (SN) and perceived behavioral control (PBC). Analyzed using multiple linear regression of SPSS 22.0 software with the method put into a turn (Enter). Assumptions and factors influencing the cost of the service unit in apartment buildings with linear correlation, regression equation for theoretical models as follows:

$$IB = \beta_1 PU + \beta_2 PE + \beta_3 RA + \beta_4 COST + \beta_5 SN + \beta_6 PBC$$

The analytical results show that models the correlation coefficient $R^2 = .617$ and R^2 adjusted is $.603$. The index ensures safety in assessing the suitability model (not to exaggerate the relevance of the model). With adjusted $R^2 = .603 > 0.3$, the model is considered suitable by 60.3%, which means the independent variables explain 60.3% of intention behavior to EB. ANOVA analysis showed that $F = 45.386$ is significant at 0.000 level, suggesting that building the regression model is consistent with the data collected and the factors are statistically significant at the 5% significance. Thus, the factors for the independent variable in the model with factors related to the dependent variable. Table 4 shows a total of 6 factors are included in the regression model, deeming that there are 02 factors that are not significantly affected intention behavior to ET with P -value > 0.05 (Perceived Ease and cost). The four remaining factors have impacted intention behavior to ET: Perceived usefulness (beta = $.375$), risk awareness (beta = $.261$), subjective norms (beta = $.259$), and perceived behavioral control (beta = $.221$)

$$IB = -.375PU + .261 RA + .259SN + .221PBC$$

The degree in order of impacted level from high to low is as follows: 1) Perceived usefulness (beta = $.375$), 2) risk awareness (beta = $.261$), 3) subjective norms (beta = $.259$), 4) perceived behavioral control (beta = $.221$). In the context of other factors constant, then when factors of Perceived usefulness improved by 1 unit, the intended behavior to ET level will increase by 0.375 units; the factor risk awareness improved by 1 unit, the intended behavior to ET level will increase by 0.261 units when factor perceived behavioral control improved by 1 unit, the intended behavior to ET of customer level will increase 0.221 units and when subjective norms improved by 1 unit, the intended behavior to ET of customer level will increase 0.259 units. So this study indicates that the model supports hypotheses H1, H3, H5, and H6, while H2 and H4 are unsupported.

ANOVA/T-test result

H7: There are different intention behavior in using electronic banking service among customer demographic.

For testing the hypothesis H7, t-test and ANOVA is used to test the differences between Socio-demographics (gender, age, education, and income) and intention behavior in using electronic tourism service. From the result of t-test and ANOVA test, it can be concluded that H7 is not supported with the statement that "There are different intention behavior in using electronic tourism service among customer demographic". The result also indicates that the intention behavior of customer in using electronic service is not so high with mean value is just above 3 score.

Table 3. Variable correlation

		PU	PE	RA	COST	SN	PBC	IB
PU	Pearson Correlation	1						
PE	Pearson Correlation	.055	1					
RA	Pearson Correlation	.295**	-.010	1				
COST	Pearson Correlation	-.019	.468**	-.037	1			
SN	Pearson Correlation	.456**	.057	.356**	-.068	1		
PBC	Pearson Correlation	.279**	.111	.088	.054	.293**	1	
IB	Pearson Correlation	.634**	.058	.485**	-.068	.593**	.424**	1

** $P < 0.01$

Table 4. Multiple regression result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.112	.363		-.308	.758
	PU	.296	.043	.375	6.808	.000
	PE	.038	.075	.028	.508	.612
	RA	.188	.037	.261	5.055	.000
	COST	-.073	.068	-.058	-1.072	.285
	SN	.287	.063	.259	4.557	.000
	PBC	.230	.053	.221	4.342	.000
	R ² / Adjusted R ²				617/603	
	F/Sig.				45.386/0.00	

a. Dependent Variable: IB

Table 5. T-test and ANOVA

Variables	Method	P value	Results
Gender	t- test	.360>0,05	Nodifference
Age	Anova	.298>0,05	Nodifference
Education	Anova	.865>0.05	Nodifference
Income	Anova	.203 >0.05	Nodifference

CONCLUSION

This research aims to study the intended behavior of the customer in using the E - tourism service using the TAM model. This study has conducted a survey with a customer 176 valid questionnaires are imputed in the model. The result indicates that 02 factors do not significantly affect intention behavior to ET with P- value> 0.05 (Perceived Ease and cost). The four remaining factors have impacted intention behavior to ET: Perceived usefulness (beta = .375), risk awareness (beta = .261), subjective norms (beta = .259), and perceived behavioral control (beta = .221). This result is consistent with the Wong (2020) survey found that convenience positively impacts the decision to use the acquirer. Besides, convenience significantly influences the actual behavior of the customers to decide to use online tourism services (Liao & Shi, 2017). From the t-test and ANOVA test, it can be concluded that the statement does not support H7, "There are different intention behavior in using electronic tourism service among customer demographic." The result also indicates that the intended behavior of the customer in using electronic tourism services is low, with a mean value just above 3. Although present, customers know and use E- tourism service is minor, in time, demand for the use of modern services will increase. Therefore, companies and destinations must make plans to deal with the problem. Increase user experience: Promote incentives to try the product for free and may have certain rewards. Design website content only advertises a little, but mainly to introduce the product distribution process. Such websites will make customers easy to use more functions without assistance. Helping customers find service is easy to use and instrumental in helping customers save time and money when using transactions through the internet. In addition, companies need to train professional staff with style, customer service attitude friendly, and enthusiasm and always equip themselves with knowledge about E-tourism services and counseling and referral services to customers. Destinations might organize promotional events to bring online services closer to each client or make promotional as free-of-charge services for those customers registered to use online services, such as free trips when customers open a personal account at the

companies. This study has two implications: academic implication and managerial implication. Based on the TAM model, this study has added knowledge of the intended behavior of the customer in tourism service since there needs to be more research in this area in the tourism industry. Also, with the results, this study will make tourism managers decide to give the solutions to improve customer intention behavior using the electronic tourism service. Although this study has implications, there are some limitations to discuss in this study. This study uses the TAM model; however, the scale is translated from English and may have some limitations. Besides, the sample size is reasonable, and the survey is conducted in Hanoi. A bigger sample size with other cities should be conducted for further research.

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