The Relationship between the Development of Air Transport and the Self-Planned Travel Intention of Office Workers: A Case Study in Ho Chi Minh City, Vietnam

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Abstract The development of aviation has had a strong impact on tourism. This study focuses on exploring the development of air transport which affects the self-planned travel intention of office workers in Ho Chi Minh City, Vietnam. Using a qualitative and quantitative research methodology, the research shows very important factors caused by the development of the aviation industry in Ho Chi Minh City, Vietnam, which impact on the self-planned travel of office workers including (1) the price of the aviation service, (2) the safety of the aviation service, (3) the quality of the service, (4) the convenience of the aviation service, (5) time and psychology, and (6) the information available about the aviation service. The results of the research suggest policies for airlines in general and Vietnam Airlines in particular and suggest key recommendations for developing passengers' self-planned tourism travel by air.

Keywords Air transport development · Influencing factors · Self-planned travel intention · Ho Chi Minh City · Vietnam

1 Introduction

Vietnam's aviation market maintained a high growth rate in recent years and is regarded as one of the fastest growing markets in the world (Vietnam Airlines 2017). By early 2018, seven aviation service companies had been issued licenses of aviation operation, but only five of them were officially engaged in passenger transportation:

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Vietnam Airlines, VietJet Air, Jetstar Pacific, VASCO, and Hai Au (Seaplanes). Nevertheless, only Vietnam Airlines, VietJet Air, and Jetstar Pacific have played a significant role in the growth and development of Vietnam's aviation industry. Domestic demand increased from 12.2 million passengers in 2012 to 40 million passengers in 2017 with an annual growth rate of 21.9%. The top three aviation companies—Vietnam Airlines, VietJet Air, and Jetstar Pacific—account for 37.5 million passengers with over 95% of the domestic aviation market share. In 2017, the revenues of Vietnam Airlines and VietJet Air were VND$63,967 billion and VND$22,644 billion, respectively (Civil Aviation Administration of Vietnam 2018).

As a country with a rich natural and cultural potential, Vietnam's tourism activities in recent years have grown rapidly (Vietnam National Administration of Tourism 2018). In 2017, international visitors to Vietnam reached nearly 13 million, up 30% compared with 2016. Domestic tourists were about 74 million, and the direct revenue from tourists reached more than VND$500,000 billion which is equivalent to US$23 billion. Tourism comprised about 7.5% of Vietnam's GDP in 2017 (Vietnam National Administration of Tourism 2018), and the development of the aviation industry in Vietnam has contributed to the stimulation of tourism (Vietnam Airlines 2017).

Tourism and aviation are two closely related businesses. Around 70–80% of passengers use airplanes for travel purposes and about 70–80% of international visitors to Vietnam travel by airplane (General Statistics Office 2016). The increasing number of customers choosing air travel as a means of transportation has created favorable conditions for the domestic and international air travel market. The more visitors come to Vietnam, the more opportunities for the two industries to grow together. The transportation capacity of the aviation industry will be improved as well as the quality of infrastructure and services in order to meet the needs of passengers (Vietnam Airlines 2017). Especially for tourism in Vietnam, the development of aviation has contributed positively to the promotion of self-planned tourism (Tam 2014). However, there are not many studies on this issue in Vietnam. Therefore, this study focuses on exploring the development of air transport which affects the self-planned travel intention of office workers in Ho Chi Minh City, Vietnam, and provides some ideas aimed at encouraging self-planned tourism intention of office workers in Ho Chi Minh City.

2 Literature Review

Consumer behavior or buying intention is an important topic for businesses. Yet, there are still many different concepts about this idea. According to Bennett (1995), consumer behavior is the behavior in which consumers express themselves by searching, using, and evaluating products and services that they expect to fulfill their demands. Similarly, Hoyer and MacInnis (2008) argued that the purpose of consumer behavior as described by Bennett (1995) was understood as a series of decisions about what to buy, why to buy, when to buy, how to buy, where to buy,

how much to buy, how often to buy, etc., that each individual group of consumers has to make. According to Schiffman and Kanuk (2007), consumer behavior is a dynamic interaction of cognitive, behavioral, and environmental factors and through that interaction people make behavioral decisions that change their lives. A recent consumer study showed that travel intentions are increasingly diverse. The consumer decision-making process is a complex sequence of decisions about which destination to choose, where to go, what to see, when to travel, who to go with, how long to go for, and how much to spend (Woodside and Lysonski 1989; Woodside and MacDonald 1994; Hyde 2008; Oppewal et al. 2015). Consumers are more concerned about quality, safety, and price (Eymann and Ronning 1997; Correia and Pimpao 2008). Many studies have shown that there are many important factors affecting the tourists' intentions: (i) destination security, financial capacity, idle time, reference group (Morley 1994; Crouch 1994; Mutinda and Mayaka 2012); (ii) transportation convenience, transport costs (Chen and Gursoy 2001); and (iii) source of information, facilities, attractions, etc. (Crompton 1979; Hsu et al. 2009; Chen and Tsai 2007).

Research by Adamowicz et al. (1994), Fesenmaier (1988), and Phau et al. (2014) identified geographic distances and facilities that are significant as pertinent to the choice of tourist destinations. Oppewal et al. (2015) showed that transportation services, especially air services, are important to tourism destinations. Factors such as the quality of transport services, promotion of services, and transportation affect the travel intentions of visitors (Oppewal et al. 2015). Other factors, such as transportation costs, travel costs, and visitor income, are determinants of travel choice (Lim 1999; Morley 1994). The development of aviation has had a powerful effect in shortening flight times, which is advantageous in terms of safety and time of transport (Vietnam Airlines 2017). Development of aviation operations has the effect of stimulating demand for tourism which is becoming more popular in countries such as Vietnam (Tam 2014; Vietnam Airlines 2017).

3 Research Methodology

3.1 Research Model

From the above studies and after discussing with 11 experts in order to build up the research model based on previously inherited and adjusted factors, six determinants were used in this study—*(1) quality of service (CL); (2) price of aviation service (GC); (3) safety of aviation service (AT); (4) convenience of aviation service (TL); (5) aviation information (TK); and (6) time and psychology (TP)—which affect self-travel intention (YD).* Therefore, our research model is proposed as shown in Fig. 1. Hypothesis for variables in the model are proposed as in the Table 1.

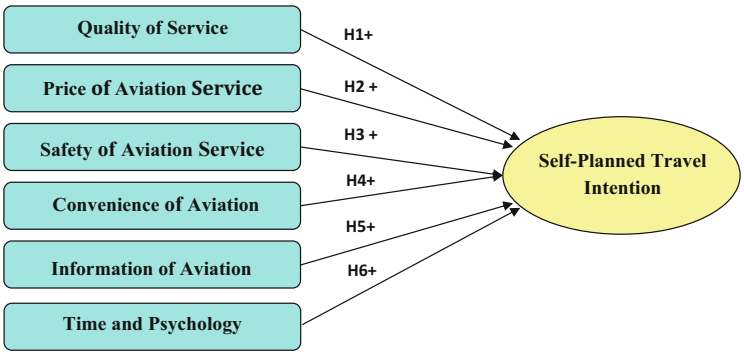

Fig. 1 Proposed Research Model. (Source: author study)

Table 1 Investigated hypotheses

Hypotheses		Expectation
H1	Quality of service has positive impacts on self-travel intention	+
H2	Price of aviation service has positive impacts on self-travel intention	+
H3	Safety of aviation service has positive impacts on self-travel intention	+
H4	Convenience of aviation service has positive impacts on self-travel intention	+
H5	Information of aviation service has positive impacts on self-travel intention	+
H6	Time and psychology have positive impacts on self-travel intention	+

Source: Author study

3.2 Data Analysis Methods

We used a number of methods of data analysis which are widely used in socioeconomic studies, such as scale reliability analysis, exploratory factor analysis (EFA), and linear regression analysis. In statistics, the reliability of a scale is evaluated by (1) Cronbach's alpha coefficient (α) and (2) item–total correlation coefficient for each factor constituting the scale. In the socioeconomic field, many researchers agree that when Cronbach's alpha is 0.8 or nearly 1.0, the scale is considered to be good (i.e., the consistency of the items in the scale is high); when it is from 0.7 to nearly 0.8, the scale is rated as good; and when it is 0.6 or more, the scale is acceptable (Nunnally and Berstein 1994; Peterson 1994; Slater 1995). In addition, the item–total correlation of a variable must be greater than 0.3 to be considered satisfactory (Nunnally and Berstein 1994).

After reliability analysis, satisfactory scales are further analyzed with exploratory factor analysis (EFA). In the EFA analysis, three parameters to be carefully investigated include (1) the number of factors extracted, (2) factor loading, and (3) total variance extracted. If the EFA analysis results show that these three conditions are satisfactory, it can be concluded that the EFA model is appropriate; i.e., using the EFA analysis approach in the study is appropriate. A multivariate regression analysis is also used to analyze the relationship between a dependent variable and multiple

independent variables to predict the degree of dependent variable (with limited accuracy) when the values of the independent variables are known. In addition, independent-sample T-test and a one-way ANOVA are also used to examine the effects of individual characteristics on the dependent variable in the regression model.

4 Results

4.1 Descriptive Statistics

The official survey was conducted from March 2018 to July 2018 among office workers in Ho Chi Minh City, Vietnam. A total of 400 hard copies and 600 emails with online links were sent out. Of these, 284 hard copies (73.5%) and 94 online observations (15.66%) were collected. After a screening process, 326 valid observations were used in this study. Table 2 briefly shows that the survey sample was eligible to represent the overall population.

Table 2 Descriptive statistics of surveyed objects

Aspects		Frequency	Percentage (%)
Gender	Male	142	43.6
	Female	184	56.4
Age range	<30	50	15.3
	30–40	125	38.3
	40–50	113	34.7
	≥50	38	11.7
Education	High school	16	4.9
	Intermediate	25	7.6
	College	44	13.4
	University	125	38.4
	Postgraduate	116	35.7
Times for traveling in a year	≤1	179	54.7
	2–3	122	37.7
	>3	25	7.6
Income (million)	<5	33	10
	5–10	110	34.1
	11–15	93	28.4
	16–20	56	17.1
	>20	34	10.4

Source: Author study

4.2 Reliability of Measurement Scale

The reliability test shows that the Cronbach's alpha (α) coefficients of the scales are greater than 0.6, with the smallest being the scale for customer service at α equal to 0.839 (see Table 3). All corrected item–total correlations are greater than 0.3, once the variable TL5 ("facilities of airport transportation" which has a corrected item–total correlation of 0.187, which is less than 0.3) is rejected. Thus, after the TL5 variable has been eliminated, all scales are accepted and included in the next exploratory factor analysis.

4.3 Exploratory Factor Analysis

The results of the EFA analysis in Table 4 give that all eight factors were extracted at an eigenvalue of 1.773 and a cumulative rotation sums of squared loadings of 63.57%. These indicate that the EFA approach is appropriate for this study. Moreover, the KMO of 0.795 and the Bartlett's test sig = 0.000 presented in Table 4 further confirm the appropriateness of the EFA method used in this study.

The analysis of the factors affecting the intention (YD): The results of the factor analysis show that the variables are categorized into five groups, with a cumulative variance of 73.597%, larger than 50%, so the scale is appropriate. The KMO coefficient is equal to 0.821, which is in the range of 0.5 to 1; therefore, factor analysis is appropriate. The Bartlett test has significance equal to 0.000, indicating a high level of significance. All factor loading values of the independent variables are greater than 0.5 (see Table 5).

Table 3 Reliability of measurement scale

Code	Factor	Cronbach's Alpha
CL	Quality of service	0.822
GC	Price of aviation service	0.814
AT	Safety of aviation service	0.835
TL	Convenience of aviation service	0.820
TK	Information of aviation	0.833
TP	Time and psychology	0.859
YD	The intention of office workers in HCMC with self-planned travel	0.604

Source: Authors' calculations

Table 4 Exploratory factor analysis and scale reliability analysis

Factors		Component					
		1	2	3	4	5	6
Time and psychology	TP5	0.838					
	TP3	0.810					
	TP4	0.765					
	TP2	0.764					
	TP1	0.751					
Information	TK3		0.827				
	TK2		0.756				
	TK4		0.752				
	TK1		0.736				
	TK5		0.734				
Convenience of aviation service	TL 3			0.811			
	TL 2			0.802			
	TL 4			0.788			
	TL 1			0.689			
Quality of service	CL5				0.891		
	CL3				0.873		
	CL2				0.832		
	CL4				0.783		
	CL1				0.746		
Price of aviation service	GC4					0.812	
	GC3					0.776	
	GC1					0.750	
	GC2					0.722	
Safety of aviation service	AT1						0.689
	AT3						0.855
	AT2						0.841
	AT4						0.760

Source: Authors' calculations

Table 5 Rotated component matrix of intention (YD)

Code	Factor 1
YD_1	0.699
YD_2	0.775
YD_3	0.721
YD_4	0.749

Source: Authors' calculations

4.4 Results of Linear Regression Analysis

The study shows the relationship between the development of air transport and the self-planned travel intention of office workers in Ho Chi Minh City, Vietnam, which is formed as follows:

$$YD = \beta_0 + \beta_1 * CL + \beta_2 * GC + \beta_3 AT + \beta_4 * TL + \beta_5 * TK + \beta_6 * TP + ei$$

The 326 valid observations and the results of the linear regression analysis process are given in Table 6.

The results show that all six variables are significant at the 0.05 significance level (0.05). This indicates that there is a linear relationship between the dependent variable and the predictor variables. The linear regression analysis results presented in Table 6 give that the adjusted R-squared coefficient is 0.692, which means that 69.2% of the variation of the dependent variable is explained by the independent variables attached in the model. The Durbin–Watson and VIF coefficients of the model show that the autocorrelation phenomenon and multi-collinearity were not significant.

Table 6 Regression coefficients

Variable	Coefficients	Variance inflation factor (VIF)
Cons.	−.3174 (.166)	
CL	.248*** (.023)	1.099
GC	.302*** (.024)	1.117
AT	.073*** (.019)	1.010
TL	.362*** (.021)	1.158
TK	.071** (.021)	1.059
TP	.070** (.024)	1.051
R-squared	.745	
Adjusted R-squared Durbin–Watson	.692 1.861	

Source: Authors' calculations
Standard deviation (for coefficients) in brackets
Note: ***, **, and * indicate the statistical significance at 1%, 5%, and 10%, respectively

5 Discussion and Implications

Based on the above results, the factors contributing to the development of air transportation affect the self-planned intention of Ho Chi Minh City office staff, including six factors which have positive influence (+); specifically, the "convenience of the aviation service" (TL) factor is the most influential one, with a coefficient of 0.362. Price (GC) is the second factor, with a coefficient of 0.302. Quality of service (CL) is the third most important factor, with a coefficient of 0.248. Safety of the aviation service (AT) and information about the aviation service (TK) are the next most influential factors. The above results are also consistent with the Vietnam aviation industry's (2017) identification of factors affecting the use of air travel by travelers, but differ in relation to in the degree of influence of the factors of price, safety, and comfort. In addition, time and psychology (TP) are considered in this study and are factors which affect the self-planned traveler's intention. They are also new elements in this study.

In order to raise the intention toward self-sufficient travel of office staff in Ho Chi Minh City, we have some suggestions:

Convenience of aviation service (TL): The convenience of the service does not include the expansion of the network of destinations for the airline industry, the convenience of serving passengers such as a parking lot, convenient ticketing services, or courier services. This is why Vietnam Airlines should expand the network of air routes to new localities, especially those with many attractive tourist destinations.

Price (GC): This requires the Vietnam aviation industry to have a reasonable pricing policy for each customer. There should be many fare levels for customers to choose from; specifically, there should be a flexible pricing mechanism for different times of the year.

Quality of service (CL): Quality of service should be ensured from the earliest stage by providing information about the organization of the service. Air transport companies in Vietnam need to improve the quality of their services to serve tourists. In addition to raising the qualifications of employees, the airlines need to have policies intended to improve the morale and service attitude of employees because this is a factor that is highly appreciated by customers. Besides, it is also necessary to further improve the facilities and to modernize the equipment of the aviation industry and of each airline.

Safety of aviation service (AT) and aviation service information (TK): Improving the safety of visitors will make guests feel secure when flying. The airlines need to continue to pay attention to safety conditions for travelers, especially the need to invest in equipping new aircraft lines using high safety standards. In addition, full information on flight schedules, routes, recommended programs, etc., would also improve the rate of travel.

Time and psychology (TP): Time and psychology are factors affecting the self-planned traveler's intention. These factors are intrinsic; however, the airlines in Vietnam need to save time for visitors through less delayed flights and improving

flight schedules. This is necessary to create a comfortable psychology for guests about using aviation services.

6 Limitations and Recommendations for Future Research

The limitation of this study is its focus on office workers in Ho Chi Minh City. Our next study will expand the field of research to all of Vietnam, broadening the samples investigated, so that policy implications can be extended to shipping companies which are not included in this analysis.

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