



## **A Thorough Assessment of the Causal Relationship from Tourist Satisfaction to Destination Loyalty: A Study in Tra Vinh**

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### **ABSTRACT**

Tourists' destination loyalty plays a vital role in developing tourism at local tourism attractions; it is however conditional on the tourists' satisfaction with destination, which is while determined by several other contingent factors. This study applies the Heckman two-stage method to examine the impact of tourists' destination satisfaction on their loyalty to destination. The findings offer statistical support for the effects of tourism environment, tourism staff, services price, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment on tourists' destination satisfaction, but no statistical evidence on the influence of lodging amenities on tourists' satisfaction with destination. The Heckman two-stage results provide evidence on the existence of sample selection bias in the research model. This research sheds light on the casual correlation from tourists' destination satisfaction to their destination loyalty with the intervention of sample selection bias.

**Keywords:** Tourism development; Tourist satisfaction; Tourist loyalty

**JEL Classifications:** L83, O53, Z32

### **1. INTRODUCTION**

Tourism is the greatest growing industry and makes a large contribution to the world's economy (Sadeh et al., 2012). Tourism development is a desirable goal for all over the world, because it creates a lot of employment for people in a number of nations, especially developing nations including Vietnam (Valle et al., 2006; Gursoy et al., 2009). According to Nguyen (2014), Tra Vinh province is a coastal region located on the Mekong Delta of Vietnam. It borders Ben Tre province to the northeast, Vinh Long Province to the northwest, Soc Trang province to the southwest and the East Sea to the southeast. Its population is about 1.1 million people with an area of 2292 square kilometers. Tra Vinh province also possesses various man-made and natural tourism resources. Tra Vinh Province's Tourism Development Committee (2014) reports that the provincial government takes special interest in developing tourism in the local region and considers it as a main economic industry of Tra Vinh province. The province of Tra Vinh enjoys a lot of advantageous conditions for developing tourism, able to attract foreign and local visitors. In contrast, Nguyen and Vu (2011) highlight that the tourism industry in Trà Vinh province has developed steadily; however, the activities of tourism have

still been unsustainable. Consequently, it is imperative to perform relevant research to the tourism development to help Tra Vinh province develop its tourism in a more sustainable way.

Furthermore, destination is an essential factor in developing the tourism industry, which is a combination of tourism services and products that offer visitors a unique travelling experience (Ramseook-Munhurrin, 2016). Tourists' destination satisfaction and loyalty are major elements making the tourism industry develop sustainably and successfully (Sadeh et al., 2012). A number of nations consider tourists' loyalty to destination as a substantial objective for developing tourism, while tourists' loyalty mainly arises from their destination satisfaction. Numerous governments have done their best to enhance the level of tourists' destination satisfaction and loyalty in different manners; so the satisfaction and loyalty of tourists to destination have been regarded as a research area of interest (Xia et al., 2009). Previous researchers have suggested and explored the dependence of tourists' destination loyalty on their satisfaction, which is in turn conditional on other contingent factors (Alrousan and Abuamoud, 2013; Neuts et al., 2013; Vetitnev et al., 2013; Salleh et al., 2014; Rajan, 2015; Ramseook-Munhurrin et al., 2016; Mai and Pham,

2017). However they have not taken into consideration contingent factors influence tourists' destination satisfaction, when investing the causal linkage from tourists' destination satisfaction to their loyalty. This research fills that void by applying the Heckman two-stage procedure to take into account the effects of contingent factors on tourists' destination satisfaction.

## 2. LITERATURE REVIEW

Christopher et al. (1994) confirm that an increasing interest in behavior relationship within the area of marketing. This occurs as a reaction to an increasingly competitive growth of economies characterized by developing maturity, complication, disintegration and aggressive intensity in service markets. Furthermore, Gronroos (1999) document that customers become more complicated and seek more tailored handling, which makes businesses concentrate more on the development and maintenance of their relations to the different parties (suppliers, customers, employees, competitors, government, other stakeholders, etc.) that take part in the interchange of commercial activities to survive in the very competitive environment. Numerous organizations become aware that the establishment of durable and good associations with partners and customers bring about competitive advantages for their their business, because of the contribution to the effective need of services and goods for some segments of the market (Ganesan, 1994; Hunt et al., 2006); yet the strategy of establishing the client associations ought to only be placed in practice when it sustainably maintains these competitive advantages (Morgan and Hunt, 1999). Therefore, customer loyalty can be considered as an imperative index to improving organizational performances (Odunlami and Matthew, 2015). Furthermore, loyalty has been also acknowledged as a very essential attribute, because it involves an extremely efficient promotion without incurring transaction expenses (Neuts et al., 2013). The role of loyalty in corporate or industrial success is reported by Hallowell (1996), because loyal customers will help organizations diminish expenses relevant to new client recruitment and new price negotiation. Likewise, Huang and Su (2010) highlight the importance of customer loyalty to the growth in service industry in the dynamic business environment. Customer loyalty is widely recognized in management knowledge by the recommendation to others and the desire to reuse products or services (Andreassen and Lindestad, 1998). In addition, Oliver (1999) mentions consumer loyalty as the situation that consumers likely keep on buying a specific service or product. Customer services should be taken into account on maintaining existing customers by boosting their client loyalty. Customer loyalty programs ought to be frequently implemented to encourage current customers to repeat using services or products. The tourism literature has received the introduction of tools, which have been employed to develop relationship marketing. However, there has been little attention to the notion of tourist loyalty in the tourism knowledge (Yoon and Uysal, 2005). Competition in tourism industry has been recently severe and even more severe in upcoming years; therefore, tourism executives should learn the reasons why visitors are loyal to tourist attractions, what determinants affect their loyalty and whether the tourist attractions could make loyalty in the visitors (Campon et al., 2013). As Yoon and Uysal (2005) reported, destinations could be regarded as

products that existing visitors can revisit or recommend to other potential visitors such as their relatives or friends.

Several previous studies (Hallowell, 1996; Odunlami and Matthew, 2015) emphasize the importance of customer loyalty to enhancing corporate or industrial success. However, customer loyalty is conditional on customer satisfaction (Srivastava, 2015). Within service industry, customer loyalty has been repetitively and consistently acknowledged as a result of customer satisfaction (Lam et al., 2004). In regard to tourist destination, Neuts et al. (2013) refer to tourist or destination loyalty as the existing tourists' intention to visit destinations again in the future or the likelihood they can recommend these destinations to their relatives or friends. Tourists' destination loyalty can be a vital driver of local tourism development, which is based on dimensions of behavioral intention, directly connected to what is normally defined as the attitudinal feature of destination loyalty by tourists (Dekimpe et al., 1997).

Nevertheless, Campon et al. (2013) asserted that, research on tourist loyalty has been still modest, thus there exist numerous inquests about how to hold tourists loyal to tourism destination. Furthermore, Chi and Qu (2008) highlight the importance of determining the driving force of destination loyalty because businesses would know how to enhance tourist loyalty towards destination and so improve performance; whereas, Battour et al. (2012) reported there are numerous scholars confirm the link between destination satisfaction and tourist loyalty. Valle et al. (2006) investigate the relation of destination satisfaction to tourist loyalty, indicating that bigger tourist satisfaction can make tourists revisit and keener to recommend the tourist attraction to their relatives or friends. Different tourist groups are related to different destination satisfaction levels and tourist loyalty levels towards the destination. Sadeh et al. (2012) seek to explore the determinants and consequences of tourist satisfaction with destination. The findings offer statistical support for the point of view that destination satisfaction is one of the major factors to predict tourist loyalty. In addition, in recent years, there are still a number of researchers discuss and clarify the relationship between destination satisfaction to tourist loyalty with destination; for example, Alrousan and Abuamoud (2013), Vetitnev et al. (2013), Salleh et al. (2014), Rajan (2015), Ramseook-Munhurrin et al. (2016), Mai and Pham (2017), etc. They all emphasize the importance of destination satisfaction to tourist loyalty with destination.

On the one hand, destination satisfaction is a determinant of tourist loyalty with destination (Salleh et al. 2014); on the other hand, it is determined by other factors (Rajan, 2015). As reported by Vetitnev et al. (2013), there are a number of contingent influencers of destination satisfaction, such as destination image, tourism entertainments, previous expectations and experience, security and safety, convenience, quality of tourism services, tourism products of destination and others. These scholars try to investigate driving forces of tourist satisfaction with destination. The empirical results revealed that the influential factors impose different effects on tourist satisfaction, which in turn affects tourist destination loyalty. Additionally, Neuts et al. (2013) stress the importance of creating a fascinating range of tourism services and products at

the host location by making special efforts in tourism promotion and management. As asserted in Neuts et al. (2013), personal characteristics (holiday, age, gender, education, nationality, income and business), motives (environment, culture, consumption, business) and e-services are determinants of tourist loyalty and destination satisfaction, which can lead to tourist loyalty. Similarly, Rajan (2015) concludes there is a causal positive significant link from the explanatory factors, such as Tourist perception, destination image, destination experience and attributes of destination, to tourist satisfaction; and then tourist satisfaction with destination is an influential factor of tourist loyalty.

Mai and Nguyen (2015) explore main influential variables of destination satisfaction of tourists and their loyalty to tourism attraction. Their empirical results are that tourists' destination satisfaction is determined by other contingent factors such as destination image, price, negative attributes, accessibility, infrastructure, leisure and entertainment, local cuisine, cultural environment, natural environment, novelty seeking, safety and security. The results also indicate a significant positive influence of tourists' destination satisfaction on their loyalty to tourism attraction. These authors assert that when getting satisfied with the tourism attractions, tourists likely return to those places. Likewise, Ramseok-Munhurrun et al. (2016) provides statistical support for the effects of the service quality of destination (including: (1) Attractions, (2) accessibility and transport, (3) adventure and discovery, (4) people and hospitality, (5) activities and sports, (6) prices, (7) environment, (8) accommodation and food) on destination satisfaction. The regression results emphasize the importance of the destination service quality in explaining destination satisfaction. Nguyen (2015) suggests that there are eight contingent factors affecting destination satisfaction, which are tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment. Overall then, it can be hypothesized that:

H<sub>1</sub>: *Tourists' destination satisfaction affects their loyalty to destination.*

H<sub>2</sub>: *Tourists' destination satisfaction is affected by contingent factors such as tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment.*

As previously discussed, tourists' destination satisfaction can likely boost their loyalty to destination; eight contingent factors (tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment) are however regarded as the determinants of tourists' destination satisfaction in this research. Therefore, to thoroughly investigate the effect of tourists' destination satisfaction on their loyalty to destination, it is necessary to include these contingent factors into the research model of tourists' destination satisfaction and loyalty and then apply the Heckman two-stage procedure for analyses. This technique investigates the causal link from tourist satisfaction to destination loyalty, by taking the impact of the eight contingent factors on tourist destination satisfaction into account.

Consequently, this research follows the two-stage procedure suggested by Heckman's (1979) to explore the causal link between tourists' destination satisfaction and their loyalty to destination with considering the impacts of tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment on tourists' destination satisfaction.

### 3. RESEARCH DESIGN

#### 3.1. Sample and Measurement Instruments

The research sample used for this study consists of 253 useful responses from 506 tourists visiting the 23 major tourism attractions in Tra Vinh province. At each tourism attraction, 22 tourists were asked to complete the questionnaires by using the method of convenience sampling. This research employed ten key constructs for analyses in the research model, which are tourists' destination satisfaction, tourists' loyalty to destination, tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment. A five-point scale from (1) strongly disagree, (2) a little disagree, (3) a little agree, (4) quite agree and to (5) very agree about the statements for measured items are employed. There are 2 measured items for tourists' loyalty to destination, 3 measured items for tourists' destination satisfaction, 6 measured items for tourism environment, 9 measured items for tourism staff, 6 measured items for services price, 5 measured items for lodging amenities, 6 measured items for tourism transportation facilities, 5 measured items for tourism service, 5 measured items for tourism infrastructure and 7 measured items for socio-cultural environment. These measured items and constructs are adapted and modified from Neuts et al. (2013, Rajan (2015), Nguyen (2015) and Ramseok-Munhurrun et al. (2016). The probability of destination satisfaction (KNHL) by tourists is coded one (1) if satisfaction with destination is manifest in tourist (i.e. if a tourist a little agree, quite agree or very agree about the statements for measured satisfaction items) and zero (0) otherwise.

#### 3.2. Data Analysis

This research firstly runs descriptive analyses to classify the characteristics of respondents. Secondly, it applies reliability analyses to test the properties of construct measurements and the items forming the constructs. This research then employs the multiple regression analyses to test the research hypotheses. Finally, it applies the Heckman two-stage procedure to examine the causal association between tourists' destination satisfaction and their loyalty to destination with taking into account the influences of contingent factors on the possibility of tourists' destination satisfaction. The Heckman two-stage technique consists of two stages. The first stage develops a selection model (a model of factors relating to survey non-response). The model of probit is conducted for all the observations. The estimators of  $\gamma$  generate the consistent estimators of the inverse Mills ratio  $-\lambda_1(-Z_1\gamma)$ ; with  $\lambda_1(-Z_1\gamma) = \delta(Z_1\gamma) / \Gamma(Z_1\gamma)$ ; where  $\delta$  represents the standard normal density function, whereas  $\Gamma$  stands for the standard normal cumulative distribution function. The second stage estimates the resulting equation with the ordinary least square method; where both the explanatory factors and the constructed level of

the inverse Mills ratio (INVMILLS) are entered into the model:  

$$Y = \alpha * X + \beta * \lambda_i (-Z_i \gamma) + \epsilon$$

## 4. FINDINGS

### 4.1. Demographic Characteristics of Respondents

Demographic characteristics of respondents are shown in Table 1. The final sample of this research consists of the 253 useful observations, where the 112 respondents are females (making up 44.3%), while 141 are males (accounting for 55.7%). The results indicate that the education of respondents is divided into eight groups. The respondents of under elementary account for 2.7%; elementary 5.5%; junior secondary 12.3%; senior secondary 12.7%; vocational education 13.4%, college 16.6%, undergraduate 26.9%, postgraduate 9.9%. In addition, of 253 tourists, 26.9% are workers, 26.1% are businessmen, 20.5% are retirees and 26.5% are others.

### 4.2. Measurements Reliability

To check the internal steadiness of the constructs, the reliability analyses are utilized. The results are exhibited in Table 2. The smallest suitable limit of the corrected item-total relationships is 0.4; while that of the Cronbach’s alphas is 0.7 (Hair et al., 2012). Furthermore, Cronbach’s alphas “if item deleted” should be less than their Cronbach’s alphas (Nunnally, 1978).

As Table 2 shows, all of the corrected item-total correlations are greater than 0.4, where the lowest is 0.413 belonging to CSLT2

of “Lodging amenities (CSLT)”, the largest is 0.871 belonging to MTDL3 of “Tourism environment (MTDL)”. The Cronbach’s alphas range from 0.732 of lodging amenities (CSLT) to 0.905 of tourism staff (NVPV). In addition, all of the Cronbach’s alphas “if item deleted” are smaller than their Cronbach’s alphas (from 0.732 to 0.905). These above mentioned figures point out that all of the measurements enjoy adequate internal consistency; they can be therefore retained for further analyses.

### 4.3. Hypotheses Testing

After the measurements are assured internally reliable, the summated constructs of the factors are calculated. The multiple regression analyses are run to test the research hypotheses in the model. The findings are illustrated in Table 3. Regarding the causal relationship between tourists’ destination satisfaction and their loyalty to destination, as seen in Table 3, tourists’ destination satisfaction imposes a positive effect on their loyalty to destination at the 1% significance level. The research model fits at the 1% significance level with the  $R^2 = 0.177$ , which implies that tourists’ destination satisfaction explains 17.7% of variation in the tourists’ loyalty to destination. The influential effect of tourists’ destination satisfaction on their loyalty to destination achieves the 0.299 coefficient, indicating that when tourists’ destination satisfaction increases by one unit, the tourists’ loyalty to destination will increase by 0.299 units. Overall, the hypothesis H1 “Tourists’ destination satisfaction affects their loyalty to destination” is statistically supported at the 1% significance level. As Table 3

**Table 1: Characteristics distribution of respondents**

Characteristics	Frequency	Total
Gender	Female: 112, Male: 141	253
Educational qualification	Under elementary: 7, elementary: 14, junior secondary: 31, senior secondary: 32, vocational education: 34, college: 42, undergraduate: 68, postgraduate: 25	253
Occupation	Worker: 68, businessmen: 66, retirees: 52, other: 67	253

Source: Author’s calculation running descriptive analyses, 2017

**Table 2: Reliability statistics**

Measured item	Corrected item-total correlation	Cronbach’s alpha if item deleted	Cronbach’s alpha	Number of items
<b>Tourism environment (MTDL)</b>				
MTDL1	0.677	0.884	0.894	6
MTDL2	0.641	0.890		
MTDL3	0.871	0.855		
MTDL4	0.711	0.878		
MTDL5	0.707	0.877		
MTDL6	0.755	0.870		
<b>Tourism staff (NVPV)</b>				
NVPV1	0.580	0.901	0.905	9
NVPV2	0.814	0.884		
NVPV3	0.613	0.899		
NVPV4	0.667	0.895		
NVPV5	0.806	0.885		
NVPV6	0.611	0.899		
NVPV7	0.587	0.900		
NVPV8	0.678	0.894		
NVPV9	0.754	0.888		
<b>Services price (GCDV)</b>				
GCDV1	0.645	0.812	0.843	6
GCDV2	0.586	0.824		
GCDV3	0.672	0.808		
GCDV4	0.545	0.832		

(Contd...)

**Table 2: (Continued...)**

Measured item	Corrected item-total correlation	Cronbach's alpha if item deleted	Cronbach's alpha	Number of items
<b>Services price (GCDV)</b>				
GCDV5	0.784	0.782		
GCDV6	0.508	0.837		
<b>Lodging amenities (CSLT)</b>				
CSLT1	0.621	0.638	0.732	5
CSLT2	0.413	0.715		
CSLT3	0.423	0.716		
CSLT4	0.427	0.714		
CSLT5	0.610	0.641		
<b>Tourism transportation facilities (PTVC)</b>				
PTVC1	0.535	0.809	0.825	6
PTVC2	0.518	0.813		
PTVC3	0.774	0.757		
PTVC4	0.497	0.816		
PTVC5	0.678	0.778		
PTVC6	0.562	0.804		
<b>Tourism service (DVDL)</b>				
DVDL1	0.627	0.812	0.839	5
DVDL2	0.612	0.816		
DVDL3	0.701	0.790		
DVDL4	0.601	0.819		
DVDL5	0.686	0.797		
<b>Tourism infrastructure (CSHT)</b>				
CSHT1	0.640	0.850	0.865	5
CSHT2	0.556	0.866		
CSHT3	0.709	0.830		
CSHT4	0.769	0.823		
CSHT5	0.790	0.808		
<b>Socio-cultural environment (VHXH)</b>				
VHXH1	0.683	0.824	0.854	7
VHXH2	0.671	0.826		
VHXH3	0.685	0.825		
VHXH4	0.743	0.815		
VHXH5	0.439	0.874		
VHXH6	0.613	0.834		
VHXH7	0.613	0.835		
<b>Tourists' destination satisfaction (MDHL)</b>				
MDHL1	0.612	0.852	0.833	3
MDHL2	0.778	0.682		
MDHL3	0.699	0.765		
<b>Tourists' loyalty to destination (MDTT)</b>				
MDTT1	0.639	*	0.779	2
MDTT2	0.639	*		

Source: Author's calculation running reliability analyses, 2017

reveals, the research model of predicted variable "tourists' destination satisfaction" obtains the goodness of fit at the 1% significance level. The  $R^2$  of this model is 0.379, demonstrating that 37.9% of variance in tourists' destination satisfaction is predicted by tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment. Of the eight influential factors, tourism environment, tourism staff and tourism service statistically affect tourists' destination satisfaction at the 1% significance level; while services price and tourism transportation facilities only influence tourists' destination satisfaction at the 5% significance level. While tourism infrastructure and socio-cultural environment impose a 10% positive impacts on tourists' destination satisfaction, the variable "lodging amenities" has no effect on tourists' destination

satisfaction. Therefore, seven of the eight affecting factors put statistical effects on tourists' destination satisfaction at the 1%, 5% and 10% significance levels, however, the factor of lodging amenities is not statistically related to tourists' destination satisfaction. These findings reveal that hypothesis H2 "Tourists' destination satisfaction is affected by contingent factors such as tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment" is just partially supported. Tourism environment is the most important to tourists' destination satisfaction; while tourism staff is the second. Services price and services price are similarly important to tourists' destination satisfaction, ranked at the third position. Next important to tourists' destination satisfaction are tourism transportation facilities, tourism service, tourism infrastructure

**Table 3: Multiple regression statistics**

Predicted variable	Predictor variable	Coefficient	Standard error	t	P> t	P> F	R <sup>2</sup>
MDTT	MDHL	0.299	0.065	4.584	0.000	0.000	0.177
	Constant	2.183	0.214	10.212	0.000		
MDHL	MTDL	0.374	0.055	6.741	0.000	0.000	0.379
	NVPV	0.199	0.077	2.598	0.010		
	GCDV	0.160	0.063	2.530	0.012		
	CSLT	-0.077	0.075	-1.023	0.307		
	PTVC	0.126	0.056	2.277	0.024		
	DVDL	0.153	0.058	2.639	0.009		
	CSHT	0.130	0.072	1.805	0.072		
	VHXH	0.113	0.060	1.901	0.058		
	Constant	-0.703	0.365	-1.925	0.055		

Source: Author’s calculation running regression analyses, 2017

and socio-cultural environment. Finally, the factor “lodging amenities” has no effect on tourists’ destination satisfaction.

The multiple regression analyses has not comprehensively examined the impact of tourists’ destination satisfaction on their loyalty to destination, this research thus employs the Heckman two-stage method to study the causal link between tourists’ destination satisfaction and their loyalty to destination by including the contingent factors into the research model. The results are exhibited in Tables 4 and 5. The figures in Table 4 indicate that, the probability of tourists’ satisfaction to destination is determined by tourism environment, tourism staff, services price, lodging amenities, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment at the 5% significance level. The independent variables account for 29.65% of variation in tourists’ satisfaction to destination. The variable “lodging amenities” put no statistical influence on tourists’ satisfaction to destination, which is consistent with the multiple regression statistics. The Heckman first stage generates the ratio of INVMILLS, which is then included into the resulting equation for the Heckman second stage. The findings from the second step are shown in Table 5.

The Heckman second stage findings reveal that, the second model achieves the good fitness at the 1% significance level. The explanatory power of the regression model accounts for 64.45% of variance in the dependent variable. The estimate of INVMILLS is equal to -0.556, different than zero. In addition, the coefficient of tourists’ satisfaction to destination on their loyalty to destination decreases from 0.299 in the multiple regressions down to 0.278 in the Heckman second stage. Furthermore, the significance level of the effect of tourists’ destination satisfaction on their loyalty to destination increases from 1% to 5%.

The inverse Mills ratio affects tourists’ loyalty to destination at the 1% significance level. These figures indicate that there is a selection bias in the analytic model. Therefore, it is necessary to apply the Heckman procedure to analyze the research model. The influence of tourists’ satisfaction to destination on their loyalty to destination is weaker with the Heckman method than that with the multiple regression technique. These above mentioned numbers help to assert that the selection bias can make the findings from the multiple regression analyses become inaccurate for the relationship between tourists’ destination satisfaction and their loyalty to destination. Accordingly, the scholars should take into account the selection

**Table 4: Heckman first stage**

KNHL	Coefficient	Standard error	z	P> z
MTDL	0.692	0.141	4.908	0.000
NVPV	0.376	0.192	1.958	0.049
GCDV	0.310	0.155	2.000	0.048
CSLT	-0.134	0.176	-0.761	0.448
PTVC	0.231	0.136	1.699	0.088
DVDL	0.376	0.137	2.745	0.006
CSHT	0.255	0.151	1.689	0.089
VHXH	0.207	0.126	1.643	0.096
CONS	-5.651	0.988	-5.720	0.000

Prob>Chi<sup>2</sup>=0.0257; Pseudo R<sup>2</sup>=0.2965. Source: Author’s Calculation running Heckman method, 2017

**Table 5: Heckman second stage**

MDTT	Coefficient	Standard error	z	P> z
MDHL	0.278	0.124	2.242	0.022
INVMILLS	-0.556	0.189	-2.942	0.003
CONS	2.418	0.453	5.338	0.000

Prob>|F|=0.000, R<sup>2</sup>=0.645. Source: Author’s calculation running Heckman method, 2017

bias, when analyzing the research models related to the sample selection problem, so the research findings reveal more correctly.

## 5. CONCLUSION

The effect of tourists’ destination satisfaction on their loyalty to destination has been examined by previous researchers; but to the best of the author’s knowledge, these researchers have not investigated this influence with taking in consideration the sample selection bias. The current research applies the Heckman two-stage method to study the causal linkage between tourists’ destination satisfaction and their loyalty to destination. The findings offer statistical support for hypothesis H1 that tourists’ destination satisfaction affects their loyalty to destination. The results also provide statistical evidence on the effects of tourism environment, tourism staff, services price, tourism transportation facilities, tourism service, tourism infrastructure and socio-cultural environment on tourists’ destination satisfaction, partially supporting hypothesis H2. The variable “lodging amenities” is found having no statistical impact on tourists’ satisfaction to destination. Furthermore, the findings document a statistical difference in the influence of tourists’ destination satisfaction on their loyalty to destination between the Heckman two-stage procedure and the multiple regression method. The effect is weaker, when the sample selection bias is taken into account.

These findings offer scholars a thorough understanding of the important role of sample selection bias in the research models suffering the bias problem; because it will twist the empirical findings less correct. This research is also helpful to executives by offering a better understanding of the casual link between tourists' destination satisfaction and their loyalty to destination. Consequently, they can establish better policies on enhancing tourists' satisfaction and loyalty to local destinations.

## 6. ACKNOWLEDGEMENT

This project has been financed with a Research Grant from Tra Vinh department of science and technology, Tra Vinh province, Vietnam. The author is very thankful to the respondents for their help in providing essential information for the research analyses.

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