

DETERMINING TURKISH HOUSEHOLDS' TOURISM CONSUMPTION EXPENDITURES IN ECONOMIC CRISIS¹

Hasan GÜL²

Department of Tourism Management, Adana Alparslan Türkeş Science and Technology University, Adana, Turkey
ORCID: 0000-0002-3661-0578

ABSTRACT

Crises may influence the most economies differently in the world and cause to diminish their national wealth and rise in unemployment rates. As a developing country, Turkey has been impressed by some economic slumps in the world in different periods. This study aims to investigate the tourism participation of households and estimate the most sensitive household groups after the 2008 financial crisis by employing Heckman two-stage model. It also reveals which household groups change their tourism consumption expenditures more in Turkey. The results show that variations in income elasticity during the crisis are different to household groups. In other words, households with high income level were not significantly affected by the world economic crisis, while households with low income reduced tourism consumption expenditures both in domestic and outbound tourism.

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INTRODUCTION

Every year, millions of people travel for different purposes, which leads to rapid development and diversification of tourism sector in the world. Tourism has been a beneficial sector for the Turkish economy since 1980s and Turkey continually has been ranked as the top tourism destination

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² Address correspondence to Hasan GÜL, PhD, Science and Technology University, Faculty of Business, Department of Tourism Management, Adana, TURKEY. E-mail: hgul@atu.edu.tr

country in the world for almost three decades. 1980 was a highly important year for the Turkish tourism due to switching economic policy of Turkey. At that year, import substitution policy was abandoned and export oriented growth strategy started to implement (Gül & Çağatay, 2015). New economic policy flourished the tourism sector rapidly and the tourism sector's share of GDP rose to 4.1% around 2000s (was about 2.1% in 1990). For all favorable conditions, international tourism receipts of Turkey decreased to nearly 20 billion USD due to diplomatic crisis with Russia, some regional uncertainties and failed 15 July coup attempt in 2016 (Gül & Özer, 2018). Turkey's international tourism receipts increased by 18.9 % in 2017 and reached to \$26.2 billion. Turkey climbed up from 10th to 8th place in arrivals but did not hold top ten position in receipts in 2017.

Tourism expenditures represent direct income for the destination countries and are seen an important tool for their economic growth. Economic crises may cause a sharp decrease of Gross Domestic Product (GDP), production, total demand and affect the households' income. It is known that economic crises mostly affect low income households in developing countries and make them more vulnerable.

Table 1. *GDP and per capita GDP in Turkey (2000-2017)*

Years	GDP (Billion \$)	GDP per capita (\$)
2000	273,085	4,219
2001	200,305	3,053
2002	238,342	3,589
2003	311,944	4,643
2004	404,853	5,953
2005	501,163	7,278
2006	550,796	7,899
2007	675,010	9,563
2008	764,643	10,692
2009	644,470	8,882
2010	772,290	10,476
2011	832,497	11,141
2012	873,696	11,553
2013	950,328	12,395
2014	934,075	12,022
2015	859,449	10,915
2016	863,390	10,817
2017	851,102	10,532

Source: World Bank (2018)

As displayed in Table 1, both GDP and per capita GDP in Turkey were severely affected by economic crises especially in 2001, 2008 and partly after 2014. For instance, in 2008 (the financial crisis in the world) the GDP of Turkey was \$764 billion and per capita GDP was around \$10,692. After this year, GDP diminished to \$644 billion and per capita GDP to \$8,882. In Turkey, from 2008 to 2009, GDP and real per capita income fell by 15% and 17% respectively. Decreasing GDP means negative growth in the economy. Therefore, a decrease in production, an increase in budget deficit and unemployment with poverty in 2009 was witnessed. The deterioration of households' income led to a decrease in household consumption and indicators show that the crisis affected consumer households heterogeneously.

We know that income is an important factor of household consumption. Therefore, decreasing per capita income might heterogeneously change many goods' and services' consumptions. That is to say, while households might keep on consuming some goods and services, and diminishing the others. For instance, clothing, transportation, housing and other goods showed the highest reduction (nearly 10%); whereas food and energy registered a lower increase (more than 1%). These examples show that households' consumption behavior can be changed depending on households' budget constraints and their tastes (Nicolau & Masiero, 2013).

Tourism sector is very dependent on demand side of the economies. For this reason, it is inevitably influenced by economic slumps in the world. Bernini & Cracolici (2015) suggested that tourism consumption expenditures in crises times vary by households' socio-economic status such as occupation, age, income, regions, education and employment.

This study intends to investigate how 2008 financial crisis affected tourism consumptions of households in Turkey by employing a Heckman model (Heckman, 1979). Tourism consumption expenditures in this paper are analyzed with two dimensions. While the first dimension estimates domestic tourism consumptions, the second one investigates outbound tourism consumptions of residents' tourism expenditures when they are abroad. To the best of author's knowledge, there is no study to till the date to model tourism consumption expenditures both theoretically and empirically in Turkey. This study aims to reveal the effects of economic crisis on tourism consumption expenditures. It is expected that results of this study will be a guide to public and private agents in the sector to use the best tourism policy tools in the crises times.

This paper is organized as follows: second section summarizes the literature review. Third section presents the theoretical setting of the Heckman model. In this study data covers from 2007 to 2010 and fourth section defines data which was employed in the model. Fifth section displays the results and the last section concludes the paper in light of the results.

LITERATURE REVIEW

Literature review suggests that there are plenty of empirical studies on tourism impact analysis (Song & Li, 2008). However, the effects of economic crisis on tourism expenditures have received no attention in Turkey. In other words, searching this nexus will be an original contribution to the existing literature since there isn't any previous attempt to the best of our knowledge.

The analysis of the Heckman model is an important tool that some papers studied this model for different topics for Turkey in the literature such as Pazarlioğlu et al. (2007), Taşçı and Darıcı (2009), Sayin et al. (2010), Zhang (2011), Caner and Ökten (2013), Brown et al. (2014), Sahin et al. (2014), Ceritoğlu (2017), Williams and Kedir (2017), Sacli and Ozer (2017) are heterogeneous in their scope.

Pazarlioğlu et al. (2007) used Heckman model and investigated the milk demand in the city of İzmir in Turkey by using a household survey. Results showed that own price elasticities for farm milk and fluid milk were found as -0.16 and -0.18 respectively. Taşçı and Darıcı (2009) used Household Labor Force Survey data of 2006 and examined the determinants of unemployment in Turkey by employing Heckman's two step approach. They confirmed that if the labor force participation was taken into account, the likelihood of being unemployed was larger for women than that for men. Their findings suggested that settlement was also important. Living in urban areas seemed to decrease the probability of being unemployed than in rural ones. Finally, being head of household decreased the likelihood of being unemployed. Sayin et al. (2010) aimed to define the key factors of fish consumption by using Heckman model for 498 households which reside in Antalya in 2007. Results showed that some socio-economic determinants, such as income, educational level and households with pension salary, tended to buy or consume more fish. Zhang (2011) employed a Heckman model to calculate a more than 50 percent increase in residential electricity tariff in 2008 in Turkey. An 18,671

households' sample is used to estimate household price sensitivities. Results showed that poor households are three times less responsive to price changes than the rich households. Caner and Ökten (2013) examined the socioeconomic factors to define students' university choices in Turkey by employing Heckman model. According to results, more educated and rich families' children tend to be more successful at university entrance exam and enroll the publicly financed higher education universities. Surprisingly, students which tend to enroll private universities also come from more educated and rich families. Brown et al. (2014) analyzed the factors which effective on health expenditures of Turkey by applying Heckman model. They found a causal negative link between poverty and health expenditures. Findings show that rich households are more likely to reach to healthcare when compared to poor households. Sahin et al. (2014) aims to reveal 180 households' meat consumption preferences in Hakkâri, Turkey between the dates of November 2007 and May 2008 by using Heckman model. Results show that mostly mutton meat is consumed in Hakkâri, but the per capita mutton meat consumption amounts are varied among the income groups. Ceritoğlu (2017) estimated a two-step Heckman model and analysed the factors of home-ownership and housing financing in Turkey by using household budget surveys between 2003 and 2014. Results of this paper suggest that young aged people are more unlikely to own their houses, but they tend to have debts for housing. Williams and Kadir (2017) evaluated the causal linkage from business registration to future firm performance on some formal enterprises in Turkey by employing two step Heckman model. Findings of this study showed that formal enterprises which registered from the outset significantly lower productivity growth rates and annual sales and compared to started-up unregistered. Sacli and Ozer (2017) applied a two-step Heckman model to investigate the socioeconomic factors which affecting red meat, chicken meat, and egg expenditures in some provincial centers of Turkey. By using 2,690 households, paper concluded that, income, education level, gender and birthplace of consumers were significant in determining veal and beef demand in these regions. Moreover, chicken meat had the highest expenditure elasticity in these provincial centers.

Even if there is no Heckman model to analysis tourism consumption decisions in Turkey, some scholars try to investigate household tourism expenditures in different countries such as Italy (Zanin & Marra, 2012; Brida & Tokarchuk, 2017), Netherlands (Van Soest & Kooreman, 1987; Melenberg & Van Soest, 1996; Bronner & de Hoog, 2012),

Spain (Alegre & Pou, 2004; Alegre et al., 2009; 2013; Rodríguez et al., 2018), United Kingdom (Davies & Mangan, 1992), United States (Hagemann, 1981; Cai, 1998; 1999; Weagley & Huh, 2004; Jang & Ham, 2009), and Vietnam (Huynh, 2018).

Inspired by some studies above, this study aims to investigate the sensitivity of Turkish households' tourism consumption in economic crises times and seek for the answer to how economic crisis affected tourism consumption behavior of Turkish households and how different household groups react to this crisis at the consumption levels. The originality of the paper is in its in-depth examination of domestic and abroad tourism consumption expenditures of Turkish households in the pre- and post-crisis periods (2007-2010).

DATA AND METHODOLOGY

Data

The methodology of this study is founded on composing the Tourism Satellite Accounts (TSA) tables, Input-Output tables and the Heckman model. In line with the framework of this study, 23 different expenditure items and prepared 10 TSA tables were determined. As a result of composing an expenditure vector to show tourism consumptions, we obtain one (unique) tourism sector in the input-output tables. In this modelling scope, deriving from the same year of input-output matrix, we modify to set a separate tourism industry using collected information from the TSAs of the same year. With the help of these 10 tables, we aim to estimate tourism consumption expenditures each year for the period between 2007 and 2010. This study takes the year 2007 as a reference, which was before one of the most severe crises of world economy in 2008. We utilize the Household Budget Survey (HBS) from 2007 to 2010, published by Turkish Statistical Institute (TurkStat). The research used a national sample of 15,552 Turkish households (both rural and urban). HBS covers rich information on household socioeconomic factors such as gender, income, age, education, occupation and consumption expenditures. Data used in this study provides rich information about Turkish households' tourism consumption and simplifies to investigate the tourism consumption expenditures in economic crisis times.

Methodology

In this study, the two stage Heckman model, recommended by Alegre et al. (2013), was followed. At the first stage, we investigated the probability of tourism participation which is the choice of households whether to go on holiday or not. Equation (1) shows the households tourism participation model.

$$P_{ht} = \alpha_1 X_{ht} + \varepsilon_{it} \quad (1)$$

In this equation, the participation is affected by variables in X_{ht} with coefficient α_1 . The dependent variable is a dummy variable, which is 1 if households participate in tourism, dependent variable (P_h) takes the value of 1. In this model, X_{ht} represents the independent variables vector and ε_{it} shows error term.

The findings offer statistical support of households' tourism participation at 1% significance level. The economic theory of income/leisure trade-off posits that work and leisure time operate in connected markets. The workers choose more or less work depending on their own desires and needs and earn more or less money (income) depending on giving up an hour of leisure time (Haworth & Lewis, 2005). It is believed that there is a trade-off between the working hours and leisure. The more work means more income. However, this causes less leisure for the households. Although many households have different amount of incomes, they tend to make tourism consumption expenditures in accordance with their income. Therefore, we infer that all households are willing to participate in tourism both domestically and abroad.

At second stage, the effects of economic crisis on tourism consumption for five different household groups were estimated. Equation (2) shows the tourism consumption expenditure model as a function of the variables with a natural logarithmic form.

$$\ln Tour_{ht} = \beta_0 + \ln \beta_1 Y_{ht} + \beta_2 \ln TotExp_{ht} + \beta_3 \ln Z_{ht} + \delta iIMR_{ht} + \varepsilon_{ht} \quad (2)$$

where $Tour_{ht}$ is used as a dependent variable and defines the tourism consumption of households, Y_{ht} is the household income, $TotExp_{ht}$ is the total household expenditure with coefficients β_i and ε_{ht} is disturbance. Z_{ht} represents the vector of explanatory variables at each t , and household h , IMR_{ht} shows the inverse mill ratio. Z vector includes the variables of settlement, household size, seasonality, occupation and crisis used in the

analysis. Settlement (SET) is a dummy variable that takes the value of 1 if households live in urban areas. It is coded as 0 if the households live in rural ones. Household size (SIZE) defines the type of household in the family. There are five dummy variables in the model such as couple without children (2 households), couple with one child (3 households), couple with two children (4 households), couple with three or more children. Occupation (OCC) is defined as a dummy variable and takes the value of 1 if the households have wages or salaries. Seasonality (SEASON) is another dummy variable which has a value of 1 if households go on holiday in high season and takes the value of 0 if they go on holiday in off-season. The last dummy variable is to control the effects of 2008 crisis (CR), which takes the value of 1 if there was a crisis between the dates of 2008-2009, otherwise 0.

RESULTS

This study employs the Heckman model to investigate the causal link between socio-economic variables and tourism consumption expenditures of five group households in crisis times. All estimations were carried out in Stata 11 to estimate the effects of change in income level on tourism consumption between the dates of 2007 and 2010 and Table 2 presents the results of distribution of households' tourism consumption expenditure by quintiles ordered by income. Figures in parentheses show marginal effects and *, ** and *** defines the significance level at 10%, 5% and 1% respectively.

Which type of income group in the households reacts more to economic crises and which type changes the tourism consumption expenditures more are displayed in Table 2. The figures show that economic crisis has affected household tourism expenditures heterogeneously in Turkey. Since the model is logarithmic, the coefficients are also defined as elasticity in this study. The first income group (the poorest one) showed the highest reduction (more than 50%); whereas group 4 and 5 (the richest ones) registered a lower but remarkable increase (more than 8%).

Regarding tourism, the expenditure of domestic tourism reduced less than tourism consumption of abroad. This study reveals that economic crisis of the 2008 increased the level of uncertainty and showed a significant relationship between consumption reduction and the crisis which mostly affected low income households. We found evidence that

the poorest households cut consumption due to negative expectations of the crisis because of the reductions in consumption on leisure. The crisis had a relevant impact on tourism because reductions in spending on leisure especially for 1st and 2nd group are noteworthy.

Table 2. *Heckman two-stage model*

Heckman Model Results	Quintiles ordered by expenditure				
	1. 20%	2. 20%	3. 20%	4. 20%	5. 20%
	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile
Variables	Coefficients	Coefficients	Coefficients	Coefficients	Coefficients
Constant	1.168***	1.614***	1.846***	2.011***	2.196***
ln (Income)	-0.591(-0.523)	-0.349(-0.456)	0.006(0.041)	0.284(0.42)	0.486(0.57)
ln (Total expenditure)	-0.324***	-0.134***	0.109***	0.202***	0.359***
ln (Household size)	-0.512*(-0.256)	-0.33*(-0.129)	-0.05*(-0.087)	0.06*(0.145)	0.13*(0.242)
Tourism	-0.61***	-0.44***	-0.16***	0.08***	0.24***
Domestic	-0.53***	-0.36***	-0.04***	0.18***	0.34***
Abroad	-0.88***	-0.55***	-0.27***	0.03***	0.10***
Urban	-0.032***(0.022)	-0.023***(0.023)	0.08***(0.035)	0.09***(0.24)	0.1***(0.46)
Occupation	-0.083**(-0.024)	-0.17**(-0.27)	-0.13**(-0.97)	-0.05**(-0.13)	-0.06**(-0.18)
Season	-0.74 (-0.76)	-0.086 (-0.076)	-0.078 (-0.073)	-0.07 (-0.071)	-0.068(-0.062)
Crisis	-0.708***(-0.232)	-0.673***(-0.113)	-0.112***(-0.013)	0.086***(-0.88)	0.184***(-0.168)
Inverse Mills ratio	-0.136(0.224)	-0.046 (0.123)	0.78 (0.206)	0.124 (0.264)	0.302 (0.462)
R ²	0.393	0.402	0.387	0.312	0.456
Wald Chi Square	412.32***	408.23***	406.12***	396.12***	394.02***

Source: Author's calculations.

ln (Income) is the natural logarithm of the household income. Income sensitivity is an important tool and the aim of this study is to analyze the effects of economic crisis on tourists' expenditures. By means of Heckman model, marginal effects of income variables on tourism consumption are estimated. As Heckman model revealed that households' income is the major factor on consumption, the size of cutbacks depends on economic characteristics of households. The income elasticity of 1st income group was calculated as 0.52, which was a considerably high value and this statistic revealed that decrease in households' income would result in huge decrease in tourism consumption. Taking into account the effects of economic crisis on households' tourism consumption, it was noticed that income is the most important factor. The findings partly support that "households' income is affected by economic crisis". The crisis mostly affected low and middle income households. It was found that households with high level incomes do not decrease their tourism

consumption while households with low level incomes cut their consumption sharply. $\ln(\text{Total Expenditure})$ is the natural logarithm of the households' total expenditure. This study also investigates how households change their total expenditure subject to economic crisis. Results of the paper infer that households' total expenditure patterns change depends mainly on their budget constraint and not uniformly across goods and services.

As expected, the households' size has negative effects on low and middle income groups, but has positive relationship with the upper level (4th and 5th) income groups. The findings suggest that couples without children and couples with one child are more likely to go on holiday. On the other hand, the larger the household size is, the less tourism consumption occurs for the all household groups. The elasticity coefficient showed that increase in household's size decreased the probability of tourism consumption by nearly 25% for the 1st group.

The findings suggest that settlement has a negative relationship with tourism consumption especially for rural households, when the probability of making tourism expenditures for urban households is higher compared to rural ones. The urban households are more crisis-resistant than the rural ones, because former have many opportunities to find a job and have sustainable income due to strong labor market. When we examine the effects of economic crisis on tourism consumption, another explanation is needed as if households have salaries or wages they have a high probability for tourism consumption expenditures. Households which have salaries and wages tend to sustain tourism consumption and seem not to be affected as much.

Seasonality is an important factor for all household groups which affects the probability of tourism participation. It is known that tourism generally occurs in summer season due to annual leaves of employees and activities of tourism have become more popular at this high season. Expectedly, there is a pressure on tourism demand and therefore cost of holiday could be high.

Furthermore, the findings reveal a statistical difference in the influence of economic crisis on tourism consumption. The economic crisis has heterogeneously affected the tourism expenditure of five group households. A notable drop in consumption for the low income group has been detected. The poorest households strongly cut tourism consumption, due to the decrease in income and negative expectations.

DISCUSSION AND CONCLUSION

This study investigates the tourism participation decisions of Turkish households and then estimates the impact of economic crisis on their tourism consumption expenditures both domestic and outbound in Turkey by employing Heckman's two step approach to examine the "economic crisis" in 2008 at national level. Tourism consumption expenditures are the first and probably the most important economic effects of tourism with a vital role in economic development. Although many studies have examined the tourism demand modelling, none of the studies has investigated how households allocate their income to tourism consumption in the economic crisis times in Turkey. The research topic is very interesting and author wanted to estimate the model by using some detailed tourism data. This paper also extends literature on tourism demand by analyzing the effect of economic crisis in Turkey.

Within the framework of the model, this study attempts to examine how economic crisis affected tourism consumption behavior of Turkish households and how different household groups reacted to this crisis in the consumption levels. While answering these questions, we deal with the estimating marginal effects (income elasticity etc.) in the context of domestic and outbound tourism. Main contribution of this study is to obtain microdata from household budget surveys and tourism satellite accounts, and an analysis can be made of the behavior of households engaging in tourism expenditure and those that do not. Unlike the other studies in the literature, this study benefits from tourism satellite accounts to obtain most robust results.

Heckman model was employed and it is proved to be a reliable tool for yielding better estimations for all parameters. Current study reveals that the effects of crisis seem to be consistent with the results. Expectedly, tourism spending decreases in crisis time, but not uniformly across household groups. In other words, households with low incomes postpone their tourism participation and cut their tourism expenditures sharply. The underlying reason is that households with low levels of incomes might have limited incentives to take the time or money to go on holiday when the tourism participation is taken into account. On the other hand, due to having higher income, upper class households are more likely to continue their tourism participation when compared to households with a lower income.

Along with the income, some other variables also affect households' tourism participation decisions and tourism expenditures in

the crisis times. Results show that household income is the most important variable in tourism consumption, while seasonality is ranked at the second position. Most households prefer generally to go on holiday in high season. Another important finding is that households with salaries and wages are more likely to reduce tourism expenditure in the crisis times. We also found that urban households' tourism consumptions are higher than that of rural ones due to income differences among these two groups. Moreover, it was also found that the probability of going on holiday abroad is larger for households who live in urban areas than in rural ones. The household size is also a decisive variable for the model in this study. Results reveal that if household size increased, the probability of tourism consumption became higher.

This paper also aims to contribute to all stakeholders in the tourism sector. Firstly, it can be inferred from the paper that diversification in tourism is definitely necessary to minimize seasonality and supports tourism facilities' low occupancy rates in off-seasons with the promotion of tourist packages. In other words, there is a need to enhance international tourism mostly in the time of economic crisis. For instance, planning of some alternative tourism patterns in rural and urban places will boost tourism consumption expenditures in Turkey. Secondly, political tools of tourism such as promotion, advertising, incentives and some tax and tariff reductions or tax exemptions are necessary especially in the crisis times. If private stakeholders such as hotels and travel agencies can be well supported, they can sustain their operations without increasing their prices. Lastly, it is believed that this study will also be a guide to public sector. The mission of public sector is to encourage supply side of the tourism. It is expected that policy makers offer the price and promotion strategies taking the low and middle income level of households into consideration. They can help private firms via financial and tax instruments to set optimum pricing for their services.

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