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DETERMINANT FACTORS OF TOURIST EXPENSES

ABSTRACT

The objective of this article is to analyze travel expenses across and within types. The empirical application examines the determinant factors of total expenses, controlling for potential endogeneity, and relies on quantile regression to analyze the effects of information search behavior on the distribution of total expenses as well as accommodation, shopping, food and beverages, and local transportation expenses. The role of information sources in predicting travel spending behaviors is a new dimension in the literature on expenses, and a sample of 48,113 travelers has led to the detection of effects of variables with relevant managerial implications (for example, while official information centers show positive impacts at the upper levels of accommodation expenses, they present null effects at the highest levels of shopping expenses) as well as theoretical implications (special attention should be drawn to the variable length of stay which, after being controlled by endogeneity, completely loses its significance).

Keywords: expenditures; travel decisions; Heckit model; quantile regression; endogeneity.

Introduction

Tourist expenditure provides a substantial contribution to economic growth at the national and regional levels (Marrocu, Paci, and Zara, 2015). For example, the World Travel and Tourism Council (WTTC, 2015) reported that the direct contribution of travel and tourism to the gross domestic product (GDP) in South Korea was 2.0% in 2014 and is expected to rise by 2.9% per annum between 2015 and 2025. In terms of total contribution—direct and indirect—income generated from travel and tourism is estimated to be 5.8% of the GDP in 2014 and is forecast to reach 6.0% in 2025 (WTTC, 2015).

The study of tourist expenditure is crucial because "tourism is an expenditure-driven economic activity" and "the consumption of tourism is at the center of the economic measurement of tourism and the foundation of its economic impacts" (Mihalic, Sharpley, and Telfer, 2002, p. 88), which helps to clarify the gross added value that destinations generate (Eugenio-Martin and Campos-Soria, 2014; Eugenio-Martin and Inchausti-Sintes, 2016). In particular, identifying the factors that affect tourist consumption behaviors and estimating the effect of these factors on tourist expenditure patterns are of the utmost importance. From the destination marketing perspective, this knowledge could help to discern "profitable tourists," who stay relatively longer and spend more during their trips, and to develop effective marketing strategies and policies contingent on viable market segmentations (Nicolau and Mas, 2005; Lin, Mao, and Song, 2015).

While macroeconomic approaches provide global understanding of tourist expenditure patterns (Jang and Ham, 2009; Wu, Zhang, and Fujiwara, 2013; Lin et al., 2015; Serra, Correia, and Rodrigues, 2015; Konstantakis, Soklis, and Michaelides, 2017), these aggregated expense analyses do not fully consider product-specific issues (Laesser and Crouch, 2006). Moreover, the aggregation of macrodata averages out individual idiosyncrasies, and thus provides less valuable information to tourism marketers (Wang and

Davidson, 2010a). Today, analyzing microdata by examining individual consumption is clearly needed, which allows consideration of the diversity and heterogeneity of travel behaviors and preferences (Lin et al., 2015). Furthermore, with regard to the nature of tourism, it is vital to consider many facets of travel decisions because travel is not a single product but a number of interrelated subproducts (Fesenmaier and Jeng, 2000).

Indeed, travelers are required not only to make a destination decision but also to arrange numerous subset decisions, such as accommodation, restaurants, and transportation (Park, Nicolau, and Fesenmaier, 2013). It becomes evident that, on account of the different nature of these subdecisions, a particular determinant factor is not expected to show the same effect on all of them (across expense-category analyses). Moreover, that determinant factor may have varying impacts on a specific expenditure type, depending on its level (within expense-category analysis). Consequently, the effect of prices can be different between accommodation and restaurants, but it can vary within accommodation as well, depending on whether the level of expenditures in accommodation is high or low. Accordingly, this paper uses four sets of determinant factors (demographics, tripographics, prices, and information sources) with the objective to explain, first, their effects on the total amount of tourist expenditure; and second, the varying effects of these information sources on expenses for accommodation, shopping, food and beverages (F&B), and local transportation (Park et al., 2013). The use of information search behavior fills a gap in the literature on expenses.

Determinant factors of tourism expenses

The effects of the determinant factors on purchasing behaviors can vary across and within many facets of a trip because travel decisions have distinct levels of complexity (Nysveen, 2003) and flexibility (or centrality) (Fesenmaier and Jeng, 2000) that are contingent on the products or services involved, shaping the traveler's engagement and/or

commitment to planning the decisions (Park and Fesenmaier, 2014). Consequently, the dimensions that lead consumers to purchase specific travel products vary according to the product type (accommodation, restaurant, etc.). Expense is a dimension in which this variability can be notably evidenced as it is a manner whereby tourists show their consumption patterns quantitatively.

Across expense-type analysis. Considering the different nature of the aforementioned subdecisions, the ease or complexity on which people base their expenditure decisions—for example, accommodation and theater tickets—changes substantially as not only does the amount of money required vary, but so does the duration of the service (two hours of dissatisfaction in the theater can be less painful and easier to recover from than two days of dissatisfaction during a stay in a hotel). Therefore, the factors that have a significant impact on the level of expenses may vary from one decision to another as well as the size, if any, of such impact.

Within expense-type analysis. The determinant factors may also have varying effects on a specific expense type, depending on whether its cost is high or low. In other words, the determinant factors may have a non-constant effect on the distribution of a specific expense type, in such a way that a factor may have a null effect at one region of the distribution (e.g., the lowest level of expenses) and a positive (or negative) effect in another part (e.g., the highest level of expenses). To analyze these varying effects, we focus on the variable "information search behavior," whose role in predicting travel spending behaviors is a new dimension used in the analysis of the determinants of expenditure.

Determinant factors. To carry out analyses across and within expense-types, according to the literature, four sets of determinant factors are investigated—demographics, tripographics, prices, and information search behavior (Wang, Rompf, Severt, and

Peerapatdit, 2006; Brida and Scuderi, 2013). It is important to note that the relevant literature offers inconsistent empirical evidence for the influence of sociodemographic and trip-related characteristics on tourist expenditure (Wang and Davidson, 2010a). The consideration of information-search behavior has been largely limited in understanding expenditure patterns, although it has been recognized as a crucial aspect of travel decision-making behaviors (Choi, Lehto, Morrison, and Jang, 2012). The following paragraphs discuss these four categories of determinants: sociodemographics (age and income), tripographics (type of travel arrangement, length of stay, visit to additional destinations, purpose of trip, travel companions, and type of accommodation), prices, and information search behavior (types of information sources).

Regarding sociodemographic characteristics, age is regarded as a vital demographic dimension in explaining travel behaviors and expenditure (Pearce, 2013). The findings of previous studies examining the relationship between age and travel expenditure do not seem to be consistent. On the one hand, age has a significant influence on travel expenditure. Either old travelers are more likely to overspend than relatively young travelers (Thrane, 2002; Jang, Bai, Hong, and O'Leary, 2004), or tourist expenditure declines with age (Dardis, Derrick, Lehfeld, and Wolfe, 1981; Mok and Iverson, 2000). Jang and Ham (2009) attribute the different behavioral patterns of travel expenditure to the social and political environments people experienced between temporal generations. Another group of studies indicates that the age variable does not affect the trip budget (Chhabra, Sills, and Rea, 2002; Wu et al., 2013). Walsh, John, McKean, and Hof (1992) demonstrate a nonlinear relationship where middle-aged travelers are more likely to spend more on their travel expenditure than young and old travelers (i.e., a concave relationship).

Level of income. The literature regards income as a personal budget restriction that conditions people's purchasing capacity (Crawford and Godbey, 1987; Marrocu et al., 2015)

such that higher income levels bring about higher consumption levels (Davis and Mangan, 1992; Middleton, 1994). Information on income is not always available—as is the case for this article—so two standard proxies are used in the literature (Fleischer and Felsenstein, 2004; Marcussen, 2011): occupation and education. Regarding occupation, it might reflect social class (Wang et al., 2006), so it would be expected that travel expenditure would increase with the level of occupational prestige (Hong, Morrison, and Cai, 1996). In other words, white-collar professionals are likely to spend more on trips than other types of occupations in general (see Jang et al., 2004). The literature also finds a positive relationship between education and expenses (Parker, 1976; Nicolau and Mas, 2005).

Concerning tripographics, the following variables are considered to have an effect on travel expenditure (Abbruzzo, Brida, and Scuderi, 2014):

Types of travel arrangement. Thanks to the development of information technology, travelers have many different channels to book travel products. The advancement of online travel agencies (e.g., Expedia and Booking.com), in particular, enables individuals to organize the journey themselves. Alternatively, tour operators offer dynamic travel packages so that travelers facilitate managing diverse facets of the entire trip (Money and Crotts, 2003). These various types of booking methods lead to different levels of travel expenditure (Brida and Scuderi, 2013). Accordingly, travelers who organize their entire trip with tour operators tend to spend more than those who do not make any reservations in advance and reserve partial elements of the trip (e.g., transportation and accommodation) (Perez and Juaneda, 2000).

Length of stay. Duration of stay is regarded as one of the crucial elements determining travel expenditure. The longer travelers stay at the destination, the greater amount of the total budget is spent (Mok and Iverson, 2000; Jang et al., 2004; Wang et al., 2017). One reason is that people who stay longer at hotels are more likely to order food and beverages and obtain

transportation services and entertainment activities (Downward and Lumsdon, 2004; Driml et al., 2017; Vu et al., 2017). In contrast, Thrane and Farstad (2011) indicate that in domestic travel, the positive magnitude declines as the length of stay increases. Some studies also identify a nonlinear relationship between length of stay and travel spending. Roehl and Fesenmaier (1996), for instance, demonstrate a diminishing positive effect of length of stay on expenditures, which, at a certain duration point, becomes negative.

Number of destinations. Many vacations include multiple destinations or touring in nature (Lue, Crompton, and Fesenmaier, 1993). Given that current travelers have greater mobility, they often visit more than one destination. The relevant studies found that travelers who visit multiple destinations tend to be higher spenders than those going to a single destination (Wang and Davidson, 2010b). It is recognized that travelers can achieve variety in their travel experiences by visiting multiple destinations, enhancing individual levels of arousal (Lue et al., 1993). Thus, the patterns of travel behavior and spending would be different between travelers with a single destination and those with multiple destinations.

Purpose of trip. Laesser and Crouch (2006) propose a segmentation method using travel expenditure patterns and identify heterogeneity in travel purposes across the segmented groups. Travel purpose inherently represents travelers' needs and motivations when visiting a destination. As a result, the different purposes shape different amounts of expenditure to achieve the desired levels of satisfaction (Serra et al., 2015). Laesser and Crouch's study (2006) finds that travelers whose main purpose is attending a conference at the destination appear to have relatively higher expenditure. In contrast, travelers visiting friends and relatives (VFR) spend less compared to general leisure travelers. Other tourism studies demonstrate consistent results which show that business travelers tend to spend almost twice as much as VFR travelers (Jang, Yu, and Pearson, 2003). When focusing on specific shopping expenditure, however, the opposite pattern is identified. Leisure travelers have the

highest shopping expenditure, followed by VFR and business travelers (Lehto, Cai, O'Leary, and Huan, 2004).

Travel companions. Since travel is often a highly social event, travel companions play an important role in determining not only travel behaviors but also expenditure (Gitelson and Kerstetter, 1995; Park and Fesenmaier, 2014). Several approaches can be used to assess the composition of travel groups, such as party size, presence of companion, number of adults and children (Wang and Davidson, 2010), and the specific composition of a travel party (Serra et al., 2015). The literature appears to show heterogeneous results according to the different measurements used and specific travel context investigated (inbound vs. outbound travelers). For example, Wang et al. (2006) show the positive effect of number of adults on travel expenditure, while Jang et al. (2004) demonstrate the unimportance of travel party size (Wu et al., 2013). A negative sign of travel party size is associated with the travel budget per person (Mok and Iverson, 2000). Serra et al. (2015) examine the arrangement of travel groups and conclude that family travelers spend more on travel expenditures than other types, including people who travel alone or with friends.

Types of accommodation. The analysis of accommodation types is important at certain destinations, such as South Korea, that involve diverse forms of accommodation. Previous literature consistently shows that travel expenditure varies depending on the type of accommodation. Agarwal and Yochum (1999) indicate that hotel accommodation is associated with higher expenditure compared to other accommodations, such as cottages, camping sites, and condos or apartments. This proposition is consistent with the results of other travel studies (e.g., Nicolau and Mas, 2005; Laesser and Crouch, 2006; Marrocu et al., 2015), implying that relatively higher room rates in hotels are linked with higher travel expenditure.

Prices. The generalized finding in the literature on prices shows that the demand for tourism products behaves as an *ordinary good*, so that price increases reduce consumption (Smith, 1995). As Morrocu et al. (2015) indicate, observing specific prices for tourism products is not always feasible. However, considering the international character of this research, it seems to be appropriate to follow Eymann and Ronning's (1992) proposal, which puts forth that the adequate procedure to show the prices of a tourist market is to observe destination prices vis-à-vis the home market's prices. Accordingly, these authors employ purchase parity differentials between the origin and respective destinations, measured by the corresponding consumer price indexes.

Information search. Finally, the information search-related factor is expressed as an information source. The information sources used by travelers represent information search strategy, inherently characterizing the information environment (Fodness and Murray, 1998). Evidence has been found for systematic relationships between information search strategies and individual and situational characteristics of the travelers (Choi et al., 2011; David-Negre et al., 2018; Inuma et al., 2018; Park, Wang, and Fesenmaier, 2011; Van der Zee and Bertocchi, 2018). More pertinently, several researchers explore the link between information search behaviors and travel outcomes, including trip expenditure (Kambele, Li, and Zhou, 2015). Murphy and Olaru (2009) classify travelers according to their information foraging strategies: (1) sharks, who are active and have high information needs and (2) spiders, who are passive and mostly rely on personal experience. Based upon information foraging theory (Pirolli and Card, 1999), the difference is equivalent to a well-recognized distinction in behavioral ecology between widely-foraging predators, such as sharks, and sit-and-wait foragers, such as spiders. The former voraciously seeks a wide range of information sources and contents, while the latter wanders a few convenient sources.

As expected, the study by Murphy and Olaru (2009) shows that travelers categorized as sharks are likely to use more varied and up-to-date sources of information than those categorized as spiders. In terms of travel behaviors, the shark group tends to have larger travel budgets than the spider group. Consistently, different levels of entertainment expenditure are recognized according to different clusters that use different information search strategies. Travelers who visit the local tourist office or check travel guides tend to spend more than other groups (Fodness and Murray, 1999).

Apart from examining the search strategy, some studies investigate the associations of specific information sources used to reach travel outcomes. The results show that travelers who use the Internet to obtain information are likely to incur higher spending than those who utilize other sources (e.g., destination sources, travel agents, and recommendations from friends/relatives) (Luo, Feng, and Cai, 2005). Also, travel expenditure increases when TV is used as a main information source as opposed to not considering information from TV (Taylor, Fletcher, and Clabaugh, 1993).

Methodology

Data analysis

To carry out the analysis of the determinants of total expenses, we apply different estimation procedures: ordinary least squares (OLS), two-stage least squares (2SLS), the Heckit model, and quantile regression (QR). We start by getting the most basic estimates via OLS. In particular, the following standard linear relation is formulated:

$$ln(y_i) = \alpha + \sum_k \beta_k DC_{ki} + \sum_k \gamma_k TRC_{ki} + \sum_k \delta_k ISB_{ki} + \theta Price_i + \varepsilon_i$$

where y_i is the expenses per person (we apply the log-transformation so that the resulting parameters are directly interpreted as semi-elasticities), α is a constant term, β_k is the coefficient of the *k-th* independent variable related to demographic characteristics DC_{ki}, γ_k is the coefficient of the *k-th* independent variable associated with trip-related characteristics

TRC_{ki}, δ_k is the coefficient of the *k-th* independent variable related to information search behavior ISB_{ki}, θ is the coefficient of the price-related variable $Price_i$, and ε is an error that follows a normal distribution.

On estimating this model, however, a potential endogeneity issue might arise, as the causality of the decisions "how much to spend," "how long to stay," and "where to stay" is not straightforward. To handle this potential endogeneity, we resort to the two-stage least squares (2SLS) regression to explicitly deal with the variable "length of stay" and the Heckit model to control for the potential effect of "accommodation type" on other variables. The 2SLS estimation requires the use of instrumental variables. In line with Thrane (2015), the variable length of stay can be instrumented via "number of previous visits to the destination" and "level of satisfaction".

As for the Heckit model, we split the consumer choice process into the "expense decision" and the "accommodation decision", so that the model takes the following form:

$$d_i * = \alpha + \sum_k \beta_k DC_{ki} + \sum_k \gamma_k TRC_{ki} + \sum_k \delta_k ISB_{ki} + \theta Price_i + u_i$$

$$ln(y_i) = \alpha + \sum_k \beta_k DC_{ki} + \sum_k \gamma_k TRC_{ki} + \sum_k \delta_k ISB_{ki} + \theta Price_i + \varepsilon_i \quad \text{observed only if } d_i*>0$$

where the disturbances u_i and ε_i follow a bivariate normal distribution with a zero mean, variances σ_u and σ_ε respectively, and covariance $\sigma_{\varepsilon u}$. d_i is a dichotomic variable, which takes a value of one when the latent variable $d_i*>0$, and a value of zero when $d_i*<0$. In this way, $d_i=1$ indicates the decision to stay in a hotel and $d_i=0$ in any other type of accommodation. We use maximum likelihood to estimate the model.

Finally, we use quantile regression to enrich the results and find out whether the effect of the determinant factors is constant over the range of the dependent variable (expenses), or varies depending on the level of expenses. In particular, we will focus on information search behavior, which represents one of this article's main contributions to the literature. In this

way, we test the potential differentiated effects of each characteristic over the distribution of the variable "overall expenses," along with "accommodation," "shopping," "food and beverages," and "local transportation."

The advantage of QR over OLS is that the former attempts to model the conditional mean of the dependent variable, while the latter tries to model the conditional τth quantile of the dependent variable, being $\tau \in (0, 1)$. It is standard in the literature that the 10th, 25th, 50th, 75th, and 90th quantiles are estimated, as it encompasses the whole distribution of the variable (Marrocu et al., 2015). Thus, QR permits the detection of potential varying impacts of "information sources" (that capture the information search behavior) on the whole range of the variable "expenses".

Data collection

A series of surveys was used to collect data representing the behaviors of international travelers who visited South Korea from 2011 to 2014. The subjects were over 18 years old and stayed in South Korea for more than a day and less than a year. Four international airports, including Incheon, Gimpo, Gimhae, and Jeju Island, as well as two international harbors (Incheon and Busan), were selected to contact the respondents at the end of their trips. This study utilized stratified sampling method according to origin destinations. Specifically, after identifying international visitors across countries in previous years, the target number of samples for each country could be calculated at a confidence level of 95%. Furthermore, to control for the seasonality effect, the data collection was made over all twelve months consistently with about 1,000 respondents across four years. As a result, the total number of respondents used in this data analysis was 48,113, consisting of 12,038 in 2011; 12,021 in 2012; 12,030 in 2013; and 12,024 in 2014. Tables 1 and 2 show the descriptive statistics of the sample for the categorical and continuous variables, respectively.

[Insert Tables 1 and 2 around here]

Measurements

There were two sections in this visitor survey. The first part asked the international travelers about their behaviors while visiting South Korea: types of travel arrangement (independent or package tour), length of stay, number of destinations (just visiting South Korea or visiting other destinations), purpose of trip (participants were asked to choose up to three of the following purposes: leisure, recreation, and holiday; health, medical treatment; religion or pilgrimage; shopping; VFR; business or professional activities; and education), information sources (participants could choose the three sources they relied on the most: travel agencies, relatives and friends, the Internet, traveler's guides, media, tourist offices, airlines, or hotels), travel companion (alone, family and relatives, friends, coworkers, and others), types of accommodation (hotel, guesthouse, condominium, family/relatives, school/dormitory, temple, and other), (Yoon and Shafer, 1997; Park et al., 2013) and travel expenditures (accommodation, shopping, food and beverages, local transportation, entertainment, expenses in travel agencies in Korea, cultural activities, and sports activities) (Wang et al., 2006; Abbruzzo et al., 2014). The last part includes demographic questions, such as age, educational level, and occupation. As for prices, in keeping with Eymann and Ronning (1992), we use consumer price index differentials among home markets and destinations, published by the World Bank, which show the cost of living in each place of origin and destination.

Results

Profiles of respondents

Over half of respondents are 40 years or below and have obtained college/university degrees. The distribution of occupation and nationality shows that the sample covers all the categories with no particular bias toward a specific category. Regarding travel characteristics, 73% of travelers made individual trips and 88% of them visited only Korea. In terms of information sources, as expected, Internet has been recognized as the most frequently used source (see Table 1).

[Please insert Table 1 about here]

Table 2 shows the sample size and mean/standard deviation of the continuous variables use: total travel expenses as well as four different travel facets along with consumer price index differentials, number of visits, and overall travel satisfaction.

[Please insert Table 2 about here]

Model Estimation

Before estimating the models, the potential existence of collinearity is tested. Two variance inflation factors (VIF) are larger than the recommended value of 10 (Neter et al., 1989; Hair et al., 1995): “health, medical treatment” and “religion or pilgrimage”. As both items represent a very small proportion of the sample (1% and 0.8%, respectively), we have integrated them into the reference alternative. After confirming that all VIFs are still below 10, we proceed with the estimation of the models.

Table 3 shows the results of the four models estimated: OLS, 2SLS, Heckit,[1] and QR. According to the procedure outlined in the methodology section, in order to guarantee that the parameters are not affected by endogeneity, we rely on those parameters that are significant in all models and have the same sign.

[Please insert Table 3 about here]

Regarding occupation, "self-employed" and "student" have a positive effect (the largest) and a negative effect (the smallest) respectively, compared to the alternative reference ("other"). Concerning education, "college" and "graduate school" have a significant and positive impact in comparison with "other." As proxies for income, both variables show that income has, as expected, a positive impact on expenditures.

As for countries, China, Singapore, Taiwan, Malaysia and Saudi Arabia present positive and significant parameters, while Japan shows a negative and significant parameter compared to the alternative "other."

Regarding length of stay, it is important to comment on this variable as it has been instrumented to control for endogeneity. Interestingly, while in all other models it is significant, when the 2SLS estimation is applied, its size is reduced and its significance disappears. This reduction in size is in line with the results obtained by Thrane (2015), as the other models do not control for endogeneity, and consequently, attribute the whole effect of length of stay on expenses to this variable.

"Visiting only Korea"—compared to visiting multiple destinations—leads to greater total expenses as the parameter is positive and significant. This result is contrary to the existing empirical results (Wang and Davidson, 2010b); it seems that, for the same number of

[1] For the sake of space, only the response equation that analyzes the expenses is shown. The selection equation is available upon request to the authors.

days, tourists tend to spend more if they only visit Korea. Considering the distinction between vacationers (who remain in one destination during their vacation in order to "experience" in detail the characteristics of the place) and sightseers (who visit various destinations in order to see, on a superficial level, their main sights), it seems that the former try to make the most of the destination, which leads to higher expenses.

Regarding purposes of trip, the top spenders in total expenses are those whose purposes are "leisure, recreation, and holiday" and "shopping" compared to the reference "other," and those who "visit friends and relatives" and do "business or professional activities" spend less than "others," in line with the results of Jang et al. (2003). Concerning travel companions, when traveling with family and relatives and with friends, people tend to spend more; conversely, traveling alone or with a coworker leads to lower total expenses. This outcome is in line with Wang et al. (2006) and Serra et al. (2015).

In total expenses, active information search is generally associated with greater spending; that is, "sharks" spend more than "spiders," in line with the terminology and results found by Murphy and Olaru (2009). In other words, travelers who use up-to-date information sources incurred more travel expenditure than those who sought other sources (Luo et al., 2004).

The consumer price index differential is significant and positive, so when the country of origin has higher prices, people tend to spend more in Korea, which is in accordance with the prevailing negative relationship between price and demand (Smith, 1995).

Table 4 shows the effects of information sources on total expenses per person and Table 5 on accommodation, shopping, F&B and local transportation, which are QR parameters estimated at the 10th, 25th, 50th, 75th, and 90th quantiles. These tables show the significance of each quantile parameter for the information sources.

[Please insert Tables 4 and 5 about here]

Regarding total expenses, it is observed, with no exception, that the effect of any information source at the low level of expenses is higher than the reference variable "other," and at high levels of expense it is lower than this reference variable. This decrease in the size of the effect might become null for the top level of expenses, as in "media," or even negative, as in "relatives and friends" and "traveler's guides." Note that "airlines and hotels" as information sources have no effect on the lower levels of expenses and an increasing negative effect on higher levels of expenses.

Concerning expenses for accommodation, different patterns are found depending on the level of expenses. While travel agencies, relatives and friends, and traveler's guides have positive effects at the middle levels of expenses, their effects become negative at the upper levels (75^{th} and 90^{th} quantiles). In fact, only the Korean office (or information center) and hotels show positive and significant parameters at these upper levels. As for expenses on shopping, a general decreasing effect is found as the level of expenses rises. It is interesting to see that traveler's guides and the Korean office have negative and null effects, respectively, at the top level of expenses. For F&B, the sources associated with higher expenses seem to be relatives and friends, with positive parameters for the 50^{th}, 75^{th} and 90^{th} quantiles. It is relevant to note that the internet, traveler's guides, media, and the Korean office have positive effects at the middle levels of expenses but null or negative impacts at the top level. Regarding expenses for local transportation, all sources except for travel agencies have positive effects at the upper levels of expenses. Airlines and hotels have no significant effects.

Discussion and Conclusions

Given that recognizing the importance of tourism to local economies and understanding expenditure behaviors of international travelers are crucial for tourism business and destination marketing organizations (Lin et al., 2015), this study analyzes expenditure patterns of a sample of 48,113 international travelers who visited South Korea between 2011 and 2014. To increase the generalizability of the findings, a stratified sampling method based on original destinations and a controlled seasonality effect with consistent numbers of survey responses across twelve months are applied.

According to the methodology used that attempts to consider potential endogeneity, the determinant factors that have a positive effect on expenditures are occupation (self-employed); education (college and graduate schools); originating from China, Singapore, Taiwan, Malaysia or Saudi Arabia; visiting Korea only, trip purposes ("leisure, recreation, and holiday" and "shopping"), traveling with family and relatives and with friends, information sources, and consumer price index differential.

Regarding the quantile regression estimates, the fact that a diversity of effects is found for a particular variable depending on the level of expenses implies that the use of quantile regression is relevant to detecting potential intricacies in the determinants of expenses. This article has focused on information search behavior, whose role in predicting travel spending behaviors analyzed in the application represents new possibilities for analyzing the determinants of expenditure. The analysis has found that, for total expenses, a decreasing effect occurs over the distribution of the variable expenses, with higher effects at the low levels of expense and lower impact at the high levels. For the specific expenses analyzed, some interesting results are found: for example, while the Korean office shows positive and significant parameters at the upper levels of accommodation expenses, it presents null effects at the top levels of shopping expenses. Even more intricate are the cases of traveler's guides

and media that show positive, negative or null effects at the top level of expenses depending on the specific *type* of expenses. In particular, traveler's guides have null effects on accommodation, negative effects on shopping and F&B, and positive effects on local transportation. Media has a null impact on accommodation, a positive impact on shopping and local transportation, and a negative impact on F&B.

As for theoretical implications, special attention should be drawn to the variable length of stay which, after controlling for endogeneity, loses its significance. While some previous literature has tackled this issue, this empirical result reinforces the idea that controlling for endogeneity is not a minor issue. It is not a mere reduction in the size of the effect but a complete cancellation of the effect.

As for managerial implications, several issues can be considered: i) for destination marketing organizations, policies that favor a general pattern of expenditures can be misleading if they do not consider that the same variable can have different effects on tourist expenses, depending on the product or service purchased. This is illustrated by the aforementioned cases of the Korean office, traveler's guides and media; ii) similarly, for DMOs and decision-makers in tourism firms, a specific variable not having the same effect over the range of the variable expenditures opens up new courses of action for segmentation, as heavy and light spenders are influenced differently by their information search behavior (remember that the effect of the information sources at low levels of expense is higher than at high levels of expense).

Several limitations of this study could be addressed in future research. While this research examines a variety of factors reflecting travel behaviors, some others would also be relevant, such as perceptions and motivations as well as other sensorial external effects such as the impact of weather on expenditures (Wilkins et al., 2017). The analysis conducted on firms—rather than destinations—would allow the detection of different effects across types

of firms; for example, a hotel with different levels of service for specific types of rooms might find (and quantify) that a change in a specific variable may have distinct impacts on expenditures, depending on the level of those expenditures.

References

Abbruzzo, A., J. G. Brida, and R. Scuderi. 2014. "Determinants of Individual Tourist Expenditure as a Network: Empirical Findings from Uruguay." *Tourism Management* 43: 36-45.

Agarwal, V. B., and G. R. Yochum. 1999. "Tourist Spending and Race of Visitors." *Journal of Travel Research* 38(2): 173-76.

Bieger, T., and C. Laesser. 2004. "Information Sources for Travel Decisions: Toward a Source Process Model." *Journal of Travel Research* 42(4): 357-71.

Brida, J. G., and R. Scuderi. 2013. "Determinants of Tourist Expenditure: a Review of Microeconometric models." *Tourism Management Perspectives* 6: 28-40.

Chhabra, D., E. R. I. N. Sills, and P. H. I. L. I. P. Rea. 2002. "Tourist Expenditures at Heritage Festivals." *Event Management* 7(4): 221-30.

Choi, S., X. Y. Lehto, A. M. Morrison, and S. Jang. 2012. "Structure of Travel Planning Processes and Information Use Patterns." *Journal of Travel Research* 51(1): 26-40.

David-Negre, T., Almedida-Santana, A., Hernández, J.M. et al. (2018), Understanding European tourists' use of e-tourism platforms. Analysis of networks, *Information Technology & Tourism*, 20 (1–4), pp 131–152. doi.org/10.1007/s40558-018-0113-z

Dardis, R., F. Derrick, A. Lehfeld, and K. E. Wolfe. 1981. "Cross-Section Studies of Recreation Expenditures in the United States." *Journal of Leisure Research* 13(3): 181-94.

Downward, P., and L. Lumsdon. 2000. "Beyond the Demand for Day-Visits: an Analysis of Visitor Spending." *Tourism Economics* 6(3): 251-61.

Driml, S., Ballantyne, R. and Packer, J. 2017. "How Long Does an Economic Impact Last? Tracking the Impact of a New Giant Panda Attraction at an Australian Zoo." *Journal of Travel Research*, forthcoming.

Eugenio-Martin, J. L., and J. A. Campos-Soria. 2014. "Economic Crisis and Tourism Expenditure Cutback Decision." *Annals of Tourism Research* 44: 53–73

Eugenio-Martin, J. L., and F. Inchausti-Sintes. 2016. "Low-Cost Travel and Tourism Expenditures." *Annals of Tourism Research* 57: 140–59.

Eymann, A. & Ronning, G. 1992 "Discrete Choice Analysis of Foreign Travel Demand" in Vosgerau, H.J., ed., *European Integration in the World Economy. Studies in International Economics and Institutions*, Berlin: Springer.

Fesenmaier, D. R., and J. M. Jeng. 2000. "Assessing Structure in the Pleasure Trip Planning Process." *Tourism analysis* 5(1): 13-27.

Fleischer, A. and Felsenstein, D. 2004, "Face-to-face or cyberspace? Choosing the Internet as an intermediary in the Israeli", *Tourism Economics*, 10(3): 345–359.

Fodness, D., and B. Murray. 1998. "A Typology of Tourist Information Search Strategies." *Journal of Travel Research* 37(2): 108-19.

Fodness, D., and B. Murray. 1999. "A Model of Tourist Information Search Behavior." *Journal of Travel Research* 37(3): 220-30.

Gitelson, R., and D. Kerstetter. 1995. "The Influence of Friends and Relatives in Travel Decision-Making." *Journal of Travel & Tourism Marketing* 3(3): 59-68.

Grigolon, A., A. Kemperman, and H. Timmermans. 2013. "Facet-Based Analysis of Vacation Planning Processes: A Binary Mixed Logit Panel Model." *Journal of Travel Research* 52(2): 192-201.

Hong, G. S., A. M. Morrison, and L. A. Cai. 1996. "Household Expenditure Patterns for Tourism Products and Services." *Journal of Travel & Tourism Marketing* 4(4): 15-40.

Hu, B., and A. M. Morrison. 2002. "Tripography: Can Destination Use Patterns Enhance Understanding of the VFR Market?" *Journal of Vacation Marketing* 8(3): 201-20.

Iinuma, S., Nanba, H. & Takezawa, T. Inf Technol Tourism (2018). Investigating the effectiveness of computer-produced summaries obtained from multiple travel blog entries, *Information Technology & Tourism*, doi.org/10.1007/s40558-018-0132-9

Jang, S. S., and S. Ham. 2009. "A Double-Hurdle Analysis of Travel Expenditure: Baby Boomer Seniors Versus Older Seniors." *Tourism Management* 30(3): 372-80.

Jang, S. S., B. Bai, G. S. Hong, and J. T. O'Leary. 2004. "Understanding Travel Expenditure Patterns: A Study of Japanese Pleasure Travelers to the United States by Income Level." *Tourism Management* 25(3): 331-41.

Jang, S., L. Yu, and T. Pearson. 2003. "Chinese Travellers to the United States: A comparison of business travel and visiting friends and relatives." *Tourism Geographies* 5(1): 87-108.

Kambele, Z., G. Li, and Z. Zhou. 2015. "Travelers' Information-Seeking Behaviors." *Journal of Travel & Tourism Marketing* 32(1-2): 141-52.

Koenker, R., and G. Bassett Jr. 1978. "Regression Quantiles." *Econometrica: Journal of the Econometric Society* 33-50.

Konstantakis, K. N., G. Soklis, and P. G. Michaelides. 2017. "Tourism Expenditures and Crisis Transmission: A General Equilibrium GVAR Analysis with Network Theory" *Annals of Tourism Research* 66: 74–94.

Laesser, C., and G. I. Crouch. 2006. "Segmenting Markets by Travel Expenditure Patterns: The Case of International Visitors to Australia." *Journal of Travel Research* 44(4): 397-406.

Lehto, X. Y., L. A. Cai, J. T. O'Leary, and T. C. Huan. 2004. "Tourist Shopping Preferences and Expenditure Behaviours: The Case of the Taiwanese Outbound Market." *Journal of Vacation Marketing* 10(4): 320-32.

Lin, V. S., R. Mao, and H. Song. 2015. "Tourism Expenditure Patterns in China." *Annals of Tourism Research* 54: 100-17.

Lue, C. C., J. L. Crompton, and D. R. Fesenmaier. 1993. "Conceptualization of Multi-destination Pleasure Trips." *Annals of Tourism Research* 20(2): 289-301.

Luo, M., R. Feng, and L. A. Cai. 2005. "Information Search Behavior and Tourist Characteristics: The Internet vis-à-vis Other Information Sources." *Journal of Travel & Tourism Marketing* 17(2-3): 15-25.

Marcussen, C.H. 2011, "Determinants of tourist spending in crosssectional studies and at Danish destinations", *Tourism Economics*, 17(4): 833–855.

Marrocu, E., R. Paci, and A. Zara. 2015. "Micro-Economic Determinants of Tourist Expenditure: A Quantile Regression Approach." *Tourism Management* 50: 13-30.

Mihalic, T. A. N. J. A., R. Sharpley, and D. J. Telfer. 2002. *Tourism and economic development issues* (pp. 81-111). Channel View Publications.

Mok, C., and T. J. Iverson. 2000. "Expenditure-Based Segmentation: Taiwanese Tourists to Guam." *Tourism Management* 21(3): 299-305.

Money, R. B., and J. C. Crotts. 2003. "The Effect of Uncertainty Avoidance on Information Search, Planning, and Purchases of International Travel Vacations." *Tourism Management* 24(2): 191-202.

Murphy, J., and D. Olaru. 2009. "How Information Foraging Styles Relate to Tourism Demographics and Behaviours." *Journal of Vacation Marketing* 15(4): 299-309.

Nicolau, J. L., and F. J. Mas. 2005. "Heckit Modelling of Tourist Expenditure: Evidence from Spain." *International Journal of Service Industry Managemen*t 16(3): 271-93.

Nysveen, H. 2003. "The Importance of Risk-Reducing Value-Added Services in Online Environments: An Exploratory Study on Various Segments of Leisure Tourism." *Information Technology and Tourism* 6: 113-27.

Park, S., and D. R. Fesenmaier. 2014. "Travel Decision Flexibility." *Tourism Analysis* 19(1):

35-49.
Park, S., J. L. Nicolau, and D. R. Fesenmaier. 2013. “Assessing Advertising in a Hierarchical Decision Model.” *Annals of Tourism Research* 40: 260-82.
Park, S., D. Wang, and D. R. Fesenmaier. 2011. “Assessing Structure in American Online Purchase of Travel Products.” *Anatolia 22*(3): 401-17.
Parker, W.M. 1976. *The Sociology of Leisure.* George Allen & Unwin, London.
Pearce, P. L. 2013. *The social psychology of tourist behaviour: International Series in Experimental Social Psychology* (Vol. 3). Elsevier.
Pirolli, P. and S. Card 1999. "Information Foraging." *Psychological Review* 106(4): 643-675.
Perez, E. A., and S. C. Juaneda. 2000. “Tourist Expenditure for Mass Tourism Markets.” *Annals of Tourism Research* 27(3): 624-37.
Roehl, D. W. S., and D. R. Fesenmaier. 1996. “Modelling the Influence of Information Obtained at State Welcome Centers on Visitors Expenditures.” *Journal of Travel & Tourism Marketing* 4(3): 19-28.
Serra, J., A. Correia, and P. M. Rodrigues. 2015. “Tourist Spending Dynamics in the Algarve: a Cross-Sectional Analysis.” *Tourism Economics* 21(3): 475-500.
Smith, S.L.J. (1995). *Tourism Analysis: A Handbook*, United Kingdom: Longman Group Limited.
Taylor, D. T., R. R. Fletcher, and T. Clabaugh. 1993. “A Comparison of Characteristics, Regional Expenditures, and Economic Impact of Visitors to Historical Sites with Other Recreational Visitors.” *Journal of Travel Research* 32(1): 30-5.
Thrane, C. 2002. “Jazz Festival Visitors and Their Expenditures: Linking Spending Patterns to Musical Interest.” *Journal of Travel Research* 40(3): 281-86.
Thrane, C. 2015, “On the Relationship between Length of Stay and Total Trip Expenditures: A Case Study of Instrumental Variable (IV) Regression Analysis”, *Tourism Economics*, 21(2): 357-367.
Thrane, C., and E. Farstad. 2011. “Domestic Tourism Expenditures: The Non-Linear Effects of Length of Stay and Travel Party Size.” *Tourism Management* 32(1): 46-52.
Van der Zee, E. & Bertocchi, D. (2018), Finding patterns in urban tourist behaviour: a social network analysis approach based on TripAdvisor reviews, *Information Technology & Tourism*, 20(1-4): 153-180. https://doi.org/10.1007/s40558-018-0128-5
Vu, H.Q., Li, G., Law, R., Zhang, Y. 2017. “Exploring Tourist Dining Preferences Based on Restaurant Reviews *Journal of Travel Research*, forthcoming.
Walsh, R. G., K. H. John, J. R. McKean, and J. G. Hof. 1992. “Effect of Price on Forecasts of Participation in Fish and Wildlife Recreation: An Aggregate Demand Model.” *Journal of Leisure Research* 24(2): 140-56.
Wang, Y., and M. C. Davidson. 2010a. “A Review of Micro-Analyses of Tourist Expenditure.” *Current Issues in Tourism* 13(6): 507-24.
Wang, Y., and M. C. Davidson. 2010b. “Chinese Holiday Makers' Expenditure: Implications for Marketing and Management.” *Journal of Hospitality Marketing & Management* 19(4): 373-96.
Wang, Y., P. Rompf, D. Severt, and N. Peerapatdit. 2006. “Examining and Identifying the Determinants of Travel Expenditure Patterns.” *International Journal of Tourism Research* 8(5): 333-46.
Wang, L., Fong, D.K.C., Law, R., and Fang, B. 2017. “Length of Stay: Its Determinants and Outcomes.” *Journal of Travel Research*, forthcoming.
Wilkins, E., de Urioste-Stone, S.; Weiskittel, A.; and Gabe, T. 2017. "Effects of Weather Conditions on Tourism Spending: Implications for Future Trends under Climate Change." *Journal of Travel Research*, forthcoming.
World Travel and Tourism Council (WTTC). 2015. Travel & Tourism Economic Impact

2015. South Korea.
Wu, L., J. Zhang, and A. Fujiwara. 2013. “Tourism Participation and Expenditure Behaviour: Analysis Using a Scobit Based Discrete–Continuous Choice Model.” *Annals of Tourism Research* 40: 1-17.
Yoon, J., and E. L. Shafer. 1997. “Research: An Analysis of Sun-Spot Destination Resort Market Segments: All-Inclusive Package Versus Independent Travel Arrangements.” *Journal of Hospitality & Tourism Research* 21(1): 141-59.
Yu, J. Y., and T. G. Ko. 2012. “A Cross-Cultural Study of Perceptions of Medical Tourism among Chinese, Japanese and Korean Tourists in Korea.” *Tourism Management* 33(1): 80-8.
Marcussen, C.H. (2011), “Determinants of tourist spending in crosssectional studies and at Danish destinations”, *Tourism Economics*, 2011, 17 (4), 833–855.

Table 1. Descriptive statistics (categorical variables)

Variable	Sample size	Proportion	Variable	Sample size	Proportion
Demographic characteristics			Canada	1726	3.6
up to 30 (reference category)	15541	32.3	UK	1685	3.5
31-40	13220	27.5	Germany	1644	3.4
41-50	8987	18.7	France	1440	3.0
51-60	5520	11.5	Russia	1792	3.7
over 60	2301	4.8	Arab countries	1734	3.6
Public official/Armed forces	3105	6.5	India	1439	3.0
Business person/Manager	8744	18.2	Other (reference category)	2441	5.1
Office employee/Technician	7625	15.8	**Travel related characteristics**		
Sales/Service worker	4727	9.8	Independent	35114	73.0
Professional	5224	10.9	Only Korea	42311	87.9
Manufacturer/Engineer/Laborer	1718	3.6	Leisure, recreation, holiday	19798	41.1
Self-employed	3704	7.7	Health, medical treatment	499	1.0
Student	6175	12.8	Religion or pilgrimage	388	0.8
Housewife	2099	4.4	Shopping	3829	8.0
Retiree	908	1.9	Visiting friends and relatives	4877	10.1
Unemployed	589	1.2	Business or professional activities	16029	33.3
Other (reference category)	2761	5.7	Alone	18141	37.7
Elementary	6576	13.7	Family and relatives	13688	28.4
College	28030	58.3	Friends	10877	22.6
Graduate school	10933	22.7	Coworker	6475	13.5
Other (reference category)	1809	3.8	Other (reference category)	608	1.3
Japan	8205	17.1	Hotel	35270	73.3
China	7436	15.5	**Information search behaviors**		
Hong Kong	2821	5.9	Travel agency	3340	10.8
Singapore	1911	4.0	Relatives and Friends	8022	26.0
Taiwan	3407	7.1	Internet	10330	33.4
Thailand	2717	5.6	Traveler's guides	3699	12.0
Malaysia	2064	4.3	Media (TV, radio, newspaper)	2916	9.4
Australia	1720	3.6	Korean office (tourist office, embassy)	1083	3.5
America	3931	8.2	Airlines, hotels	968	3.1
			Other (reference category)	548	1.8

Table 2. Descriptive statistics (continuous variables)

Variable	Sample size	Mean	Std. Deviation
Total travel expenses	47347	1904.86	23610.81
Accommodation	34489	543.55	7931.38
Shopping	38424	838.92	20745.88
Food and beverage	47405	386.01	3729.47
Local transportation	47416	100.90	1234.86
Consumer price index differentials	45672	1.005	0.05
Number of visits	48113	1.79	1.14
Overall travel satisfaction	48113	4.27	0.77

Table 3. Determinant factors of total expenses per person (OLS, 2SLS, Heckit and QR)

Variables	OLS	OLS with CPId	2SLS	2SLS with CPId	Heckit	Heckit with CPId	QR	QR with CPId
Demographic characteristics								
C	6.0315a	5.0203a	6.3966a	4.8913a	6.4226a	5.1973a	6.1613a	4.3832a
	(0.0461)	(0.1019)	(0.1419)	(0.1528)	(0.0517)	(0.1162)	(0.0454)	(0.1075)
31-40	0.0620a	0.0465a	0.0197	0.0259	0.0296b	0.0118	0.0599a	0.0377a
	(0.0123)	(0.0128)	(0.0197)	(0.0222)	(0.0146)	(0.015)	(0.0109)	(0.0116)
41-50	0.1179a	0.0688a	0.0202	0.0415	0.0615a	0.0051	0.1089a	0.0519a
	(0.0141)	(0.0146)	(0.0265)	(0.028)	(0.0164)	(0.0168)	(0.0133)	(0.014)
51-60	0.1268a	0.0500a	-0.0051	0.0271	0.0677a	-0.0213	0.1341a	0.0534a
	(0.0166)	(0.0172)	(0.0265)	(0.0266)	(0.0192)	(0.0197)	(0.0153)	(0.0163)
over 60	0.0778a	-0.0431	-0.1079a	-0.0675b	0.0269	-0.1035a	0.1120a	0.0038
	(0.0242)	(0.025)	(0.0347)	(0.0332)	(0.027)	(0.0286)	(0.0240)	(0.028)
Public official/Armed forces	0.0434	0.0237	0.0170	0.0250	-0.0025	-0.0225	0.0527b	0.0413
	(0.0244)	(0.0252)	(0.0252)	(0.0256)	(0.0287)	(0.0292)	(0.0210)	(0.0226)
Business person/Manager	0.1259a	0.1129a	0.0948a	0.0823b	0.0423	0.0189	0.1327a	0.1326a
	(0.0204)	(0.0213)	(0.0277)	(0.0344)	(0.0240)	(0.0247)	(0.0198)	(0.0214)
Office employee/Technician	0.0127	-0.0068	-0.0384	-0.0262	-0.0332	-0.0572b	0.0291	-0.0068
	(0.0201)	(0.0208)	(0.0253)	(0.027)	(0.0238)	(0.0243)	(0.0176)	(0.0192)
Sales/Service worker	0.0582a	0.0594a	0.0234	0.0307	0.0092	0.0187	0.0422b	0.0214
	(0.0218)	(0.0225)	(0.0301)	(0.0339)	(0.0258)	(0.0264)	(0.0184)	(0.021)
Professional	0.0371	0.0084	0.0180	0.0119	0.0022	-0.0271	0.0474b	0.0207
	(0.0218)	(0.0228)	(0.0227)	(0.0233)	(0.0258)	(0.0268)	(0.0210)	(0.0227)
Manufacturer/Engineer/Laborer	-0.0387	-0.0330	-0.0321	-0.0241	-0.0608	-0.0279	-0.0256	-0.0224
	(0.0290)	(0.0304)	(0.0311)	(0.0318)	(0.0343)	(0.0356)	(0.0264)	(0.0313)
Self-employed	0.3313a	0.3971a	0.3703a	0.3861a	0.2954a	0.3511a	0.2777a	0.3392a
	(0.0232)	(0.0242)	(0.0249)	(0.0263)	(0.0278)	(0.0286)	(0.0221)	(0.0258)
Student	-0.1120a	-0.1221a	-0.1080a	-0.1063a	-0.0610b	-0.0704b	-0.1002a	-0.1252a
	(0.0222)	(0.0231)	(0.0253)	(0.0272)	(0.0278)	(0.0286)	(0.0190)	(0.0207)
Housewife	0.0744a	0.0561b	0.0393	0.0533	0.0742b	0.0525	0.0968a	0.0556b
	(0.0277)	(0.0284)	(0.0289)	(0.0288)	(0.0325)	(0.0329)	(0.0218)	(0.0236)
Retiree	-0.1288a	-0.083b	-0.0281	-0.0493	-0.0831	-0.0531	-0.0833b	-0.0448
	(0.0388)	(0.0401)	(0.0481)	(0.0502)	(0.0461)	(0.0471)	(0.0368)	(0.0391)
Unemployed	-0.0450	-0.0427	-0.0141	-0.0122	-0.0123	-0.005	-0.0168	-0.0424
	(0.0447)	(0.0464)	(0.0507)	(0.054)	(0.0568)	(0.0579)	(0.0369)	(0.0421)
Elementary	0.0498	0.0963a	0.0794a	0.1037a	0.0507	0.076a	0.0407	0.079a
	(0.0254)	(0.0264)	(0.0265)	(0.0275)	(0.0277)	(0.0286)	(0.0217)	(0.0255)
College	0.0818a	0.1413a	0.1360a	0.1439a	0.0971a	0.1589a	0.0649a	0.1277a
	(0.0232)	(0.0241)	(0.0241)	(0.0245)	(0.0251)	(0.0259)	(0.0201)	(0.0239)
Graduate school	0.0612b	0.0857a	0.0826a	0.0867a	0.0618b	0.0948a	0.0520b	0.100a
	(0.0245)	(0.0255)	(0.0253)	(0.0258)	(0.0265)	(0.0273)	(0.0220)	(0.0257)
Japan	-0.0777a				-0.0813a		-0.1789a	
	(0.0244)				(0.0291)		(0.0257)	
China	0.5002a				0.5651a		0.4019a	
	(0.0245)				(0.0298)		(0.0260)	
Hong_Kong	0.0942a				0.0936a		0.0331	
	(0.0279)				(0.0328)		(0.0278)	
Singapore	0.3660a				0.3206a		0.3292a	
	(0.0300)				(0.0349)		(0.0299)	
Taiwan	0.1392a				0.2512a		0.0562b	
	(0.0278)				(0.0334)		(0.0269)	
Thailand	0.0942a				0.1350a		0.04062	
	(0.0290)				(0.0340)		(0.0273)	
Malaysia	0.2215a				0.2947a		0.2292a	
	(0.0297)				(0.0352)		(0.0291)	
Australia	-0.0233				-0.097237a		-0.0219	
	(0.0306)				(0.0363)		(0.0405)	
USA	-0.0097				0.0068		-0.0361	
	(0.0259)				(0.0311)		(0.0308)	
Canada	-0.0829a				-0.0919b		-0.0897b	

	(0.0315)				(0.038)		(0.0381)	
UK	-0.0940a				-0.1570a		-0.0234	
	(0.0311)				(0.0366)		(0.0403)	
Germany	-0.0678b				-0.1261a		-0.0700	
	(0.0311)				(0.0363)		(0.0390)	
France	-0.0091				-0.0720		0.0176	
	(0.0329)				(0.0391)		(0.0370)	
Russia	0.2519a				0.1904a		0.2557a	
	(0.0312)				(0.0376)		(0.0377)	
Saudi Arabia	0.5309a				0.4452a		0.4824a	
	(0.0325)				(0.0412)		(0.0445)	
India	-0.0068				0.0321		0.0270	
	(0.0348)				(0.0412)		(0.0490)	
Travel related characteristics								
Independent	-0.1875a	-0.2019a	-0.1877a	-0.1802a	0.0249	-0.0266	-0.1859a	-0.1802a
	(0.0125)	(0.0122)	(0.0193)	(0.0227)	(0.0148)	(0.0143)	(0.0104)	(0.0105)
Days	0.0293a	0.0292a	0.0087	0.0093	0.0539a	0.053a	0.0303a	0.0313a
	(0.0005)	(0.0006)	(0.0128)	(0.0174)	(0.0009)	(0.001)	(0.0009)	(0.0008)
Only Korea	0.1533a	0.2159a	0.2370a	0.2383a	0.126a	0.2030a	0.1453a	0.1742a
	(0.0129)	(0.0133)	(0.0202)	(0.0238)	(0.0152)	(0.0156)	(0.0200)	(0.0213)
Leisure, recreation, holiday	0.1132a	0.1581a	0.1280a	0.1291a	0.0384a	0.0992a	0.1110a	0.1523a
	(0.0089)	(0.0091)	(0.0199)	(0.027)	(0.0112)	(0.0113)	(0.0091)	(0.0102)
Shopping	0.2662a	0.2782a	0.2267a	0.2417a	0.2107a	0.222a	0.2497a	0.2440a
	(0.0137)	(0.0138)	(0.0285)	(0.0348)	(0.0163)	(0.0163)	(0.0124)	(0.0131)
Visiting F&R	-0.1105a	-0.1532a	-0.1246a	-0.1179a	0.2809a	0.2246a	-0.1228a	-0.1439a
	(0.0131)	(0.0135)	(0.0245)	(0.0337)	(0.0200)	(0.0207)	(0.0146)	(0.0153)
Business or professional activities	-0.1933a	-0.2045a	-0.1556a	-0.1771a	-0.4540a	-0.4660a	-0.1671a	-0.1832a
	(0.0112)	(0.0115)	(0.0230)	(0.0266)	(0.0141)	(0.0144)	(0.0123)	(0.0136)
Alone	-0.1130a	-0.1435a	-0.1267a	-0.1233a	-0.0654b	-0.0902a	-0.0981a	-0.1293a
	(0.0256)	(0.0264)	(0.0293)	(0.032)	(0.0301)	(0.0306)	(0.0236)	(0.0224)
Family and relatives	0.1070a	0.1146a	0.1407a	0.1176a	0.0563b	0.0742a	0.1029a	0.101a
	(0.0235)	(0.0242)	(0.0248)	(0.0246)	(0.0272)	(0.0276)	(0.0198)	(0.0178)
Friends	0.0681a	0.0532b	0.0433	0.0415	0.0833a	0.0797a	0.0693a	0.0354
	(0.0234)	(0.024)	(0.0256)	(0.0264)	(0.0270)	(0.0274)	(0.0198)	(0.0181)
Coworker	-0.1151a	-0.0975a	-0.1045a	-0.1044a	-0.1036a	-0.0719b	-0.0622a	-0.0542a
	(0.0258)	(0.0265)	(0.0271)	(0.0276)	(0.0298)	(0.0303)	(0.0229)	(0.0210)
Hotel	0.2879a	0.2307a	0.1267	0.1344			0.2882a	0.2569a
	(0.0124)	(0.0128)	(0.0658)	(0.0852)			(0.0126)	(0.0132)
Information search behaviors								
Travel agency	0.1356a	0.1070a	0.1118a	0.1130a	0.1066a	0.0840a	0.0636a	0.0534a
	(0.0185)	(0.0190)	(0.0194)	(0.0199)	(0.0211)	(0.0215)	(0.0153)	(0.0159)
Relatives and Friends	0.1227a	0.0936a	0.0989a	0.0959a	0.1165a	0.0956a	0.0654a	0.0518a
	(0.0134)	(0.0139)	(0.0139)	(0.0142)	(0.0156)	(0.016)	(0.0117)	(0.0126)
Internet	0.1448a	0.1119a	0.1228a	0.1212a	0.1351a	0.1032a	0.0891a	0.071a
	(0.0124)	(0.0128)	(0.0140)	(0.0154)	(0.0146)	(0.015)	(0.0119)	(0.0124)
Traveler's guides	0.1237a	0.066a	0.0792a	0.0773a	0.1083a	0.0559b	0.0736a	0.0255
	(0.0179)	(0.0185)	(0.0198)	(0.0211)	(0.021)	(0.0217)	(0.0149)	(0.0148)
Media (TV, radio, newspaper)	0.1123a	0.0823a	0.0872a	0.0918a	0.1028a	0.0666a	0.0637a	0.0454a
	(0.0197)	(0.0204)	(0.0210)	(0.0223)	(0.0230)	(0.0235)	(0.0169)	(0.0175)
Korean office (tourist office, embassy)	0.1610a	0.1355a	0.1719a	0.1646a	0.2207a	0.198a	0.1022a	0.0698b
	(0.0313)	(0.0329)	(0.0379)	(0.0419)	(0.0382)	(0.0398)	(0.0253)	(0.032)
Airlines, hotels	0.0772b	0.0060	-0.0033	-0.007	0.0297	-0.0382	0.0430	-0.0115
	(0.0316)	(0.0333)	(0.0342)	(0.0357)	(0.0358)	(0.0373)	(0.0360)	(0.0326)
Price								
Consumer price index differential (CPId)		1.141a		1.473a		1.3102a		1.8361a
		(0.0923)		(0.305)		(0.1069)		(0.1002)

Notes: a= prob < 1%;b= prob < 5%.

Table 4. Effect of information sources on total expenses per person (QR)

Information sources	Quantile				
	0.1	**0.25**	**0.5**	**0.75**	**0.9**
Travel agency	0.777a	0.5178	0.2384a	0.1000a	0.0187
	(0.0428)	(0.0211)	(0.0151)	(0.0209)	(0.0289)
Relatives and Friends	0.6098a	0.3731a	0.1613a	0.0896a	-0.0043
	(0.028)	(0.0192)	(0.0135)	(0.0165)	(0.0224)
Internet	0.5008a	0.338a	0.1375a	0.1018a	0.0498b
	(0.031)	(0.0178)	(0.0127)	(0.0151)	(0.0222)
Traveler's guides	0.6684a	0.3671a	0.1186a	0.0461b	-0.0552b
	(0.0322)	(0.0213)	(0.0164)	(0.0202)	(0.026)
Media (TV, radio, newspaper)	0.6601a	0.4254a	0.1794a	0.0518b	0.0000
	(0.0396)	(0.0261)	(0.0179)	(0.0216)	(0.0329)
Korean office (tourist office, embassy)	0.5596a	0.3595a	0.2023a	0.1655a	0.1600b
	(0.0639)	(0.0441)	(0.0329)	(0.0284)	(0.0741)
Airlines, hotels	-0.0619	-0.0791	-0.0812b	-0.1022b	-0.1619a
	(0.0561)	(0.0591)	(0.0368)	(0.0403)	(0.0465)

Notes: a= prob < 1%;b= prob < 5%.

Table 5. Effect of information sources on accommodation, shopping, F&B and local transportation expenses per person (QR)

Information sources	Quantile				
Accommodation	**0.1**	**0.25**	**0.5**	**0.75**	**0.9**
Travel agency	0.0000	4.0775a	0.1778a	-0.1285a	-0.1106b
	(0.0163)	(0.1589)	(0.048)	(0.0373)	(0.0493)
Relatives and Friends	0.0000	4.2047a	0.2068a	-0.0667b	-0.0223
	(0.0094)	(0.0873)	(0.0308)	(0.0271)	(0.0297)
Internet	0.0000	0.0000	0.102a	-0.0649a	0.0116
	(0.0065)	(0.0119)	(0.032)	(0.0249)	(0.0269)
Traveler's guides	0.0000	4.4308a	0.239a	-0.115a	-0.0609
	(0.0135)	(0.0833)	(0.0374)	(0.0325)	(0.0373)
Media (TV, radio, newspaper)	0.0000	4.143a	0.2585a	0.0185	0.0151
	(0.0148)	(0.1761)	(0.0437)	(0.0379)	(0.0438)
Korean office (tourist office, embassy)	0.0000	4.1897a	0.375a	0.1229b	0.1517a
	(0.0203)	(0.2854)	(0.0685)	(0.0537)	(0.0545)
Airlines, hotels	0.0000	3.6889a	0.2852a	0.1244b	0.1276b
	(0.02)	(0.4158)	(0.0742)	(0.0581)	(0.0596)
Shopping					
Travel agency	4.0943a	1.3419a	0.5228a	0.2375a	0.1132a
	(0.1384)	(0.068)	(0.0269)	(0.0305)	(0.0313)
Relatives and Friends	3.7769a	1.1929a	0.3857a	0.1938a	0.0714b
	(0.0647)	(0.0556)	(0.024)	(0.0231)	(0.028)
Internet	3.419a	1.0516a	0.3526a	0.2015a	0.0828a
	(0.1271)	(0.057)	(0.024)	(0.0214)	(0.0281)
Traveler's guides	4.1431a	1.1911a	0.3526a	0.1087a	-0.0896b
	(0.1126)	(0.0591)	(0.0303)	(0.0264)	(0.0359)
Media (TV, radio, newspaper)	4.3438a	1.3027a	0.3857a	0.1913a	0.0912b
	(0.069)	(0.0623)	(0.0321)	(0.0328)	(0.0445)
Korean office (tourist office, embassy)	3.312a	1.0403a	0.3526a	0.1938a	0.0443
	(0.4396)	(0.1138)	(0.0618)	(0.0607)	(0.0663)
Airlines, hotels	0.0000	-0.0991	-0.3075a	-0.264a	-0.3612a
	(0.0252)	(0.1189)	(0.0561)	(0.0564)	(0.057)
F&B					
Travel agency	0.0000	0.0000	-0.0943	0.0000	-0.1005b
	(0.006)	(0.0098)	(0.05)	(0.0411)	(0.0439)
Relatives and Friends	0.0000	0.0000	0.2852a	0.2517a	0.0797a
	(0.0057)	(0.0093)	(0.0295)	(0.0287)	(0.0294)
Internet	0.0000	0.0000	0.3001a	0.2199a	0.0428
	(0.0052)	(0.0085)	(0.0266)	(0.0255)	(0.0276)
Traveler's guides	0.0000	2.9596a	0.3365a	0.0892a	-0.1159a
	(0.0086)	(0.5599)	(0.0338)	(0.0312)	(0.0379)
Media (TV, radio, newspaper)	0.0000	0.0000	0.2546a	0.2082a	-0.0508
	(0.0079)	(0.0128)	(0.0498)	(0.0368)	(0.0427)
Korean office (tourist office, embassy)	0.0000	3.8067a	0.6366a	0.4627a	0.0524
	(0.0177)	(0.156)	(0.0576)	(0.0529)	(0.0614)
Airlines, hotels	0.0000	2.1972a	0.0198	-0.036	-0.2985a
	(0.016)	(0.6995)	(0.0619)	(0.0562)	(0.0755)
Local transportation					
Travel agency	0.0000	0.0000	0.0000	-0.5319a	-0.2169a
	(0.0032)	(0.0049)	(0.0069)	(0.0584)	(0.0514)
Relatives and Friends	0.0000	0.0000	0.0000	0.2029a	0.2311a
	(0.0027)	(0.0042)	(0.006)	(0.0305)	(0.0364)
Internet	0.0000	0.0000	1.7918	0.2231a	0.4055a
	(0.0025)	(0.0039)	(1.0222)	(0.0289)	(0.0287)
Traveler's guides	0.0000	0.0000	2.9957a	0.2231a	0.2546a
	(0.0042)	(0.0065)	(0.1107)	(0.0382)	(0.045)
Media (TV, radio, newspaper)	0.0000	0.0000	0.0000	0.1927a	0.2546a
	(0.0042)	(0.0064)	(0.0091)	(0.0435)	(0.0576)
Korean office (tourist office, embassy)	0.0000	0.0000	3.2661a	0.5878a	0.4731a
	(0.0076)	(0.0118)	(0.1962)	(0.0809)	(0.0615)
Airlines, hotels	0.0000	0.0000	0.0000	0.1187	0.0000
	(0.0069)	(0.0106)	(0.015)	(0.0653)	(0.0753)