



FREIE UNIVERSITÄT BOZEN

LIBERA UNIVERSITÀ DI BOLZANO

FREE UNIVERSITY OF BOZEN - BOLZANO

Fakultät für  
Wirtschaftswissenschaften

Facoltà di  
Economia

School of  
Economics and Management

BEMPS –  
Bozen Economics & Management  
Paper Series

NO 14 / 2013

The Influence of Visitors'  
Satisfaction on Expenditure  
Behaviour

Marta Disegna & Linda Osti

# The Influence of Visitors' Satisfaction on Expenditure Behaviour

Marta Disegna<sup>\*,a</sup> and Linda Osti<sup>b</sup>

*Competence Centre in Tourism Management and Tourism Economics (TOMTE),*

*<sup>a</sup>School of Economics and Management, Free University of Bozen-Bolzano, Piazza dell'Università, 39100 Bolzano, Italy.*

*<sup>b</sup>School of Economics and Management, Free University of Bozen-Bolzano, Piazzetta dell'Università, 39031 Brunico (Bolzano), Italy*

## Abstract

This study analyses spending behaviour of international visitors to Italy. In specific it focuses on the impact that visitors' satisfaction with different attributes of the trip exerts on expenditure among different service categories. Despite a general recognition by the economic literature that customer satisfaction exerts a positive effect on both economic returns and brand loyalty, very few academic studies explored the relationship between tourists' satisfaction with a destination and spending behaviour.

This study focuses on the 1,030 visitors who travelled to the provinces Bolzano, Trento, and Belluno (Northern Italy), an area around the Dolomites. The Double-hurdle model with the Heien and Wessells estimator is applied. Discussion of the empirical evidence is aimed at highlighting the main relations between expenditure behaviour and satisfaction. Policy implications and managerial issues for tourism destinations are also presented.

*Keywords:* Tourist expenditure, satisfaction, double-hurdle model, spending behaviour.

*JEL Codes:* C19, D12, L83

---

*\* Corresponding Author*

*E-mail addresses:* [marta.disegna@unibz.it](mailto:marta.disegna@unibz.it) (M. Disegna); [Linda.Osti@unibz.it](mailto:Linda.Osti@unibz.it) (L. Osti)

*Acknowledgements:* Our research was supported by the Free University of Bolzano project "Model Spending Behaviour in Tourism" and by STTOBS – South Tyrolean Tourism OBServatory – a research project by the Free University of Bolzano, Banca di Trento e Bolzano, and Intesa Sanpaolo. A preliminary version of this paper was presented at the ARWTE – Advanced Research Workshop in Tourism Economics – conference held in Coimbra, Portugal, June 06–07, 2013.

## **Introduction**

Tourism has long been recognized as an instrument for local economic development and regeneration of rural areas, due to its ability to increase profits and generate economic benefits to host regions and communities (Craggs and Schofield, 2009). Within this context, understanding and measuring tourism expenditure is essential for those tourism destinations whose major source of income is based on tourism revenues (Hung et al., 2012). Tourist expenditure and visitor spending behaviour can play a crucial role for a better understanding of the economic benefits that a destination experiences when engaging in tourism. Visitors' expenditure is influenced by a wide range of socio-demographic and economic variables, by psychological variables, by trip-related and destination-related variables (see Kim *et al.* 2011; Wang and Davidson, 2010; Craggs and Schofield, 2009; Laesser and Crouch, 2006; Lehto *et al.*, 2004; Jang *et al.*, 2004; Downward and Lumsdon, 2003; Ryan, 2003; Mok and Iverson, 2000; Agarnal and Yochum, 2000; Downward and Lumsdon, 2000; Legoherel, 1998; Oppermann, 1997; Davies and Morgan, 1996; Godbey and Graefe, 1991; Gyte and Phelp, 1989), and by satisfaction (Anderson et al., 1994 cited in Zhang et. al., 2010). In fact, a review of the literature on customer satisfaction reveals that satisfaction stimulates repeat visits, positive recommendations and thereupon new customers, reputation enhancement, higher acceptance of price increases, and consequently overall higher profitability (Anderson et al. 1994; Baker and Crompton, 2000; Kozak and Rimmington, 2000; Homburg et al., 2005; Munier and Camelis; 2013). However, so far no studies have specifically addressed the relationship between satisfaction with destination attributes and expenditure (Zhang et al, 2010).

The analysis of these measures is an essential step for tourism decision makers to set adequate planning strategies and to stimulate an increase in visitors' expenditure at the destination. Despite international tourism demand is principally analysed at the macro-level, in which the unit of analysis is an aggregated data (such as total arrivals, nights spent at tourist accommodation and total tourist receipts), to measure and determine the depth of the economic benefits experienced by the destination, it is necessary to analyse micro-data in which individuals or households are the principal unit of analysis.

In this context, the present paper aims to analyse and describe, from a micro-level perspective, the characteristics of tourists' spending behaviour by investigating the dependence among different tourist expenditure categories and the influence of satisfaction with the different aspects of the destination on tourists' expenditure. In specific, this study investigates visitors' expenditure divided into spending for transportation, accommodation, food and beverage, shopping, and other services such as museums, shows, entertainment, guided tours, rented vehicles, language courses, etc. The data used for this study were retrieved from the 2011 Annual Survey conducted by the Bank of Italy (*Banca d'Italia*) entitled "International Tourism in Italy". Although the main aim of this survey is to monitor travel expenditure and length of stay of international tourists visiting Italy, the level of satisfaction with different aspects of the trip and the overall satisfaction were also investigated.

The results of this study are essential for destination managers to have a clear understanding of the relationship between satisfaction and expenditure. This information provides destination managers and private tourism businesses with practical knowledge useful for the management of customer service and the strategic planning and packaging of accommodation, attractions and other tourism and non-tourism services. The results of this study can also guide tourism planners in expanding their market share by seeking visitors who spend money for as many services as possible at the destination.

## **Literature Review**

### *Visitors' expenditure: Theories and Models*

There is a substantial body of literature relating to tourism's economic impact at the macro level, but less is known about visitors' expenditure at a micro scale. As stated by Alegre and Pou (2004), studies at the micro level have several advantages: firstly, they are closer to theoretical economic consumer models; secondly, they allow preserving the choice by individuals not to spend any money for tourism services; thirdly, they allow to preserve the heterogeneity and diversity of individual consumers' behaviour. More recently, Belenkiy and Riker (2013) underlined that the main advantages in using micro data encompass the fact that these data report the expenditure of individual travellers together with demographic, social or other characteristics that can be used to control (or profile) the units of

analysis. On the other side the main limitation lies in the fact that it is not possible to model dynamic adjustments because the datasets are not time-series.

When conducting a review of the literature, Lim (2006) found only nine studies, among the 124 analysed, in which ad-hoc designed surveys were employed to take into exam individual economic units. More recently, Wang and Davidson (2010) have identified and analysed 27 studies that used expenditure as the measure of individuals' demand for tourism. These studies clearly support the idea that the micro-level needs to be studied further in order to fill a gap in the literature.

Most of the micro-data studies investigating tourism expenditure have used Ordinary Least Square (OLS) estimation in linear regression models (Wu et al., 2013; Brida and Scuderi, 2013; Wang and Davidson, 2010). However, the presence of a high proportion of expenditure values equal to zero presents tourism spending as a non-negative (i.e. left-censored) distribution. Thus, the OLS method may lead to inconsistent and bias parameter estimates (Amemiya, 1984; Maddala, 1983) since the Normal assumption of the dependent variable is often unrealistic. In order to treat the problem of zero expenditure, and provide a suitable estimation for censored dependent variable, the Tobit regression model (Tobin, 1958) has been applied in the tourism field. Zheng and Zhang (2011), Barquet *et al.* (2011), Kim *et al.* (2011), Lee (2001) and Leones *et al.*, (1998), among others, estimate tourism expenditure applying the Tobit model.

In this study, a generalization of the Tobit model called "double-hurdle" (Cragg, 1971), estimated by means of the Heien and Wessells two-step estimator (Heien and Wessells, 1990) was adopted. The main feature of the double-hurdle is that it allows researchers to split the decision-making process into two natural stages, or decisions, that are modelled through two separate models: 1) the decision to spend (selection stage) and 2) the choice of how much money to spend (outcome stage). This is a further step of the Tobit model, which treats the two stages as if they were generated from the same consumer decision process assuming that the sets of independent variables influencing the selection stage are the same that influence, with the same direction and intensity, the outcome stage. However, the double-hurdle model assumes that the two decisions are independent. This implies that the model used at the second stage estimates the average tourism spending using the data collected from a population in which individuals who do not spend are excluded by self-selection. The Heckman

model (Heckman, 1976) allows treating the sample selection problem as a problem of omitted variables, and it corrects for bias in the estimation of the second stage equation by introducing a new variable -the inverse Mill's ratio- calculated on the basis of the estimations obtained through the first stage equation. In this way, the Heckman model allows for the error term of both equations to be correlated and the two decisions to be dependent. More recently, Heien and Wessells (1990) proposed an alternative formula of the Mill's ratio that allows using all of the observations in each stage, whereas in the Heckman model the zero observations are omitted from the second stage.

Recent studies in which the double-hurdle model was applied are Weagley and Huh (2004) who analysed leisure expenditures of retired and near-retired Americans households, and Hong *et al.* (1999) who investigated the travel expenditure patterns of elderly households in the US. Recent applications of the Heckman model include Alegre *et al.* (2013) application to tourism participation and expenditure by Spanish households, and Jang and Ham's (2009) application to leisure travellers' expenditure distinguishing between baby boomer senior households and older senior households in the US. Finally, the double-hurdle model estimated by means of Heien and Wessells two-step estimator was recently adopted by Marzetti and Disegna (2012), Brida *et al.* (2012; 2013a), and Brida *et al.* (2013b).

In addition to the consumer behaviour theory by which each decision-making process to purchase can be described as a two step process, there is another important economic theory that must be taken into account when modelling expenditures: the neoclassical economic theory of consumer behaviour. According to this theory, consumers are rational and they want to maximize their utility function by choosing among a set of available alternatives.

Thus, the utility function can be described as the maximum satisfaction that consumers obtain from the consumption of various goods and services that they purchase, at a certain level of income (budget). In fact, when undertaking an expenditure, tourists first of all decide whether to incur in such cost by comparing their purchase with other opportunities in other industries, then they decide on the goods and services to buy based on the goods and services offered on the market and the budget available. Tourism expenditure is therefore a consumer choice, first between goods and services within various industries, then between various expenditures within the tourism industry (Zheng and

Zhang, 2011; Tribe, 2005).

Consumers are assumed to be able to rank goods and services, in such a way that they are able to select the particular combinations for which their utility function takes the largest value, at a certain level of income (budget). Furthermore, the consumer's utility function is "separable". The separability, and in particular the assumption of weak separability, assumes independence only among groups of commodities instead of among individual commodities. This implies that the budgeting procedure by which individuals allocate their incomes among different goods and services is composed by two stages (Deaton and Muellbauer, 1980): first, the individual decides in which broad commodity groups (like, food, tourism, housing, clothes, etc.) to allocate its income; second, the individual decides which goods and services he/she wants to buy within each group without any reference to the expenditure in the other groups. Syriopoulos and Sinclair (1993) applied this approach to the field of tourism suggesting a three-stage budgeting process. In the first stage, tourists allocate their budget between total tourism expenditure and consumption of other goods and services. In the second stage, tourists allocate their tourism budget among different destinations, including the home country. Third, tourists choose how to allocate their tourism budget among various goods and services offered by the selected destination(s).

Until now, little attention was paid to the analysis of the third stage of this budget process, and most of the existing studies focus on the second stage. The studies of Bilgic et al. (2008) and Divisekera (2010) represent two important exceptions in the tourism demand literature, modelling the third stage of this budget process, i.e. considering the dependence among different tourism expenditure categories. The first study adopted the bivariate Tobit model (Amemiya, 1974) to simultaneously estimate the share expenditure on two broad classes of leisure activities (hunting and fishing), while the second estimated an AIDS model (Deaton and Muellbauer, 1980) to study the way by which tourists choose to spend their money among various goods and services during the trip. In each model, the dependent variables are expenditure shares, and both models suffer from the fact that they are estimated under three, seldom satisfied, restrictive economic conditions: adding-up, homogeneity, and symmetry conditions. Furthermore, the use of a multivariate Tobit model is computationally cumbersome when more than two equations are simultaneously considered (Bilgic et al., 2008).

### *Customer Satisfaction and expenditure*

Ample body of literature in both general service management and more specific in tourism and hospitality management has focused on customer satisfaction since the late 1970s. Along the years, satisfaction has been analysed under different perspectives and for different purposes. Several research studies have demonstrated that customer satisfaction is capable of stimulating repeat visits, positive recommendations and consequently new customers, reputation enhancement, higher acceptance of price increases, and higher profitability (Anderson et al. 1994; Baker and Crompton, 2000; Kozak and Rimmington, 2000; Homburg et al., 2005; Munier and Camelis; 2013). Satisfaction has been analysed in terms of satisfaction with the single services/products within the destination, with the destination, and with the holiday/trip as a whole. Although most satisfaction studies concentrate on single aspects of the tourism experience, it has been argued that satisfaction in tourism should be studied as a system process, where the several stages of the trip (pre-trip services, services at the destination, and transit route services) are analysed collectively (Neal and Gursoy, 2008). In the tourism and hospitality industry satisfaction has been furthermore investigated for controllable items, such as standard of the services offered, cleanliness, availability of information, prices, etc., and for uncontrollable items, such as culture, scenery, and weather. Nevertheless, some researchers argue that any satisfaction study on uncontrollable items is limiting due to the difficulty in taking any corrective actions when dissatisfaction with such items occurs. Additionally, most of these items are the underlying reasons for choosing a destination rather than causes of dissatisfaction, provided that there has been an adequate preholiday information search (Kozak and Rimmington, 2000).

Satisfaction has also been studied in order to improve the product/service and to effectively design management and marketing strategies (Kozak and Rimmington, 2000; Munier and Camelis, 2013). Customer satisfaction has finally been seen as an indicator of destination competitiveness and performance (Enright and Newton, 2004; Alegre and Garau, 2010; Munier and Camelis, 2013).

As reported by Neal and Gursoy (2008), most satisfaction studies are based on expectation and perception models (Oliver, 1980), cognitive evaluation (Klaus, 1985; Chadee and Mattsson, 1996),



congruity models (Sirgy, 1984), equity models (Oliver and Swan, 1989), and perceived overall performance (Fuchs and Weiermair, 2004; Thompson and Schofield, 2007).

Regardless of the approach taken, studies on customer satisfaction have demonstrated that satisfaction stimulates repeat visits, positive recommendations and thereupon new customers, reputation enhancement, higher acceptance of price increases, and consequently overall higher profitability (Anderson et al. 1994; Baker and Crompton, 2000; Kozak and Rimmington, 2000; Homburg et al., 2005; Munier and Camelis; 2013). So far the issue of customer satisfaction, consumer expenditure and consequently firms' economic benefits remains only partially examined and Anderson (1996), Anderson et al. (1994; 1997) and Anderson and Mittal (2000) can be considered the pioneers in studies related to the link between customer satisfaction and profitability. According to them firms that invest in customer satisfaction will enjoy economic returns. The main conceptual rationale behind their studies is that "high customer satisfaction should indicate loyalty for current customers, reduced price elasticities, insulation of current customers from competitive efforts, lower costs of future transactions, reduced failure costs, lower costs of attracting new customers, and an enhanced reputation for the firm" (Anderson et al., 1994, p. 55). Although further research (Anderson et al., 1997) has examined the differences in this nexus between goods and services, loyalty still remains one of the pillars on which the theory of the Satisfaction-Profitability Chain is based. However, to that regards, it is important to note that loyalty might not be as important to destinations as it is for other businesses or services (Kozak and Rimmington, 2000). Although past studies (Oliver and Burke, 1999; Hui et al., 2007) demonstrated that tourists' overall level of satisfaction with the destination influences the intention to revisit the destination, the dis/satisfaction with various components of the holiday experience (i.e. pre-trip services, services at the destination, transit rout services) leads to overall dis/satisfaction (Neal and Gursoy, 2008), influencing future intentions (Kozak and Rimmington, 2000). Furthermore, although loyal customers mean more customers in general, lower impact of price fluctuations, and less costs from the firm's side to attract new customers due to positive word of mouth, in an industry like tourism affected by fixed capacity, are loyal (repeat) customers more likely to spend more at the destination? Past research has reported contradictory results (Chang et al., 2013; Alegre and Juaneda, 2006 cited in Zhang et al., 2010; Oppermann, 1996).

Along the continuum of the satisfaction-profitability chain, but with a different approach from Anderson et al. (1994), Homburg et al. (2005) investigated the relationship between customer satisfaction and willingness to pay. Based on the equity theory, they hypothesized that “when customer experience elevated states of satisfaction, they perceive a high outcome of an exchange and therefore are willing to pay more [...] because this still results in an equitable ration of outcome to input” (Homburg et al., 2005, p. 85). The findings of their study revealed a positive relationship between consumer satisfaction and willingness to pay.

In the tourism literature, few studies have examined the relationship between consumer satisfaction and expenditure (Zhang et al, 2010) and there is the need to better understand the role of visitors’ satisfaction in influencing individual’s expenditure patterns (Kim et al., 2010). Of the existing studies, satisfaction has resulted to be a significant predictor of expenditure in the case of festival and events (Kim et al., 2010), purchase at travel agencies (Chen and Chang, 2012), and in the hotel industry (Kim and Cha, 2002). So far, the relationship between satisfaction with destination attributes and expenditure is a widely under-searched topic and in light of the neoclassical theory a new approach to this issue must be taken.

## **Data and structure of the questionnaire**

### *The survey*

The Bank of Italy (*Banca d'Italia*) annually conducts the survey entitled “International Tourism in Italy” in order to determine the tourism balance of payments. The main aim of this survey is to monitor travel expenditure and length of stay of inbound and outbound visitors from/to Italy. Travel expenditure includes the total consumption of goods and services made in the country visited divided into five expenditure categories. The inbound–outbound frontier survey is the technique adopted for the collection of the data.

The stratified sampling method was applied (using different type of stratified variables per each type of frontier), and face–to–face interviews are made at national borders (including highways, railway, airports, and harbours). Sampling is carried out independently at each type of frontier. Tourists are interviewed at the end of the trip, when they are returning to their place of habitual residence.

Interviews are conducted in different moment of the day, during both working days and holidays, and month by month with a fixed number of interviews per each period of survey. The questionnaires are anonymous, and written in 14 languages.

The questionnaire can be divided into four main sections: 1. socio–demographic characteristics of the interviewees (gender, age, occupation, and residence); 2. information on the trip (number of nights spent during the trip, type of accommodation, cities visited, means of transportation, motives of the trip, organization of the trip); 3. information on the expenditure (total expenditure divided into different categories of expenditure, means of payment); 4. level of satisfaction with different aspects of the trip and overall satisfaction with the destination.

In this study we focus on the 1,030 foreign visitors who visited the provinces of Bolzano, Trento, and Belluno in 2011. The first two provinces compose the Trentino South–Tyrol region, while Belluno is one of the provinces of the Veneto region. These three provinces are located in Northern Italy (see Figure 1) and are famous for the Dolomite range which is located across the three provinces. Finally, we take into consideration only international visitors whose main purpose of trip is “tourism, holiday, and leisure”.

### *Descriptive analyses*

The survey offers detailed information on the amount of money spent in the five main categories of a typical travel budget: 1) “Accommodation” (hotel, apartment for rent, campsite, etc.), which also includes expenditure on food and beverage within accommodation premises; 2) “Food and beverage” consumed outside accommodation premises; 3) “Internal transportation” within the visited destination, including purchase of fuel; 4) “Shopping”, including souvenirs, gifts, clothes, food and beverages, etc. purchased only for personal use; 5) “Other services”, like museums, shows, entertainment, guided excursions, rented vehicles, language courses, etc.

The sample consists of 89.13% tourists (i.e. people who spent at least one night in Italy), and 10.87% day–visitors. During the trip, the great majority of the sample stated to have incurred in costs for food and beverage (85.92%), internal transportation (78.16%), shopping (77.67%), and, as expected, on the trip as a whole (97.8%). In contrast, only 39.71% of the sample stated to have incurred in costs for

other services. When describing the expenditure behaviour of the whole sample (see Table 1 for the average amount spent per night and Appendix for the proportion of money spent per night on each expenditure item), we can observe that visitors have spent a large part of their travel budget for accommodation (about 43%), spending on average €74. This is followed by the expenditure on food and beverages, which accounts for 21% of the total travel budget with an average expenditure of €31, and shopping (17% of the total travel budget and €28 spent on average). The least important expenditure categories are internal transportation and other services, which account for 11% and 6% respectively, with an average expenditure of €19 and €13.

Another important group of variables collected through the survey regards the overall level of satisfaction with the destination and with the following aspects of the trip: hospitality and friendliness of the people (“Hospitality”); cities and works of art (“Art”); landscape and natural environment (“Landscape”); hotels and other accommodation (“Accommodation”); “Food and beverage”; price and cost of living (“Price”); quality and variety of products offered in stores (“Products sold”); information and tourist services (“Information”); safety of tourists (“Safety”). A 10–point Likert scale was used, where [1] was *Very unsatisfied* and [10] *Very satisfied*. Figure 2 displays the percentage distribution of the level of satisfaction per each observed item. The percentage of visitors who attributed a value lower than 6 to the different aspects of the trip is sharply low, with the exception of “Price”. For this reason, in the following econometric analysis we have transformed these evaluations into dichotomous variables, equal to 1 if respondents reported being very satisfied (i.e. if they attributed either 9 or 10) with the item considered, and 0 in all other cases (i.e. if they attributed a value lower than 9).

According to the table reported in the Appendix, tourists spend on average 9 nights in the Dolomite area, mainly visiting only one city during the trip (79%) and travelling with other people (79%). For approximately 22% of the sample this is the first visit to Italy, while 42% of the visitors has already been on more than 5 trips to Italy in the past. Visitors mainly come from Germany (38%), Austria (14%), and other European countries (39%), while only 9% of the visitors come from a country outside Europe. Finally, about half of the sample is under 45 years of age.

### **The econometric model**

In order to investigate and describe the characteristics of the expenditure behaviour of international visitors, the analysis mainly focuses on how the willingness to spend and the amount of money spent for each tourist expenditure items is affected by the total travel budget, the proportion allocated to each of the other tourism expenditure categories, and the level of satisfaction.

The most suitable model to reach this aim is the Tobit model (Tobin, 1958), or one of its generalizations, since it can be applied when the dependent variable is nonnegative, thus essentially continuous over strictly positive values, and it also takes zero values with positive probability (i.e. a nontrivial fraction of the population takes zero value). For this type of dependent variable, the use of the multiple regression model, estimated by using the well-known OLS method, would produce biased and inconsistent estimates of parameters (Amemiya, 1984; Maddala, 1983).

Another important characteristic of the expenditure is that the monetary value declared by the individual is the result of two possible processes: the individual decides whether or not to purchase something (selection stage) and then s/he decides how much money to spend for that purchase (outcome stage). Therefore, to observe a positive level of expenditure, two distinct hurdles must be cleared. In this context, it is preferable to adopt a two-stage generalization of the Tobit model, i.e. the double-hurdle model (Cragg, 1971). This model is performed through the estimation of two separate regression models: the selection stage is estimated by the Probit model, in order to estimate the probability to spend or not to spend on something; the outcome stage is estimated by the OLS regression model, in order to estimate the average amount of money spent in a particular expenditure category. In this way, throughout the estimation of the double-hurdle model we can obtain two different sets of relevant independent variables (one for each stage), whereas the estimation of the standard Tobit model identifies a single set of variables to measure the effect of both the selection and the outcome stage.

In order to avoid the problem of sample selection -defined as an omitted variable problem (Heckman, 1976)- in this study the estimator proposed by Heien and Wessells in the early '90s is adopted (Heien and Wessells, 1990; see, for some application, Byrne et al., 1996; Manrique and Jensen, 1997). This estimator is called inverse Mill's Ratio (MR) and it is calculated per each observation through the

estimates obtained in the first stage, i.e. through the estimation of the Probit model. Contrary to the traditional Heckman two-step estimator, the MR variable allows correcting the problem of sample selection using all the observations in each stage. Furthermore, the MR variable is incorporated within the set of explanatory variables used in the regression estimated at the second stage, playing the fundamental role to link the two stages. It is important to note that if the coefficient estimated of the MR variable is not significantly different to zero, the decision to spend and the decision on how much money to spend are independent and the sample selection problem is unimportant, i.e. the sample selection rule ensures that all potential observations are sampled, so that the Tobit model can be used instead of the double-hurdle model.

#### *The set of dependent and independent variables*

In order to fulfil the aim of this study, five double-hurdle models, one per each expenditure item (“Accommodation”, “Food and beverage”, “Internal transportation”, “Shopping”, “Other services”) were separately estimated. In this way, the visitors’ expenditure behaviour was analysed per each item of expenditure, allowing a different set of explanatory variables to influence the behaviour.

To incorporate both the decision-making process and the neoclassical economic theory of consumer – or rather visitor– behaviour in the same econometric model is still, to the best knowledge of the authors, an open question. Knowing the limitations in the estimation of an AIDS model and of a multivariate Tobit model (i.e. the restrictive economic conditions and the limitation in the number of simultaneous equations that can be estimated), in this study we have decided to adopt the double-hurdle model, to capture the two stages of the decision-making process and to incorporate the neoclassical economic theory in the model by working on the set of explanatory variables. In particular, among the explanatory variables, which are listed and synthetically described in the Appendix, we have included: the total amount that the visitor has decided to allocate for that specific trip (“total travel expenditure”); the percentage of the total travel expenditure allocated for the expenditure in a particular tourist category (“% spent in shopping”, “% spent in food and beverage”, “% spent in other services”, “% spent in transportation”, “% spent in accommodation”), excluding that modelled.

Note that income is not included among the set of explanatory variables, since this information is not collected through the survey used in this study, and that the total amount of money spent at the destination is used as a proxy for the budget constraint. In this way, the estimated change can be observed separately with regards to the willingness to spend (selection stage) and the amount of money spent (outcome stage) in a particular tourism category, due to a unitary change either in the total budget allocated for the trip or in the share of expenditure allocated for another category.

### **Model results**

The five double-hurdle models were estimated using White's robust standard variance-covariance matrix (White, 1980) to correct the possible heteroskedasticity of the error term. The backward results for the first stage of the model (selection) are reported in Table 2, while Table 3 presents the backward results for the second stage of the model (outcome). The results of the first stage model are reported as marginal effects calculated at the median value of each explanatory variable (see Appendix for the median values).

Table 3 shows that MR is significant for each model, and this implies that the decisions 1) to spend or not to spend, and 2) how much to spend are dependent and can be explained by different sets of explanatory variables for each of the tourism expenditure category considered. Furthermore, the significance of MR suggests that the double-hurdle model is appropriate.

#### *The influence of the total travel budget and its allocation*

As we can observe in table 2, an increase in the total budget dedicated to the trip positively affects the willingness to spend in almost all tourism expenditure categories, with the exception of the "Food and beverage" category. Furthermore, the willingness to spend on "Other services" seems to be the most affected by a change in the total travel budget. The willingness to spend on "Accommodation", i.e. the probability to be a tourist other than a day-visitor, as well as on "Internal transportation", "Other services", and "Shopping" is negatively and significantly affected by an increase in the percentage spent on all other tourism categories. Only the willingness to spend on "Food and beverage" is not

affected by expenditure in other tourism categories. In particular, a change in the percentage spent on other services does not significantly affect the willingness to spend on “Food and beverage”. In each model, we compared the estimated marginal effects, calculated for the explanatory variables regarding the percentage of expenditure in each category, and for each variable we obtained the lowest results in the “Accommodation” model.

This result indicates that the willingness to spend for accommodation is the least affected by the way in which the total tourism budget is allocated for the different categories. The willingness to spend in “Internal transportation” is significantly affected by a change in the allocation of the total budget between the different tourism expenditure categories, although changes are minor. Looking at the willingness to spend for “Other services”, we can observe that a percentage change in the expenditure on internal transportation produces the least change. Finally, the willingness to spend for “Food and beverage” is more affected by a percentage change in the expenditure dedicated to shopping than by a change in other categories, and, conversely, the willingness to spend for “Shopping” is most affected by a percentage change in spending on “Food and beverage”. To conclude, a percentage change in the amount of money spent for internal transportation is the one that least affects the willingness to spend in other categories.

Moving on to analyse the results reported in Table 3, we can first of all observe that a €100 increase in the total tourist budget, keeping all other explanatory variables constant, produces an increase in the average spending by about €41 for “Accommodation”, €24 for “Shopping”, €17 for “Food and beverage”, €10 for “Internal transportation”, and the remaining €8 for expenditure in “Other services”. A unitary increase (i.e. a 1% change) in the expenditure for shopping mostly affects the expenditure on “Accommodation”, with an average €1.4 decrease, and a €1 decrease for the expenditure on both “Internal transportation” and “Other services”. The expenditure on “Food and beverage” is the least influenced by this kind of change, with a €0.67 reduction. Similarly, a unitary increase in the expenditure on food and beverage mainly affects the expenditure on “Accommodation” with a €1.1 average decrease (the other expenditure categories are subject to a €0.88-0.97 average decrease). A unitary change in the expenditure on internal transportation produce the highest effect on “Accommodation”, with a €1.4 average decrease, followed by “Shopping”



(€1.3), “Other services” (€1), and “Food and beverage” (€0.7). A unitary change in the expenditure on other services produces the highest effect on the average expenditure for both “Accommodation” and “Shopping” (about €1.5 on average). Finally, a unitary increase in the expenditure for accommodation mainly affects the expenditure on “Shopping”, with a €1.3 average decrease, followed by a €1 average decrease in the expenditure allocated to both “Internal transportation” and “Other services”.

### *The influence of satisfaction*

Turning our attention to how the overall satisfaction and the satisfaction with different aspects related to the trip affect the willingness to spend, we can observe that, in most cases, when the tourist is very satisfied with some aspects of the trip the probability to spend on some tourism categories increases. In particular, overall satisfaction seems to positively affect the willingness to spend on “Other services”, while the other categories of tourism expenditure are affected by satisfaction with particular aspects of the trip. The probability to be a tourist, instead of a day–visitor, increases when respondents feel safe and are satisfied with the landscape and the natural environment. In contrast, the probability to be a day–visitor increases when the respondent is satisfied with food and beverage. When the visitor feels safe, the willingness to spend on “Food and beverage” and on “Shopping” also increases. Furthermore, it is relevant to note that an international tourist that is very satisfied with the landscape and natural environment is more willing to spend on “Accommodation”, “Food and beverage”, and “Internal transportation”. This means that the higher the satisfaction with the natural characteristics of the place visited, the higher the probability of stopping at restaurants/agritourism infrastructures surrounded by nature, and to move within the Dolomite area in order to admire the landscape.

Moving on to analyse the results reported in Table 3, we can observe that the average amount of money spent on “Accommodation” and “Other services” is not affected by the level of satisfaction with the visit. The satisfaction with the landscape negatively influences the average expenditure on “Internal transportation”. This result seems to be in contrast with what we have observed in Table 2, but it can probably be explained by the fact that visitors who are very satisfied with the landscape move around more but for shorter distances (so that the amount of money spend is on average less).

Visitors that are very satisfied with cities and works of art as well as with accommodation, spend on average respectively about €5 and €6 more on “Shopping”.

#### *The influence of the characteristics of both the trip and the visitors*

As we can observe from Tables 2 and 3, the frequency with which respondents have visited any city in Italy in the past affects both the willingness to spend and the amount of money spent on different tourism categories. In particular, those who are visiting Italy for the first time are much less willing to spend for other services, followed by shopping, but only slightly less willing to spend for accommodation, food and beverage, and internal transportation. Furthermore, as regards food and beverage, not only they are less likely to spend, when they do it, on average they spend €6 less than repeat visitors. On the other hand, when they take the decision to spend on “Internal transportation”, they spend on average €8 more than repeat visitors, meaning that they travel long distances in order to visit and discover different places or they use transportation means of higher standards and costs (e.g. first class tickets, etc.). In contrast, those who have already visited Italy up to 5 times in the past are more willing to spend on “Other services” and, in fact, spend on average €6 more on this category of expenditure than other visitors. As regards the composition of the travel group, we can observe that visitors who are travelling alone spend on average €10 less on “Accommodation”, €7 less on “Other services”, and €5 less on “Internal transportation”. Finally, the most relevant characteristic of visitors seems to be their origin. As we can observe, the lower the distance between the place of residence and the place visited, the lower the willingness to spend, in particular for “Other services” and “Shopping”. Nevertheless, the amount of money spent on average on “Internal transportation”, “Other services”, and “Shopping” is significantly reduced only if visitors come from Austria -a neighbouring state to the Dolomite area- respectively by about €13, €12, and €9.

#### **Discussion and Conclusion**

The aim of this study was twofold: a) to determine the influence of satisfaction with different attributes of the destination on tourists’ spending behaviour; b) to determine the relationship between

different expenditure categories. A two-step process was undertaken in order to determine a) the initial decision to spend, and b) how much to spend.

A review of the literature on the utility function (Zheng and Zhang, 2011; Tribe, 2005; Deaton and Muellbauer, 1980; Syriopoulos and Sinclair, 1993) revealed a three-stage budgeting approach whereby tourists first allocate their budget between total tourism expenditure and consumption of other goods and services, then they allocate their tourism budget among different destinations, including the home country, finally, they choose how to allocate their tourism budget among various goods and services offered by the selected destination(s). Considering the validity of the utility function and thus considering that tourists, within their level of income, set a fixed budget for their holidays, this study analysed the last stage of the process and has demonstrated that the different services within the tourism value chain are competing with each other in terms of tourism spending. An increase in spending in one category means a decrease in spending in the other categories.

In specific, this study has demonstrated that when tourists are deciding whether to spend or not, accommodation and food and beverage are the least affected (however still affected) and ancillary services (i.e. museums, shows, entertainment, guided excursions, rented vehicles, language courses, etc.) are the most affected. In the event tourists are ready to increase their total travel budget, they allocate the extra money first of all to accommodation, then to shopping, food and beverage, internal transportation and at last to other services. Although accommodation is one of the least negatively affected categories in the initial decision to incur in an expense, and the most positively affected by an increase in the total budget, when the analysis focuses on spending variation and the relationship between each different expenditure category, accommodation results to be the most affected. It can be therefore concluded that tourists, if drawn to spend more for personal and ancillary services, transportation, shopping, and food and beverage, and not willing to increase the total budget spent, they will mainly use part of the budget initially allocated for accommodation. This means that tourism is either ready to compete with other services and consumables, or when destination managers are trying to induce tourists to spend more at the destination through the organisation of events, entertainment and supply of additional amenities, this will negatively affect the accommodation sector first and shopping second.

Furthermore, this study has investigated the impact of satisfaction on tourists' spending behaviour. This study shows that satisfaction with different aspects of the destination influences tourists' expenditure. Although overall satisfaction exerts an influence only on the expenditure on ancillary services, it is important to pay attention to the influence exerted by the landscape and the natural environment. In previous studies satisfaction with elements like natural landscape, flora and fauna played a significant role in tourists' overall satisfaction (Pritchard and Havitz; 2006; Maunier and Camelis, 2013). In the present study satisfaction with the landscape also positively affects the choice of tourists to spend on accommodation, internal transport, and food and beverage. This result should work as a warning to those tourist destinations where the maintenance of landscape and natural environment is partially neglected and left to the good will of private landowners. As most landowners are not part of the tourism sector, it is important that destination managers fully comprehend the effect of a beautiful and unspoilt natural environment on tourists' expenditure and start cooperate with other sectors (as for example the farming sector) to assure maintenance and enhancement of the natural environment.

## References

- Alegre, J. and Garau, J. (2010). Tourist satisfaction and dissatisfaction. *Annals of Tourism Research*, Vol 37, No 1, pp 52–73.
- Alegre, J. and Pou, L. (2004). Micro-economic determinants of the probability of tourism consumption. *Tourism Economics*, Vol 10, No 2, pp 125–144.
- Alegre, J., and Juaneda, C. (2006). Destination loyalty consumers' economic behavior. *Annals of Tourism Research*, Vol 33, No 3, pp 684–706.
- Alegre, J., Mateo, S. and Pou, L. (2013). Tourism participation and expenditure by Spanish households: The effects of the economic crisis and unemployment. *Tourism Management*, Vol 39, pp 37–49.
- Amemiya, T. (1974), Multivariate regression and simultaneous equation models when dependent variables are truncated normal. *Econometrica*, Vol 42, No 6, pp. 999–1012.
- Amemiya, T. (1984), Tobit Models: a Survey, *Journal of Econometrics*, Vol 24, No 1, pp 3–26.
- Anderson, E. W., Formell, C., and Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of Marketing*, Vol 58, No 3, pp 53–66.
- Anderson, E.W. (1996), Customer satisfaction and price tolerance. *Marketing Letters*, Vol 7, No 3, pp 265-274
- Anderson, E.W., and Mittal, V. (2000), Strengthening the satisfaction-profit chain. *Journal of Service Research*, Vol 3, No 2, pp 107-120.
- Anderson, E.W., Fornell, C., and Lehmann, D.R. (1997), Customer satisfaction, market share, and profitability: findings from Sweden. *Journal of Marketing*, Vol 58, pp 53-66.
- Baker, D., Crompton, J., 2000. Quality, satisfaction and behavioral intentions. *Annals of Tourism Research*, Vol 27, No 3, pp 785–804.
- Barquet, A., Brida, J.G., Osti, L., Schubert, S. (2011), An analysis of tourists' expenditure on winter sports events through the Tobit censored model. *Tourism Economics*, Vol 17, No 6, pp 1197–1217.
- Belenkiy, M., and Riker, D. (2013), Modeling the International Tourism Expenditures of Individual Travelers. *Journal of Travel Research*, Vol 52, DOI: 10.1177/0047287512461180

- Bilgic, A., Florkowski, W., Yoder, J., and Schreiner, D. (2008). Estimating fishing and hunting leisure spending shares in the United States. *Tourism Management*, Vol 29, pp 771–782.
- Brida, J.G., and Scuderi, R. (2013). Determinants of tourist expenditure: A review of microeconomic models. *Tourism Management Perspectives*, Vol 6, pp 28–40
- Brida, J.G., Disegna, M., and Osti, L. (2012), The effect of authenticity on visitors' expenditure at cultural events. *Current Issues in Tourism*, Vol 16, No 3, pp 266–285.
- Brida, J.G., Disegna, M., and Osti, L. (2013a), Visitors' expenditure behaviour at cultural events: the case of Christmas markets. *Tourism Economics*, Vol 19, No 5, pp 1173-1196, DOI: 10.5367/te.2013.0237.
- Brida, J.G., Disegna, M., and Scuderi, R. (2013b), Visitors to two types of museums: do expenditure patterns differ? *Tourism Economics*, Vol 19, No 5, pp 1027-1047, DOI: 10.5367/te.2013.0295.
- Byrne, P.J., Capps, O.Jr., and Saha, A. (1996), Analysis of food-Away-from-Home Expenditure Patterns for U.S. Households, 1982-89. *American Journal of Agricultural Economics*, Vol 78, pp 614–627.
- Chadee, D., and Mattsson, G. (1996). An empirical assessment of customer satisfaction in tourism. *The Service Industries Journal*, Vol 16, No 3, pp 305-320.
- Chang, K.L, Chen, and C.M., Meyer, T. (2013), A comparison study of travel expenditure and consumption choices between first-time and repeat visitors. *Tourism Management*, Vol 35, pp 275-277.
- Chen, C.-M., and Chang, K.-L. (2012). The influence of travel agents on travel expenditures. *Annals of Tourism Research*, DOI:10.1016/j.annals.2012.01.005
- Cragg, J. (1971), Some statistical models for limited dependent variables with application to the demand for durable goods, *Econometrica*, Vol 39, pp 829–844.
- Craggs, R., and Schofield, P. (2009), Expenditure-based segmentation and visitor profiling at The Quays in Salford, UK, *Tourism Economics*, Vol 15, No 1, pp 243–260.
- Deaton, A. and Muellbauer, J. (1980), *Economics and consumer behavior*. Cambridge: Cambridge university Press
- Divisekera, S. (2010), Economics of tourist's consumption behavior: Some evidence from Australia.

- Tourism Management*, Vol 31, pp 629–636.
- Enright, M.J., and Newton, J. (2004), Tourism destination competitiveness: A quantitative approach. *Tourism Management*, Vol 25, No 6, pp 777-788.
- Heckman, J.J. (1976), Sample selection bias as a specification error, *Econometrica*, Vol 47, No 1, pp 153–161.
- Heien, D., and Wessels, C. (1990), Demand system estimation with micro data: a censored regression approach, *Journal of Business & Economic Statistics*, Vol 8, No 3, pp 356–371.
- Homburg, C., Koschate, N., and Hoyer, W.D. (2005), Do satisfied customers really pay more? A study of the relationship between customers satisfaction and willingness to pay. *Journal of Marketing*, Vol 69, pp 84-96.
- Hong, G. S., Kim, S. Y., and Lee, J. (1999), Travel expenditure patterns of elderly households in the US, *Tourism Recreation Journal*, Vol 24, No 1, pp 43–52.
- Hui, T., Wan, D., Ho, A., 2007. Tourists' satisfaction, recommendation and revisiting Singapore. *Tourism Management*, Vol 28, No 4, pp 965–975.
- Hung, W.-T., Shang, J.-K., and Wang, F.-C. (2012), Another look at the determinants of tourism expenditure. *Annals of Tourism Research*, Vol 39, No 1, pp 495–498.
- Jang, S., and Ham, S. (2009), A double-hurdle analysis of travel expenditure: Baby boomer seniors versus older seniors, *Tourism Management*, Vol 30, No 3, pp 372–380.
- Kim, S.S., Prindeaux, B., Chon, K. (2010), A comparison of results of three statistical methods to understand the determinants of festival participants' expenditures. *International Journal of Hospitality Management*, Vol 29, pp 297-307.
- Kim, W.G., Cha, Y., 2002. Antecedents and consequence of relationship quality in hotel industry. *International Journal of Hospitality Management*, Vol 21, No 4, pp 321–338.
- Kim, W.G., Kim, T.(T.), Gazzoli, G., Park, Y., Kim, S.H., and Park, S.S. (2011), Factors affecting the travel expenditure of visitors to Macau, China. *Tourism Economics*, Vol. 17, No 4, pp 857– 883.
- Klaus, P. (1985). Quality Epiphenomenon: The Conceptual Understanding of Quality in Face-to-face Service Encounters, in John A. Czepiel, Michael R. Solomon and Carol F. Surprenant (eds) *The*

- Service Encounter: Managing Employee/Customer Interaction in Service Business* (pp. 17–33).  
Lexington, MA: Lexington Books.
- Kozak, M., Rimmington, M., 2000. Tourist satisfaction with Mallorca, Spain, as an off-season holiday destination. *Journal of Travel Research*, Vol 38, No 3, pp 260–269.
- Lee, C. (2001), Determinants of recreational boater expenditures on trips, *Tourism Management*, Vol 22, No 6, pp 659–667.
- Leones, J., Codby, B., and Crandall, K. (1998), Tracking expenditures of the elusive nature tourists of Southeastern Arizona, *Journal of Travel Research*, Vol 36, No 3, pp 56–64.
- Lim, C. (2006), A survey of tourism demand modelling practice: Issues and implications, in Dwyer & P. Forsyth (Eds.), *International Handbook on the Economics of Tourism* (pp 45–72). Cheltenham, UK: Edward Elgar Publishing.
- Maddala, G. S. (1983), *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge University Press, Cambridge.
- Manrique, J., and Jensen, H.H. (1997), Spanish Household Demand for Convenience Meat Products. *Agribusiness*, Vol 13, No 6, pp 579–586.
- Marzetti Dall’Aste Brandolini S., and Disegna, M. (2012), Demand for the quality conservation of Venice, Italy, according to different nationalities, *Tourism Economics*, Vol 18, No 5, pp 1019-1050, DOI: 10.5367/te.2012.0157.
- Munier, C., and Camelis, C. (2013), Toward an identification of elements contributing to satisfaction with the tourism experience. *Journal of Vacation Marketing*, Vol 19, No 1, pp 19-39.
- Neal, J.D., and Gursoy, D. (2008), A multifaceted analysis of tourism satisfaction. *Journal of Travel Research*, Vol 47, pp 53-62.
- Oliver, R. & Swan, J. (1989). Equity and disconfirmation perceptions as influences on merchant and product satisfaction. *Journal of consumer research*, Vol 16, No 3, pp 372-383.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, Vol 17, No 4, pp 460-469.
- Oliver, R., Burke, R., 1999. Expectation processes in satisfaction formation: a field study. *Journal of*



- Service Research*, Vol 1, No 3, pp 196–214.
- Oppermann, M. (1996), Visitation of tourism attractions and tourist expenditure patterns—repeat versus first-time visitors, *Asia Pacific Journal of Tourism Research*, Vol 1, No 1, pp 61-68.
- Pritchard, M.P., and Havitz, M.E. (2006), Destination appraisal. An analysis of critical incidents. *Annals of Tourism Research*, Vol 33, No 1, pp 25-46.
- Sirgy, J. (1984). A social cognition model of consumer satisfaction/dissatisfaction. *Psychology & Marketing*, Vol 1, No 2, pp 27-44.
- Syriopoulos, T. and Sinclair, M. (1993), An econometric study of tourism demand: the aids model of us and European tourism in Mediterranean countries. *Applied Economics*, Vol 25, pp 1541–1552.
- Tobin, J. (1958), Estimation of Relationships for Limited Dependent Variables, *Econometrica*, Vol 26, No 1, pp 24–36.
- Tribe J. (2005), *The Economics of recreation, Leisure & Tourism*, 3rd ed. Elsevier: Amsterdam.
- Wang, Y., and Davidson, M.C.G. (2010), A review of micro-analyses of tourist expenditure, *Current Issues in Tourism*, Vol 13, No 6, pp 507–524.
- Weagley, R.O., and Huh, E. (2004). Leisure expenditures of retired and near-retired households. *Journal of Leisure Research*, Vol 36, No 1, pp 101-127.
- White, H. (1980). A heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity, *Econometrica*, Vol 48, No 4, pp 817–838.
- Wu, L., Zhang, J., and Fujiwara, A. (2013). Tourism participation and expenditure behaviour: analysis using a Scobit Based Discrete–Continuous choice model. *Annals of Tourism Research*, Vol 40, pp 1–17, Doi: 10.1016/j.annals.2012.09.002
- Zhang, L., Qu, H., and Ma, J.(E.) (2010), Examining the Relationship of Exhibition Attendees’ Satisfaction and Expenditure: The Case of Two Major Exhibitions in China, *Journal of Convention & Event Tourism*, Vol 11, No 2, pp 100–118.
- Zheng. B., and Zhang, Y. (2011), Household Expenditures for Leisure Tourism in the USA, 1996 and 2006. *International Journal of Tourism Research*, Vol 15, No 2, pp 197-208.

## FIGURES

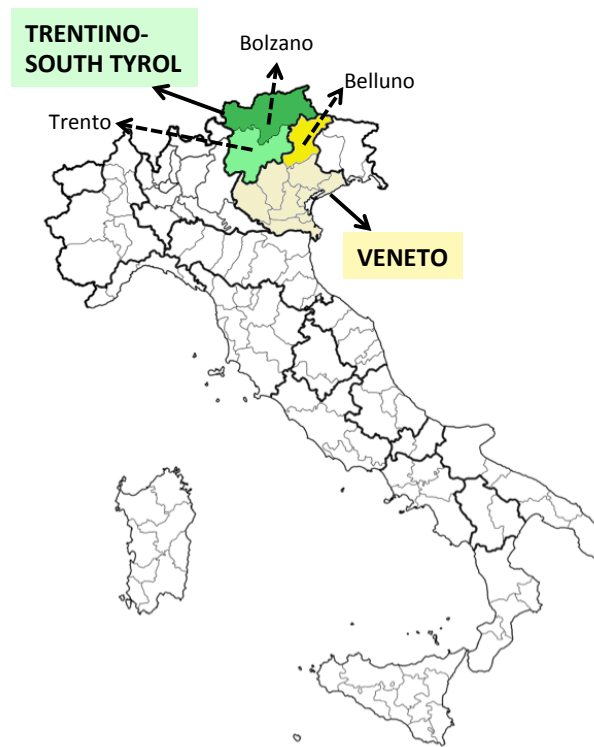


Figure 1. Map of study site.

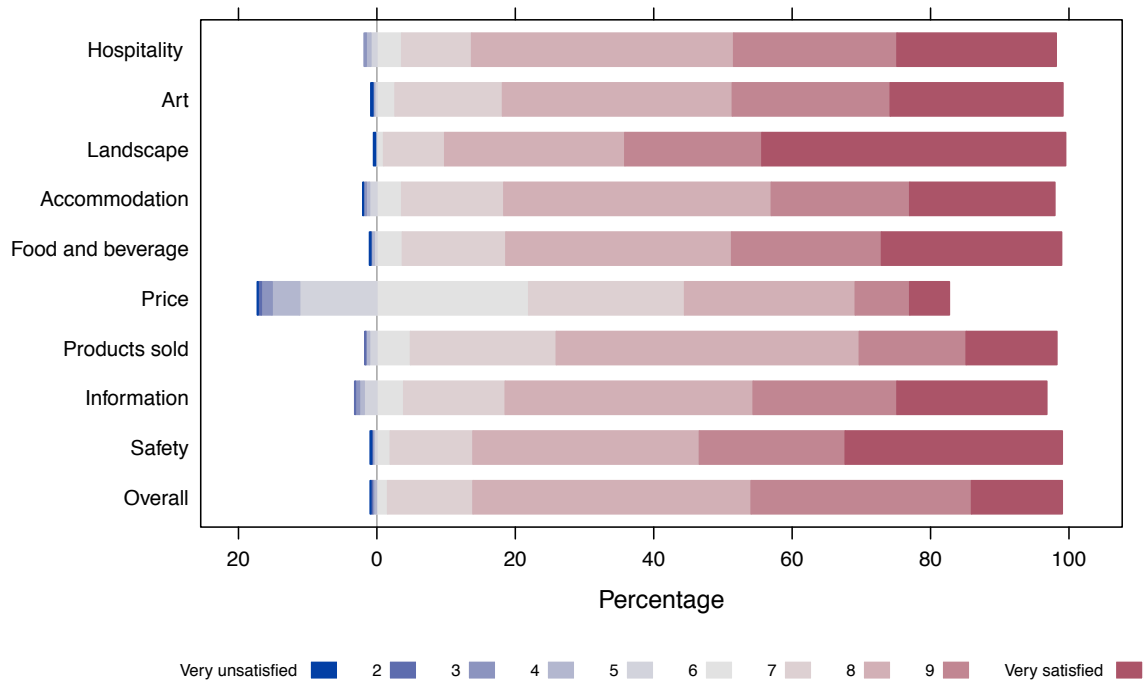


Figure 2. Level of overall satisfaction and satisfaction with different aspects of the trip.

## TABLES

Table 1. Mean (median) expenditure by different tourism categories.

Item	Whole sample	Sub-sample of spenders
Accommodation	74.23 (51.86)	83.29 (60.00)
Food and beverage	31.01 (20.00)	36.10 (25.00)
Internal transportation	18.62 (8.33)	23.83 (12.50)
Shopping	28.18 (11.55)	36.28 (16.67)
Other services	12.92 (0.00)	32.53 (16.67)
Total travel expenditure	164.97 (125)	168.73 (128.41)

Table 2. Determinants of willingness to spend for a tourism category.

	First stage: Would you like to spend or not on...?				
	Accommodation	Internal transportation	Other services	Food and Beverage	Shopping
	I	II	III	IV	V
<i>Travel expenditure</i>					
Total travel expenditure	0.0001 (0.46) <sup>a</sup>	0.0001 (1.54)	0.0003 (2.62)		0.0001 (2.08)
% spent in shopping	-0.0001 (-0.46)	-0.0003 (-1.92)	-0.0164 (-8.91)	-0.0010 (-2.35)	—
% spent in food and beverage	-0.0001 (-0.45)	-0.0003 (-1.88)	-0.0167 (-8.54)	—	-0.0021 (-3.24)
% spent in other services	-0.0001 (-0.47)	-0.0003 (-1.95)	—		-0.0018 (-3.68)
% spent in transportation	-0.0001 (-0.47)	—	-0.0149 (-7.87)	-0.0005 (-1.97)	-0.0011 (-3.00)
% spent in accommodation	—	-0.0003 (-1.97)	-0.0170 (-9.28)	-0.0009 (-2.38)	-0.0015 (-3.35)
<i>Are you satisfied with the following aspects related to the trip?</i>					
Safety	0.0001 (0.53)			0.0268 (2.18)	0.0209 (2.07)
Landscape	0.0001 (0.52)	0.0174 (1.97)		0.0187 (1.67)	
Food & beverage	-0.0001 (-0.43)	0.0126 (2.00)			
Hospitality		-0.0079 (-2.00)			
Information				-0.0256 (-2.6)	
Overall satisfaction			0.0664 (2.04)		
<i>Characteristics of the trip</i>					
Number of nights			0.0024 (2.51)		0.0010 (2.34)
First time in Italy	-0.0001 (-0.49)	-0.0312 (-2.44)	-0.2089 (-2.65)	-0.0470 (-2.21)	-0.0907 (-2.70)
Italy visited up to 5 times		-0.0079 (-1.86)	0.1019 (2.72)		-0.0340 (-2.85)
Cities in the Dolomite area					-0.0110 (-1.95)
Alone			-0.3093 (-4.19)		-0.0423 (-1.86)
<i>Characteristics of the visitor</i>					
Austria	-0.0118 (-1.38)	-0.1142 (-2.92)	-0.6025 (-6.70)	-0.1000 (-2.44)	-0.1485 (-3.44)
Outside EU			0.2083 (4.56)	0.0134 (1.89)	0.0158 (2.29)
Germany	-0.0001 (-0.71)	-0.0054 (-1.77)	-0.1503 (-3.73)		-0.0201 (-2.39)
35-44 years old				0.0094 (1.80)	
45-64 years old			-0.0903 (-2.40)		

Notes:

— indicates that the variable is not used in the model. <sup>a</sup> Estimated Marginal Effect and z statistic in brackets.

I: N. of obs = 959; Wald chi2(11) = 149.97; Prob >  $\chi^2$  = 0; Log pseudolikelihood = -84.174; McKelvey and Zavoina's R<sup>2</sup> = 0.831

II: N. of obs = 959; Wald chi2(12) = 30.00; Prob >  $\chi^2$  = 0; Log pseudolikelihood = -322.919; McKelvey and Zavoina's R<sup>2</sup> = 0.456

III: N. of obs = 959; Wald chi2(14) = 214.69; Prob >  $\chi^2$  = 0; Log pseudolikelihood = -442.517; McKelvey and Zavoina's R<sup>2</sup> = 0.589

IV: N. of obs = 959; Wald chi2(10) = 157.37; Prob >  $\chi^2$  = 0; Log pseudolikelihood = -280.217; McKelvey and Zavoina's R<sup>2</sup> = 0.360

V: N. of obs = 959; Wald chi2(14) = 150.13; Prob >  $\chi^2$  = 0; Log pseudolikelihood = -357.326; McKelvey and Zavoina's R<sup>2</sup> = 0.526

Table 3. Determinants of spending for a tourism category.

Second stage: How much would you like to spend on...?					
	Accommodation	Internal transportation	Other services	Food and Beverage	Shopping
	I	II	III	IV	V
<i>Travel expenditure</i>					
Total travel expenditure	0.412 (11.39) <sup>a</sup>	0.096 (4.67)	0.084 (4.15)	0.168 (8.21)	0.242 (4.08)
% spent in shopping	-1.367 (-13.01)	-1.007 (-8.82)	-1.003 (-6.45)	-0.670 (-10.26)	---
% spent in food and beverage	-1.143 (-11.17)	-0.879 (-7.92)	-0.934 (-6.04)	---	-0.965 (-7.72)
% spent in other services	-1.521 (-7.70)	-1.109 (-9.79)	---	-0.812 (-8.24)	-1.574 (-5.99)
% spent in transportation	-1.408 (-13.59)	---	-1.035 (-6.42)	-0.651 (-8.45)	-1.296 (-7.27)
% spent in accommodation	---	-0.964 (-9.04)	-1.007 (-5.93)	-0.665 (-10.44)	-1.268 (-7.65)
<i>Are you satisfied with the following aspects related to the trip?</i>					
Safety				-3.780 (-2.23)	
Landscape		-4.831 (-2.03)			
Art					5.075 (2.15)
Accommodation					5.960 (2.22)
<i>Characteristics of the trip</i>					
First time in Italy		7.815 (3.30)		-5.785 (-3.08)	
Italy visited up to 5 times			5.986 (2.91)		
Cities in the Dolomite area		-8.199 (-4.00)			7.629 (2.43)
Alone	-10.022 (-3.60)	-4.945 (-2.53)	-6.961 (-3.37)		
<i>Characteristics of the visitor</i>					
Austria		-13.173 (-4.83)	-12.225 (-4.11)		-9.081 (-2.06)
Less than 35 years old				5.518 (2.34)	
35-44 years old					7.816 (2.63)
45-64 years old				4.668 (2.75)	
MR	-12.59 (-2.00)	-13.902 (-7.03)	-19.461 (-5.94)	-18.501 (-9.11)	-15.115 (-3.07)
Constant	81.053 (11.63)	102.292 (10.79)	100.5 (6.18)	62.414 (12.32)	82.228 (9.42)

*Notes:*

– indicates that the variable is not used in the model. <sup>a</sup> Estimated coefficients and *t* statistic in brackets.

I: N. of obs = 959; F(7, 951) = 70.80; Prob > F = 0; Adjusted R2 = 0.820

II: N. of obs = 959; F(11, 947) = 34.19; Prob > F = 0; Adjusted R2 = 0.547

III: N. of obs = 959; F(9, 949) = 29.18; Prob > F = 0; Adjusted R2 = 0.491

IV: N. of obs = 959; F(10, 948) = 43.83; Prob > F = 0; Adjusted R2 = 0.683

V: N. of obs = 959; F(11, 947) = 16.93; Prob > F = 0; Adjusted R2 = 0.602

## APPENDIX

Table A. List and brief description of the independent variable.

<b>Explanatory variables</b>	<b>Description</b>	<b>Mean (median)</b>
<i>Travel expenditure</i>		
Total travel expenditure	Total travel expenditure per night in Euro	164.97 (125.00)
% spent in shopping	Percentage of total travel expenditure per day spent in shopping (from 0 to 100)	16.62 (10.64)
% spent in food and beverage	Percentage of total travel expenditure per day spent in food & beverage, outside the hotel or other accommodation (from 0 to 100)	21.10 (18.56)
% spent in other services	Percentage of total travel expenditure per day spent in other services (from 0 to 100)	6.37 (0)
% spent in transportation	Percentage of total travel expenditure per day spent in internal transportation (from 0 to 100)	11.01 (7.14)
% spent in accommodation	Percentage of total travel expenditure per night spent in accommodation (from 0 to 100)	42.67 (42.94)
<i>Are you satisfied with the following aspects related to the trip?</i>		
Safety	1= very satisfied in safety of tourists; 0=otherwise	0.5243 (1)
Landscape	1= very satisfied in landscape and natural environment; 0=otherwise	0.6369 (1)
Food and beverage	1= very satisfied in food and beverage; 0=otherwise	0.4767 (0)
Hospitality	1= very satisfied in hospitality and friendliness of the people; 0=otherwise	0.4660 (0)
Information	1= very satisfied in information and tourist services; 0=otherwise	0.4243 (0)
Art	1= very satisfied in cities and works of art; 0=otherwise	0.4777 (0)
Accommodation	1= very satisfied in hotels and other accommodation; 0=otherwise	0.4097 (0)
Price	1= very satisfied in price and cost of living; 0=otherwise	0.1359 (0)
Products sold	1= very satisfied in quality and variety of products offered in stores; 0=otherwise	0.2854 (0)
Overall satisfaction	1= very satisfied in overall satisfaction; 0=otherwise	0.4495 (0)
<i>Characteristics of the trip</i>		
Nights	Number of paid nights; 0=day-visitor	9.17 (6)
First time in Italy	1=never been in Italy before the interview; 0=otherwise	0.2190 (0)
Italy visited up to 5 times	1=been in Italy from 1 to 5 times before the interview; 0=otherwise	0.3650 (0)
Italy already visited more than 5 times	1=been in Italy more than 5 times before the interview; 0=otherwise (reference category)	0.4161 (0)
Cities in the Dolomite area	1=only one city visited during the trip; 0=many cities visited during the trip	0.7932 (1)
Alone	1=respondent makes the visit alone; 0=respondent makes the visit with a group of people	0.2126 (0)
<i>Characteristics of the visitor</i>		
Other EU countries	1=respondent comes from one EU country, apart from Germany and Austria; 0=otherwise ( <i>reference category</i> )	0.3932 (0)
Austria	1=respondent comes from Austria; 0=otherwise	0.1398 (0)
Outside EU	1=respondent comes from a country outside EU; 0=otherwise	0.0854 (0)
Germany	1=respondent comes from Germany; 0=otherwise	0.3816 (0)
Less than 35 years old	1 = less than 35 years old; 0 = otherwise	0.2252 (0)
35-44 years old	1 = from 35 (included) to 44 (included) years old; 0 = otherwise	0.2825 (0)
45-64 years old	1 = from 45 (included) to 64 (included) years old; 0 = otherwise	0.3893 (0)
More than 64 years old	1 = more than 64 years old; 0 = otherwise ( <i>reference category</i> )	0.1029 (0)
MR	Inverse Mill's Ratio	