

Tourist spending dynamics in the Algarve: a cross-sectional analysis

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This paper assesses the determinants of international tourists' spending in the Algarve from 2007 to 2010. Based on a sample of 15,542 observations a cross-section model was estimated using ordinary least squares. The results reveal that a combination of socio-demographic, behavioural and motivation variables explain the spending patterns of international tourists in the Algarve. Analysis of the data indicates that tourist motivations related to accommodation facilities, cultural and historical resources, gastronomy, hospitality, prices and sightseeing tours positively affect tourists' spending. Moreover, the findings provide evidence that, over the years, the most loyal markets in Algarve reveal changing patterns in their spending behaviour. Destination management authorities should be aware of this spending behaviour of second-generation sun and sand visitors and should formulate strategies accordingly. Policy and managerial recommendations are discussed.

Keywords: tourism demand; tourist spending; travel motivations; microeconomic analysis; multiple regression analysis; Algarve

This paper analyses the determinants of international tourist spending in the Algarve, based on socio-demographic and behavioural variables of international tourism demand. The Algarve is located in southern Portugal and is one of the most renowned sun and sand destinations worldwide. Various studies have analysed the determinants of tourist expenditure (Di Matteo and Di Matteo, 1993; Qiu and Zhang, 1995; Cai, 1999; Aguiló and Juaneda, 2000; Zhou, 2000; Cheung and Law, 2001; Nicolau and Más, 2005; Pol *et al.*, 2006; Sun and Stynes, 2006; Kozak *et al.*, 2008; Alegre *et al.*, 2011; Sainaghi, 2012). The last two studies focus specifically on sun and sand destinations. These authors claim that due to the shifts in tourism motivations and travel patterns it is advisable to assess tourism demand by expenditure in order to depict tourism profitability. Alegre *et al.* (2011) and Wang *et al.* (2006) argue that tourists' expenditure may not be explained solely by the socio-economic status of tourists. This paper fills a gap in the literature by analysing determinants of tourist expenditure to measure the value added by different types of tourism motivations for a given destination (the Algarve). Only a few studies address how motivations may affect tourist expenditure (Kastenholtz *et al.*, 1999; Laesser and Crouch, 2006; Swanson and Horridge, 2006; Alegre and Cladera, 2009; Boo and Jones, 2009; Alegre *et al.*, 2011).

This research aims to (a) estimate the determinants of international tourists' expenditure in the Algarve, (b) identify how motivations may lead to quite different expenditure patterns and (c) assess whether the determinants of tourist spending vary across years. Estimations are performed cross-sectionally to look for the characteristics that define different tourist consumption patterns according to socio-demographic and behavioural characteristics, taking the dynamic patterns of today's markets into consideration. Data were collected through a self-administered questionnaire survey applied to international tourists on their departure from Faro airport (Correia and Pimpão, 2012). Hence, this paper looks to explain international tourist spending in the Algarve based on motivations, past behaviour, travel companions, overall satisfaction, return intention and socio-demographic variables.

The paper is organized as follows. The next section discusses and summarizes the theoretical argument for the choice of the determinants of tourist expenditure and the theory of discrete choice grounded in Lancaster's (1966) original work on consumer analysis characteristics and followed by other authors (Rugg, 1973; Morley, 1992; Papatheodorou, 2001). Several hypotheses are established and justified based on literature that explored and analysed the determinants of tourist expenditure. The third section presents the methodology and the data set considered in the present research. Estimated results are provided in the fourth section. The fifth section summarizes and presents the conclusions, limitations and perspectives for future research.

Literature review

Determinants of tourist expenditure

Tourism demand is frequently measured by the number of arrivals and the level of tourist expenditure, in per capita terms (Song *et al.*, 2012). According to Song and Li (2008), although tourist arrivals are still the most popular measure of

tourism demand, tourist expenditure also appears to be a very interesting measure, since it enables explanation of the economic value of tourism demand.

A wide range of different explanatory variables can be found to explain tourist expenditure in several tourism demand studies. In models based on primary data, variables can be grouped into several areas, such as behavioural factors (Godbey and Graefe, 1991; Lau and McKercher, 2004; Kastenholtz *et al.*, 1999; Lehto *et al.*, 2004; Mehmetoglu, 2007), economic and socio-demographics, which include, for example, age, gender, occupation, education, household income, nationality and marital status (Crouch, 1994; Agarwal and Yochum, 1999; Perez and Sampol, 2000; Mergoupis and Stener, 2003; Ham *et al.*, 2004; Hsieh and Chang, 2006; Kozak *et al.*, 2008; Wang and Davidson, 2010; Bojanic, 2011). Song *et al.* (2012) highlighted the potential difficulties that these studies faced in order to select and include appropriate explanatory variables and, at the same time, the problem of potential multicollinearity among the variables.

Another stream of research analysed determinants of tourist expenditure based on secondary data. Song *et al.* (2012) put forward the demand theory to explain that the critical factors shaping a tourist's budget restriction are income and the price of the tourism product/service. Thus, tourism demand studies that base their analysis on secondary data use as explanatory variables exchange rates (Lim, 1997), income of origin country/region, price index of destination and substitute prices of alternative destinations (Song *et al.*, 2009, 2012).

Tourist spending decision and travel motivation

Since tourists have already made a decision to travel, Dolnicar *et al.* (2008) assert that this assumption means that tourists have already made a decision to spend a portion of their budget on holidays rather than spending it on other consumption options. According to Decrop and Snelders (2004), the amount of money spent on holidays and the choice as to where it is spent are essential to the argument of vacation decision making. Kozak *et al.* (2008) point out that to achieve a travel budget 'equilibrium', tourists may use several tactics. Thus, making the stay at the destination shorter or longer, travelling with fewer or more companions, selecting a suitable accommodation arrangement or choosing a destination that best fits their travel motivations, are key factors that influence tourist spending decisions.

Discrete choice theory is one of the most popular theories used to study individuals' behaviour in terms of the decision-making process. The foundations of discrete choice theory are visible in the work developed by McFadden (1978, 1980), which emphasized that modern economic theory follows the assumption that individuals comprise a market behaviour which is generated through the maximization of preferences. It assumes the existence of non-observable preferences and of a utility function. Discrete choice theory considers individuals' choice behaviour as a probabilistic process, which means that for modelling purposes it is intended to incorporate a certain degree of uncertainty.

By suggesting a model that breaks away from the traditional approach to consumer theory, which states that goods have utility, Lancaster (1966), assumed that products have no utility in themselves; rather, they have a number of characteristics or attributes that give utility to the consumer. The first application of Lancaster's principle to tourism was conducted by Rugg (1973).

Decrop (2006) notes that Rugg incorporated three dimensions into Lancaster's model which were ignored by tourism demand economists at the time: time constraint, transportation costs (by modifying the time constraint) and costs of time (by modifying the time constraint).

Grundey (2006) identified price, income and personal tastes as the three main factors that economists claim are an influence on tourist consumption, although the last factor is usually disregarded by economists as being outside the sphere of standard economics. According to the author, the field of psychology shows an interest in the decision-making process and how various factors – with the analysis of motivations among the prime – can stimulate and influence it.

In this vein, motivations may be understood as the strength of intention to practise a specific action and encompass the effects of situation–person interactions (Gnoth, 1997). Therefore it should be emphasized that behind a tourist's selection of a particular holiday destination lies a desire for benefits of one kind or another.

Concerning destination-related travel motivations, Wang and Davidson (2010) produce a very useful literature review in which they highlight the importance of travel activities as a determinant of travel expenditure (Kastenholtz *et al*, 1999; Jang *et al*, 2002; Alegre and Cladera, 2009; Alegre *et al*, 2011). Travel activities related to nature, beach and the outdoors, and entertainment are more profitable than others (Jang *et al*, 2005).

In another stream of activities, Laesser and Crouch's (2006) research shows that tourists engaging in activities related to beaches or local culture seem to present lower expenditure than those related to gambling, food and wine.

In this sense, it is important to highlight that motivations initiate actions and guide satisfactory behaviour, but more specific filters of choices are exercised by decision-makers' preferences (Goodall, 1991). According to Decrop (2006), these filters are expressed, on the one hand, by the evaluation of alternative holidays, which is made possible through the formation of mental images, and, on the other, by package choice – once the generic decision has been made, holiday requirements must be specified and an information search process begins to find the holidays that best fit those requirements, taking into consideration time and budget constraints.

Papatheodorou (2001) suggested a discrete choice model based on the assumption that vacationers travel only to the destination that is associated with the highest utility. Thus, the basis of the travellers' decision-making process is a functional decision-making process that is influenced by a number of economic and non-economic factors. Indeed, given that the present research intends to identify the dynamic patterns of international tourist expenditure over time, assumptions of discrete choice theory will be helpful in order to understand which motivations seem to contribute to the highest utility over time. Thus, motivations provide an explanation for a large part of tourist behaviour (and expenditure), lying at the base of the travel decision-making process (Kozak, 2002; Um *et al*, 2006 Correia *et al*, 2007; Barros *et al*, 2008; Correia and Pimpão, 2008; Correia and Kozak, 2012).

Hypotheses on moderate determinants for tourist expenditure

Tourists' expenditure reflects the way they value the destination, and can be seen as a proxy for perceived utility. Given that destinations do not have utility

in themselves, they are endowed with a set of activities or attributes that lend the location to a particular utility. In other words, tourists have a dynamic buying behaviour that is reflected in their tourist expenditure. For instance, international tourists who travelled to the Algarve revealed dynamic behaviour in travel spending over time. Thus, this statement is based on the utility that tourists receive from changing their spending when visiting the Algarve. This modification of spending behaviour that underlines the utility leads to the following hypotheses:

Hypothesis 1 (past behaviour): past visits (repeat) at the destination positively affect tourist expenditure.

Patterns of expenditure and participation in different activities on tourists' current trips are often influenced by their previous vacation experience (Lehto *et al.*, 2004); however, this variable has not shown consistent behaviour in several studies. Alegre and Cladera (2006, 2009) claim that tourists' attitudes towards a destination can bring about repeat visits, for the simple reason, among others, that the destination is part of their vacation routine and is a fixed habit. The fact of choosing somewhere familiar reduces the risk of an unpleasant holiday experience. Hence, this strategy may just be a way of avoiding risk and reducing the uncertainty inherent in consumption of services. This attitude can be described as compensatory, whereby travel motivations are satisfied by the simple expedient of returning to the same destination.

Demand theory bases its assumptions on the rationality of consumer behaviour. Indeed, social exchange theory¹ helps to explain the repeat spending behaviour of tourists. 'This theory assumes that behaviour is predicated upon the notion of rationality' (Godbey and Graefe, 1991, p 217).

One of the first studies that attempted to analyse the differences between first-time and repeat visitors to explain tourist expenditure was that by Mak *et al.* (1977). The authors concluded that there was no significant difference between them. Wang and Davidson (2010) agree with this statement. However, other authors conclude that repeat visitors tend to spend less than first-time visitors (Jang *et al.*, 2004). The opposite was also claimed by Perez and Sampol (2000), when the focus of analysis was mass tourism markets and the holidays were based on full-board services. Findings provided by Kozak *et al.* (2008) support the proposition that repeat visitors are likely to spend more than first-time visitors.

Hypothesis 2 (travel companion): travel companions positively affect tourist expenditure.

Following the personality profiles suggested by Plog (1974), it is evident that those labelled as dependables prefer to be surrounded by family and friends, whereas venturers prefer to be alone. In this vein, we can hypothesize that some of the differences in the level of tourist expenditure can be explained by the objective elements of any trip, among which is the number of travel companions from the same household (Laesser and Crouch, 2006).

Hypothesis 3 (previous overall satisfaction): overall satisfaction with past visits positively affects tourism expenditure.

Tourist satisfaction has its origins in customer satisfaction theory, in which motives are categorized into internal (emotional satisfaction) and external (cognitive satisfaction). To be cognitively satisfied, tourists must appreciate the instrumental performance of the destination, with pre-known attributes being maintained to their satisfaction. Yoon and Uysal (2005) suggest that overall satisfaction consists of an interrelation of instrumental and expressive attributes. According to many studies (Oliver, 1980; Parasuraman *et al.*, 1988; Garbarino and Johnson, 1999), there is a relationship between overall satisfaction and particular facets of the product or service. The influence that this construct has on the decision to return makes it an important variable when considering the importance of tourist satisfaction in the success of a destination (Kozak and Rimmington, 2000). Satisfaction or dissatisfaction with previous experiences is also critical because it may effect expectations for the next purchase (Woodruff *et al.*, 1983). Despite the existence of several studies that discuss the overall tourist satisfaction construct, few studies have analysed the relationship between tourist satisfaction, destination and expenditure (Zhang *et al.*, 2010). Questionnaires distributed at the airport prior to tourists' departure were used in this study to measure tourist satisfaction. This timing was propitious because the tourists were able to reflect on the entire holiday and draw on memories of recent experiences.

Hypothesis 4 (previous behavioural intentions): previous behavioural intentions affect tourist spending.

Festinger (1954) stated that satisfaction in relation to the destination influences future behaviour. Beerli and Martín (2004) established that sun and sea destinations with a good image enjoy a high level of repeaters. According to Kozak and Rimmington (2000), the intention to return is not necessarily related to a past visit. While some destination features may have a substantial influence on overall satisfaction, they cannot necessarily be regarded as the core factor in the decision to make repeat visits or to recommend the destination to others.

Kozak (2001) demonstrated that overall satisfaction and the number of previous visits considerably influence the intention to return, especially in mature destinations. Kozak (2003) also concluded that destination attributes influence future behavioural intentions and satisfaction.

Hypothesis 5 (economic and socio-demographic variables): economic and socio-demographic variables are positively and significantly related to tourist expenditure.

Many authors claim that putting economic and socio-demographic variables together in the same model could increase the explanatory power of the model significantly (for example, Asgary *et al.*, 1997, among others). Several studies can be found that analyse tourist expenditure taking the socio-demographic profile into account (Jang *et al.*, 2002; Mok and Iverson, 2000; Alegre and Juaneda, 2006; Wang and Davidson, 2010). However, empirical findings showed different conclusions. In terms of economic variables, and because of its importance for economic theory in explaining the restriction of consumer behaviour,

income is one of the most frequently used variables (Lim, 1997; Wang and Davidson, 2010; Sainaghi, 2012; Brida and Scuderi, 2013).

Hypothesis 5a: the origin market affects tourist spending.

Hypothesis 5b: age groups affect tourist spending.

Hypothesis 5c: the level of household income affects tourist spending.

Hypothesis 5d: gender affects tourist spending.

Hypothesis 5e: the level of education affects tourist spending.

Hypothesis 5f: marital status affects tourist spending.

Hypothesis 6 (tourist motivations): tourist motivations positively affect tourist spending.

The motivation for travel changes over time and is influenced by past holiday experiences. Dann (1977, 1981) introduced the pull and push theory of tourist motivation, to examine and explain the factors that predispose a person to travel and those that attract the tourist to a given destination. The former are related to internal motives that explain why people travel (Dann, 1977; Crompton, 1979). Pull factors are related to external motives mainly exhorted by destination attributes (Crompton, 1979). Given the importance of travel motivations in the study of tourist behaviour, Mansfeld (1992) emphasized the role of motivations in travel behaviour. Wang and Davidson (2010) highlight a few papers about determinants of tourist expenditure. Some authors (Laesser and Crouch, 2006; Ponta *et al*, 2006; Mehmetoglu, 2007) have pointed out that expenditure levels at the destination vary according to activity types. Moreover, as shown by Alegre *et al* (2011), motivations towards certain activity types will influence the amount tourists are willing to spend to achieve the desired levels of satisfaction. Their results showed that different tourists' motivations can lower or raise the probability that they will belong to a certain expenditure segment. It should be noted that the high expenditure segments are more often composed of tourists who are looking for more than a basic sun and sand holiday.

Thus, 'incorporating tourist motivations in expenditure models could be a way of taking into account this kind of factor when determining tourist expenditure' (Alegre *et al*, 2011, p 817).

Hypothesis 7 (number of nights spent at the destination): the length of stay affects tourist spending.

Current hypotheses are in line with many other studies that consider tourist spending using the number of nights as proxy (Brida and Scuderi, 2013).

The above hypotheses were tested by the adoption of a cross-sectional data method with the support of OLS.

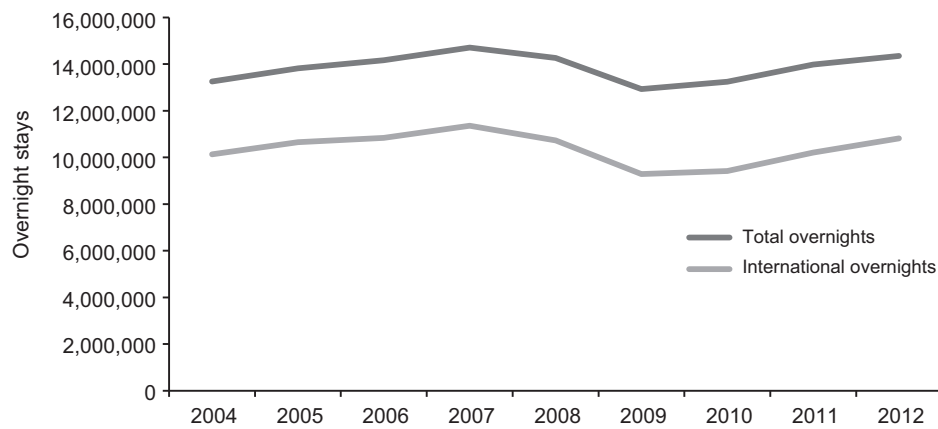


Figure 1. Overnight stays in the Algarve, 2004–2012.

Source: Turismo de Portugal, IP (2013a, 2013b).

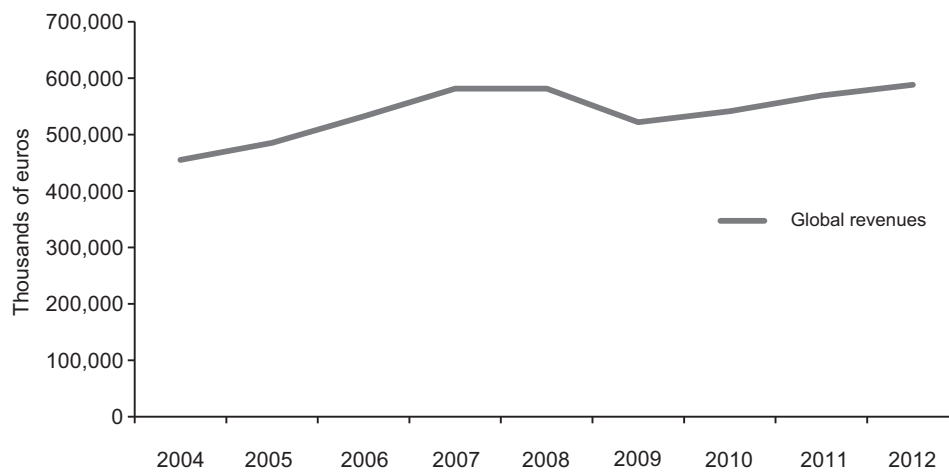


Figure 2. Global Hotel industry revenues in the Algarve, 2004–2012.

Source: Turismo de Portugal, IP (2013c, 2013d).

Methodology

Research contextual setting

The economy of the Algarve is based on the tertiary sector, within which tourism is a significant contributor. The region received 10.578 million international overnights in 2012, corresponding to 75% of total overnights in the region (Turismo de Portugal, IP, 2013a) (see Figure 1). With regard to total hotel industry revenue in the Algarve between 2007 and 2010, the average growth rate was -2% , resulting in a drop in performance from €581.116 million in 2007 to €541.142 million in 2010. In 2012, the Algarve registered €588.283 million, revealing a subtle increase since 2010 (see Figure 2).

The Algarve is a well-known international tourism destination because of its climate, beautiful beaches and gastronomy. However, 'sun and sea' was and still is the most important driver for foreign tourists, which reveals the potential to attract new and repeat visitors.

Study methods

Data were collected by means of a questionnaire applied between 2007 and 2010, which was presented to a stratified random sample of international tourists during their departure from Faro airport (Correia and Pimpão, 2012). The definition of the sample was based on the number of international departures from Faro Airport from 2007 to 2010. The population of the study is matched to all international tourists visiting the Algarve for the purpose of holiday or leisure. With the permission of the Faro Airport authority, questionnaires were administered in the airport's departure lounge. Over the four years in which the administration of this questionnaire occurred, the selection of interviewees was made randomly. A total of 15,542 people were interviewed. A total of 2,636 questionnaires were collected in 2007; 2,187 in 2008; 5,938 in 2009 and 4,781 in 2010.

In terms of the total tourists surveyed over the four years:

- 53.7% were female, 31.2% were aged under 30, 48.8% were aged 31–50 and 20.1% were older than 51;
- 75.9% had secondary education (edu_secondary) and only 1.6% had a university degree (edu_university);
- 29.9% were single, 67.3% were married or living together and 2.8% were divorced or widowed;
- 38.1% earned a monthly household income of less than €3,500, 40.8% between €3,501 and €5,000 and 21.1% more than €5,001;
- 52% intended to return (ri_yes) on holidays to the Algarve, and 44.5% would recommend (rec_yes) the destination;
- 80.5% were very satisfied with the destination (satis_4), 16.5% were extremely satisfied (satis_5) and 1% were dissatisfied (satis_2);
- 53.4% had not visited the destination before (pb_no) and 46.6% had already visited it (pb_yes);
- 62.3% were employed, 22% were unemployed, 9.3% were not active and 5.0% were students;
- 70% of visitors travelled with spouse and family (spouse_family), 20.4% with friends/groups (friends_groups) and 9.6% travelled alone;
- 29.8% were British (UK), 24.2% were German (GER), 18.1% were Irish (IR), 8.9% were Scandinavian (SCAN), 5.3% were Dutch (NE) and 13.7% were other nationalities;
- in 2007 international tourists stayed on average 8.9 nights; 9.2 nights in 2008; 7.5 nights in 2009 and 8.27 nights in 2010;
- average daily tourist spending in 2007 was €71.08; €4.84 in 2008; €111.41 in 2009 and lastly €91.67 in 2010.

Model specification and estimation

The traditional specification of the tourism demand function was adopted to test the hypotheses set out above; that is,

$$\begin{aligned}
Exp_{it} = & \alpha_0 + \beta_1 UK_{it} + \beta_2 GER_{it} + \beta_3 NE_{it} + \beta_4 IR_{it} + \beta_5 SCAN_{it} + \beta_6 OTHER_{it} \\
& + \beta_7 PB_{it} + \beta_8 oversatis_{it-1} + \beta_9 RI_{it} + \beta_{10} NEC_{it} + \beta_{11} friends_group_{it} \\
& + \beta_{12} alone_{it} + \beta_{13} spouse_family_{it} + \beta_{14} friends_group_{it} + \beta_{15} single_{it} \\
& + \beta_{16} divorced_widowed_{it} + \beta_{17} married_livingtogether_{it} + \beta_{18} unemployed_{it} \\
& + \beta_{19} not_active_{it} + \beta_{20} retired_{it} + \beta_{21} student_{it} + \beta_{22} employed_{it} \\
& + \beta_{23} less_3500_{it} + \beta_{24} bet3500_5000_{it} + \beta_{25} more_5001_{it} \\
& + \beta_{26} elementary_{it} + \beta_{27} secondary_{it} + \beta_{28} university_{it} + \beta_{29} less_30_{it} \\
& + \beta_{30} bet31_50_{it} + \beta_{31} more_51_{it} + \beta_{32} over_{it} + \beta_{33} pull1_{it} \\
& + \beta_{34} pull2_{it} + \beta_{35} pull7_{it} + \beta_{36} pull10_{it} + \beta_{37} pull11_{it} + \beta_{38} pull12_{it} \\
& + \beta_{39} pull13_{it} + \beta_{40} pull18_{it} + \beta_{41} pull21_{it} + \beta_{42} pull22_{it} + \varepsilon_i \quad (1)
\end{aligned}$$

The Scheffé test was used to test for significant differences in tourist motivations. The results confirm that there is a difference in tourist motivations across the years. The tourist motivations considered in the model were those that presented most variability over the years (see Table 1).

To select the significant variables over the years for each model, STATA 12 was used, models were estimated by OLS and variables selected based on the estimated p -values (see Table 2).

According to Cameron and Trivedi (2010), in the analysis of a linear regression model it is necessary to assume that ε_i satisfies the classical conditions, and that the exogeneity of regressors is also observed. In the course of model estimation, heteroscedastic uncorrelated errors were detected from the application of White's and Breusch–Pagan/Cook–Weisberg tests for heteroscedasticity in each model, and as a consequence robust estimation was adopted. Robust standard errors are often reported in applied cross sectional work, especially when a sample size is large (Wooldridge, 2002), which is the case of present study. For the purpose of testing for parameter equality across the years, a nested test was conducted. An F -test was adopted to compare nested models, one with k parameters and the other with $k + p$ parameters in order to test the following hypotheses:

$$\begin{aligned}
H_0 : & \beta_{k+1} = \beta_{k+2} = \dots = \beta_{k+p} = 0, \\
H_a : & \text{at least one } \beta \neq 0.
\end{aligned} \quad (2)$$

Results and analysis

Table 3 shows the robust estimation results. For the purpose of the regression analysis, the variables extracted from the questionnaire (see Table 4), were re-defined and for all of them dummies were created. After ensuring that all variables in the final models were jointly statistically significant at the 0.05 level, a Wald test was conducted in order to assess the equality of parameters. Concerning the quality of adjustment (R^2), it was possible to achieve the highest possible score through the adoption of a stepwise regression process (see Table 2).

Table 1. Scheffé test (multiple comparisons).

Variable (motivations)	(I) Year	(J) Year	Mean Difference (I-J)	SE	Sig.	95% confidence interval Lower bound	Upper bound
Cleanliness	2009	2007	-0.649*	0.028	0.000	-0.73	-0.57
		2008	-0.630*	0.030	0.000	-0.72	-0.54
		2010	-0.492*	0.024	0.000	-0.56	-0.43
	2010	2007	-0.157*	0.030	0.000	-0.24	-0.07
		2008	-0.138*	0.031	0.000	-0.23	-0.05
Cultural and historical resources	2009	2009	0.492*	0.024	0.000	0.43	0.56
		2007	-0.684*	0.028	0.000	-0.76	-0.61
		2008	-0.472*	0.029	0.000	-0.55	-0.39
	2010	2010	-0.068*	0.023	0.034	-0.13	-0.00
		2007	-0.616*	0.029	0.000	-0.70	-0.54
Information available	2009	2008	-0.405*	0.030	0.000	-0.49	-0.32
		2009	0.068*	0.023	0.034	0.00	0.13
		2007	-0.724*	0.027	0.000	-0.80	-0.65
	2010	2008	-0.557*	0.029	0.000	-0.64	-0.48
		2010	-0.412*	0.022	0.000	-0.47	-0.35
Closeness to home	2009	2007	-0.313*	0.028	0.000	-0.39	-0.24
		2008	-0.145*	0.029	0.000	-0.23	-0.06
		2009	0.412*	0.022	0.000	0.35	0.47
	2010	2007	-0.938*	0.029	0.000	-1.02	-0.86
		2008	-0.923*	0.031	0.000	-1.01	-0.84
Accommodation	2009	2010	-0.242*	0.024	0.000	-0.31	-0.18
		2007	-0.696*	0.030	0.000	-0.78	-0.61
		2008	-0.681*	0.031	0.000	-0.77	-0.59
	2010	2009	0.242*	0.024	0.000	0.18	0.31
		2007	-0.624*	0.028	0.000	-0.70	-0.50
	2009	2008	-0.592*	0.030	0.000	-0.68	-0.51
		2010	-0.409*	0.023	0.000	-0.47	-0.34
		2007	-0.215*	0.029	0.000	-0.30	-0.13
	2010	2008	-0.183*	0.031	0.000	-0.27	-0.10
		2009	0.409*	0.023	0.000	0.34	0.47

Continued

Table 1 continued.

Variable (motivations)		(I) Year	(J) Year (I-J)	Mean Difference	SE	Sig Lower bound	95% confidence interval Upper bound	
Gastronomy	Scheffé	2009	2007	-0.416*	0.029	0.000	-0.50	-0.34
			2008	-0.404*	0.031	0.000	-0.49	-0.32
			2010	-0.070*	0.023	0.034	-0.14	-0.00
Price	Scheffé	2010	2007	-0.346*	0.030	0.000	-0.43	-0.26
			2008	-0.333*	0.032	0.000	-0.42	-0.24
			2009	0.070*	0.024	0.034	0.00	0.14
		2009	2007	-0.190*	0.027	0.000	-0.27	-0.12
			2008	-0.389*	0.029	0.000	-0.47	-0.31
			2010	-0.269*	0.022	0.000	-0.33	-0.21
		2010	2007	0.079*	0.028	0.047	0.00	0.16
			2008	-0.120*	0.030	0.000	-0.20	-0.04
			2009	0.269*	0.022	0.000	0.21	0.33
Hospitality	Scheffé	2009	2007	-0.512*	0.027	0.000	-0.59	-0.44
			2008	-0.467*	0.029	0.000	-0.55	-0.39
			2010	-0.300*	0.023	0.000	-0.36	-0.24
		2010	2007	-0.212*	0.028	0.000	-0.29	-0.13
			2008	-0.166*	0.030	0.000	-0.25	-0.08
			2009	0.300*	0.023	0.000	0.24	0.36
		2009	2007	-0.447*	0.028	0.000	-0.53	-0.37
			2008	-0.427*	0.030	0.000	-0.51	-0.34
			2010	-0.155*	0.023	0.000	-0.22	-0.09
Sightseeing and excursions	Scheffé	2010	2007	-0.292*	0.029	0.000	-0.37	-0.21
			2008	-0.271*	0.031	0.000	-0.36	-0.18
			2009	0.155*	0.023	0.000	0.09	0.22
		2009	2007	-0.079*	0.028	0.044	-0.16	-0.00
			2008	-0.437*	0.030	0.000	-0.52	-0.35
			2010	0.023*	0.023	0.793	-0.04	0.09
		2010	2007	-0.102*	0.029	0.005	-0.18	-0.02
			2008	-0.461*	0.031	0.000	-0.55	-0.38
			2009	-0.023*	0.024	0.793	-0.08	0.04
Golf facilities	Scheffé	2009	2007	-0.079*	0.028	0.044	-0.16	-0.00
			2008	-0.437*	0.030	0.000	-0.52	-0.35
			2010	0.023*	0.023	0.793	-0.04	0.09

Table 2. Variables identified with stepwise regression, 2007–2010.

2007	2008	2009	2010
UK	GER	UK	UK
PB	IR	GER	GER
RI	OTHERS	NE	PB
REC	PB	IR	OVERSATIS
GEN	OVERSATIS	OVER	REC
PULL1	RI	PB	GEN
PULL4	REC	OVERSATIS	PULL10
PULL22	GEN	RI	PULL11
ALONE	PULL1	REC	PULL13
SPOUSE_FAMILY	PULL12	GEN	PULL18
SINGLE	PULL13	PULL11	PULL22
LESS_3500	PULL22	PULL13	SPOUSE_FAMILY
MORE_51	ALONE	PULL21	FRIENDS_GROUP
	SPOUSE_FAMILY	ALONE	NOT_ACTIVE
	MARRIED_LIVINGTOGHETER	SPOUSE_FAMILY	LESS_3500
	LESS_3500	SINGLE	BET_3500_5000
	BET_3500_5000	MARRIED_LIVINGTOGHETER	BET_31_50
	BET_31_50	NOT_ACTIVE	
		RETIRED	
		STUDENT	
		LESS_3500	
		BET_3500_5000	
		SECONDARY	
		BET_31_50	

Table 3. Results of the robust estimators (dependent: daily tourist expenditure).

2007		2008	
Variables	Coeff and sig	Variables	Coeff and sig
UK	0.7128129 (0.045) **	GER	-0.5141903 (0.001) *
PB	3.957159 (0.026) **	IR	-0.4282649 (0.005) *
RI	6.754307 (0.000) *	OTHERS	-0.4280579 (0.001) *
REC	7.183955 (0.000) *	PB	2.396558 (0.022) **
GEN	7.450844 (0.000) *	OVERSATIS	-0.0790753 (0.000) *
PULL1	2.301732 (0.007) *	RI	3.107461 (0.011) **
PULL4	1.894312 (0.017) **	REC	2.706385 (0.022) **
PULL22	-1.610741 (0.007) *	GEN	6.743173 (0.000) *
ALONE	8.008953 (0.033) **	PULL1	2.471035 (0.000) *
SPOUSE_FAMILY	8.472229 (0.001) *	PULL12	1.045216 (0.097) ***
SINGLE	9.858713 (0.000) *	PULL13	1.565323 (0.012) **
LESS_3500	3.980312 (0.074) *	PULL22	2.048534 (0.000) *
BET_31_50	7.947393 (0.001) *	ALONE	7.193453 (0.001) *
MORE_51	11.5262 (0.000) *	SPOUSE_FAMILY	5.279117 (0.002) *
_cons	0.0433826 (0.584) ns	MARRIED_LIVINGTOGETHER	3.527296 (0.012) **
		LESS_3500	3.950108 (0.010) **
		BET_3500_5000	4.083192 (0.002) *
		SECONDARY	2.223427 (0.048) **
		LESS_30	8.526021 (0.000) *
		BET_31_50	8.412143 (0.000) *
		_cons	0.4593619 (0.000) *
Observations	15,542	Observations	15,542
N	2,636	N	2,187
Min	10	Min	5
Max	201	Max	200
Mean	71.08	Mean	64.84
SD	41,156	SD	22,639
F-stat	535.97	F-stat	1,056.00
R-square	0.7048	R-square	0.8678
Root-MSE	17,179	Root-MSE	8.7637
Wald test	535.97 (0.000)	Wald test	1,056.00 (0.000)
Nested-test (F stat)	28.13 (0.000)	Nested-test (F stat)	38.44 (0.000)

Notes: Probabilities are in parentheses. ***Significant at the 10% level; **significant at the 5% level; *significant at the 1% level. Full names of variables are given in Table 1. ns = not statistically significant.

Continued on facing page

According to the results presented in the previous table, in 2007 the model explains 70.48% of international tourist daily spending; 86.78% in 2008; 61.23% in 2009 and 50.97% in 2010. Wooldridge (2006) states that a model with an explanatory power above 50% provides acceptable goodness-of-fit.

Table 3 provides the results for the four estimated models. A first attempt at interpreting findings showed different explanatory determinants of tourist spending across years. In this vein results reveal the confirmation or non-confirmation of the following hypotheses.

H1, past behaviour. Table 3 reveals that repeaters are an important determinant

2009		2010	
Variables	Coeff and sig	Variables	Coeff and sig
UK	1.533769 (0.001) *	UK	-2.648301 (0.000) *
GER	4.897191 (0.000) *	GER	-1.98251 (0.000) *
NE	0.3767383 (0.000) *	PB	10.11168 (0.000) *
IR	3.00997 (0.000) *	OVERSATIS	-0.3193763 (0.000) *
OVER	0.5379314 (0.001) *	REC	5.742801 (0.005) *
PB	7.583445 (0.000) *	GEN	6.06583 (0.002) *
OVERSATIS	-0.4660954 (0.000) *	PULL10	-1.367333 (0.100) ***
RI	6.68566 (0.001) *	PULL11	2.697545 (0.002) *
REC	4.824467 (0.013) **	PULL13	2.213193 (0.023) **
GEN	11.2044 (0.000) *	PULL18	2.411526 (0.010) **
PULL11	2.253575 (0.003) *	PULL22	2.336758 (0.009) *
PULL13	3.211198 (0.000) *	SPOUSE_FAMILY	13.61727 (0.000) *
PULL21	2.99529 (0.000) *	FRIENDS_GROUP	13.41112 (0.001) *
ALONE	10.90804 (0.001) *	NOT_ACTIVE	-12.06664 (0.000) *
SPOUSE_FAMILY	9.548895 (0.000) *	LESS_3500	16.57262 (0.000) *
NOT_ACTIVE	-15.33211 (0.000) *	BET_3500_5000	13.6182 (0.000) *
RETIRED	-23.20019 (0.000) *	BET_31_50	7.237529 (0.002) *
LESS_3500	19.12069 (0.000) *	_cons	3.07485 (0.000) *
BET_3500_5000	19.55282 (0.000) *		
SECONDARY	7.264279 (0.000) *		
_cons	0.1057014 (0.000) *		
Observations	15,542	Observations	15,542
N	5,938	N	4,781
Min	10	Min	10
Max	400	Max	666
Mean	111.41	Mean	91.67
SD	68,025	SD	74,278
F-stat	785.07	F-stat	435.74
R-square	0.6123	R-square	0.5097
Root-MSE	42,706	Root-MSE	41,371
Wald test	785.07 (0.000)	Wald test	435.44 (0.000)
Nested-test (F stat)	15.48 (0.000)	Nested-test (F stat)	4.98 (0.000)

of tourist spending across the years. The findings show that being a repeat visitor positively affects tourist expenditure, which means that tourists who knew the destination before tended to spend more than first-time tourists. In support of the results, other studies have also demonstrated the positive relation of repeaters with tourist spending (Perez and Sampol, 2000; Kozak *et al*, 2008). Hence, H1 is not rejected.

H2, travel companion. Travel companion was found to be significant across the years. However, there is evidence (Kozak *et al*, 2008) to suggest that, as the number of companions' increases, daily spending decreases. In other words, spending per person will be lower as the number of elements increases. Table 4 reveals that when tourists travel alone the average daily spending tends to increase, with the exception of years 2007 and 2010. According to the above results H2 is partially not rejected.

Table 4. Questions extracted from the questionnaire.

Question	Scale/options	Recoded scale	Variable
Who are/were you travelling with?	<i>Part A. Trip Logistics</i> Spouse Family Friends Alone Excursion group Other Open answer	Alone Spouse/family Friends/excursion groups/others	alone spouse_family friends_group
Where did you stay: days; nights?	Open answer		OVER
Have you visited your final destination before? (Past behaviour)	<i>Part C. Travel Experience</i> No Yes		PB
When deciding your travel itinerary, how important were the following aspects?	<i>Part E. Motivations</i> Not important Somewhat important Moderately important Quite important Extremely important <i>Motivations:</i> Cleanliness Cultural and historical resources Information available Closeness to home Accommodation Gastronomy Price Hospitality Sightseeing and excursions Golf facilities		PULL1 PULL4 PULL 7 PULL 10 PULL11 PULL12 PULL13 PULL18 PULL21 PULL22

Part F. Tourist experience and satisfaction

What is the degree of your overall satisfaction with the destination?	Very dissatisfied Dissatisfied Satisfied Very satisfied Extremely satisfied	oversatis
Do you intend to return to your final destination?	No I don't know Probably For sure No	RI No Yes
Would you recommend it to friends and relatives?	Probably Definitely	REC No Yes

Part G. Personal Characteristics

Age	Open answer	less_30 bet_31_50 more_51 gen
Gender	Female Male	Single Divorced_widowed Married/Living together
Social status	Married_livingtogether Divorced Widowed	Single Divorced_widowed Married/Living together
Family average monthly income	Less than €2,000 €2,001–€3,500 €3,501–€5,000 €5,001–€8,000 €8,001 and above	less_3500 bet_3501_5000 more_5001

Continued

Table 4 continued.

Question	Scale/options	Recoded scale	Variable
Employment situation	Employed Unemployed Not active Student Retired Other	Unemployed Not active Retired Student Employed	unemployed not_active retired student employed
Education	Elementary Secondary University/college Postgraduate Other	Elementary Secondary University	Elementary Secondary university
Nationality	Open answer	UK Germany The Netherlands Ireland Scandinavia Others	UK GER NE IR SCAN OTHER

Source: Correia and Pimpão (2012).

H3, previous overall satisfaction. Previous overall satisfaction ($t-1$) affects tourist spending. As suggested by Yoon and Uysal (2005), the instrumental and expressive attributes related to one another produce overall satisfaction. Many studies have related overall satisfaction to specific aspects of the product or service (Oliver, 1980; Parasuraman *et al.*, 1988; Garbarino and Johnson, 1999). Brida and Scuderi (2013) say that opinion about the holidays was measured through both metric and dummy regressors. Considering the results presented in Table 3, less satisfied tourists tend to spend less across the years. Other studies address the same negative sign (for example, Chen and Chang, 2012). In the case of the Algarve, a many repeat tourists own a second home or have holiday connections with friends and relatives, which causes a sort of a 'hostage' behaviour for the region (Correia *et al.*, 2008). Thus, considering the above results H3 is not rejected.

H4, previous behavioural intentions. Behavioural intentions affect tourist spending. The findings reveal that recommendation of destination and return intention positively affect tourist spending across the years. According to the results, it is possible to support the hypothesis that behavioural intentions generate a positive effect on tourist expenditure, generating higher expenditure across the years. Other studies adopt this determinant to explain tourist expenditure, mainly concerning the intention to revisit. Although this variable presents statistical significance, the results of other studies contradict the findings of the present study because the sign is negative (for example, Chhabra *et al.*, 2002). Thus, H4 is partially not rejected.

H5, socio-demographic variables. Economic and socio-demographic variables are positively and significantly related with tourist expenditure. With regard to socio-demographic characteristics, the effects of the significant variables on tourist spending are:

- H5a, the origin market affects tourist spending. Nationality is a significant independent variable over the four years. However, for the UK, GER, IR, NE, SCAN and others, there is no simultaneous significance across the years, and the direction of their sign even changes in a few of these origin markets. Thus, German and Irish tourists' spending undergoes a decrease in expenditure in 2008 and particularly in 2010 for Germany and the UK. Thus, following the results presented in Table 3, H5a is not rejected.
- H5b, age groups affect tourist spending. Age-related variables are undoubtedly in absolute terms the most used (Brida and Scuderi, 2013). The dummy variables for age show significant positive effects on tourist spending, but not in every year. In 2007 middle-aged tourists spent less than older tourists. Thus, considering these results, H5b is partially not rejected.
- H5c, the level of household income affects tourist spending (low-income tourists spend less than middle- and high-income tourists). Concerning economic constraints, income is the most frequently employed variable in estimating regressors that explain tourist expenditure behaviour (Brida and Scuderi, 2013). Following the results presented in Table 3, as expected, dummy variables are positive and statistically significant. Between 2007 and 2009, lower-income tourists ($< \text{€}3500$) spend less than middle-

income tourists (€3,501–€5,000), confirming what the authors addressed. However, in 2010 regressors present different patterns, revealing that low-income tourists spend above the average. The results presented above concerning H5c lead it to be partially not rejected.

- H5d, gender affects tourist spending. This variable shows a significant and positive effect across the years. The present findings contradict results obtained by other authors (Agarwal and Yochum, 1999; Jang *et al.*, 2004; Wang and Davidson, 2010). Hence, from the results of the regression, H5d is not rejected.
- H5e, the level of education affects tourist spending. Although education is considered in the tourism demand function in Equation (1) and appears as an explanatory variable, it is not significant in all years. Results presented in Table 3 reveal that tourists with a secondary level of education have a positive effect on tourist expenditure in 2008 and 2009. According to the above results H5e is partially not rejected.
- H5f, Marital status affects tourist spending. This explanatory variable appears in some regressors. Although the sign is positive in the years 2007 and 2008, the results show that single tourists spend more than married tourists. These findings are in line with those of Mak *et al.* (1977) and Asgary *et al.* (1997). Thus, H5f is partially not rejected.

H6, tourist motivations. As far as the motivational dimension is concerned, the findings support the fact that the effect of some motivations is statistically significant, and so it is justifiable to include them in the expenditure models. In particular, the basic facility attributes of a sun-and-sand destination have a positive effect across the years (mainly accommodation and cleanliness). However, other motivations emerge that reveal new avenues for the diversification of the tourism product in the Algarve. Thus motivations of cultural and historical resources, gastronomy, sightseeing and excursions and hospitality show a positive effect on tourism expenditure (see the results in Table 3). So it can be seen that the results agree with those of Alegre *et al.* (2011), who state that the high-expenditure stratum of tourists will include those who are more highly motivated by local culture or tourist facilities. Another motivation that appears to have a positive effect on tourist spending is price. With regard to the estimated coefficients present in Table 3, it is evident that tourists are not so affected by high prices. Comparing prices with other motivations (Table 3) seems to suggest that, for golf, gastronomy, sightseeing and excursions and accommodation, tourists are probably willing to pay a higher price to obtain them. These results are in line with other motivations studies that analyse the effect of travel motivations on tourist expenditure, for instance Kastenholz *et al.* (1999). Kastenholz (2005) argues that tourists who value good hospitality and experience with culture and history, and whose demand is also mainly for accommodation and gastronomy, are those with higher spending levels. Concerning the negative effect on tourist expenditure of the closeness to home motivation in 2010, probably this result is related to the lesser amount spent concerning the cost of transport. Thus, H6 is not rejected.

H7, number of nights spent at destination. Length of stay affects tourist spending. According to the results presented in Table 3, this variable is only

statistically significant in one year (2009), and the sign is positive. Possibly this finding is related with the highest value of average daily spending (€111.41) that was registered in the period under analysis. Thus, H7 is partially not rejected.

Finally, the results show that for mature destinations (such as sun and sand destinations), it seems important to maintain a sustainable level of tourism. Thus, the main objective is not a constant increase of tourist arrivals but rather of tourism revenue (among others, see Alegre *et al.*, 2011). For destination management, this is an important issue because tourist companies at the destination reveal the desire for growth in terms of market share by attracting tourists who tend to spend their money but also their time (Mok and Iverson, 2000; Kozak *et al.*, 2008).

Conclusion and implications

This paper analyses the determinants of tourist expenditure, an important variable in international tourism demand analysis. The purpose of the research was to determine the extent to which motivational, behavioural and socio-demographic factors affect the spending of international tourists in the Algarve. To estimate the demand model, a multiple regression analysis was adopted in a cross-sectional study. The paper uses regression coefficients in currencies that are directly interpretable, such as the euro, thus making the interpretation of the analysis of each year easier. The relationship between some determinants and their effect on tourist spending is not, however, linear. To accommodate this fact, dummy variables were used in this study, dividing the analysis by year (2007, 2008, 2009 and 2010).

In order to test several hypotheses, results revealed that a combination of socio-demographic, motivation and travel behaviour factors affect tourist spending. Therefore, the findings seem to suggest that the Algarve has maintained a dynamic pattern of tourist spending behaviour across the years. In the case of tourist motivations, the final regression results identified that not all motivations are statistically significant across the years, and also that their influence on tourist spending presents different patterns across the years. Thus, accommodation, cleanliness, closeness to home, cultural and historical resources, gastronomy, hospitality, golf facilities, price, sightseeing and excursions are significant. However, almost all motivation regressors emerge with a positive effect across the years excluding closeness to home and golf facilities. In this vein, when cross-sectional models are analysed by year, the results suggest that this dynamic of tourist motivations associated with the most loyal markets for the Algarve (the UK, Germany and Ireland) allows us to identify changing patterns of international tourists, which are also associated with change in the patterns of spending behaviour. For instance, when motivations such as sightseeing and excursions and cultural and historical resources appear as significant, the effects on daily spending are positive and tend to be higher.

This paper makes several theoretical and methodological contributions. Since the majority of tourism demand studies are longitudinal studies (Marcussen, 2011), it contributes to the growing literature on tourist spend-

ing through the adoption of a cross-section model. In another stream of analysis, since micro-economic studies tend to integrate explanatory variables with a lower level of aggregation, this study contributes to the need for more micro studies of the determinants of tourist spending (Sainaghi, 2012). Thus, introducing behavioural and motivational aspects could provide a better understanding of 'rational' tourist choice behaviour. In light of this aspect, researching other behaviour theories could open up interesting new avenues towards a better understanding of the changing patterns of consumer spending behaviour in tourism, in the context of social exchange theory. This last theory could be useful in response to Papatheodorou (2001), who pointed out that the use of traditional demand theory in tourism suffers from a number of serious drawbacks, given that it ignores the particularities of tourist products.

Concerning the contribution to theories of tourist motivation, it is important to stress, as previously underlined, that little work has been done on the influence of different types of motivations on tourist expenditure levels (Alegre *et al*, 2011). Thus, by exploring this topic, this research confirms that tourist motivations for sun and sand destinations influence different levels of spending. Furthermore, these motivations are dynamic and present differences in the effects of tourist spending across the years.

In particular, in terms of the implications for policy and destination management of the Algarve, it is important to stress that tourists with motivations that go beyond the demand for traditional beautiful beaches and good weather could play an important role in boosting global tourist expenditure at the destination. The variability of determinants shows that all the attributes are important. In 2007 cleanliness, cultural and historical resources explain most of the spending pattern; in 2008 cleanliness and golf facilities are the most important attributes; in 2009 spending is related to price, sightseeing and excursions; and in 2010 spending is related to lodging, golf facilities, price and hospitality. One challenge for destination managers is to re-engineer the conventional sun and sand product, introducing more added-value according to the tourist expenditure profile, maintaining the loyal markets and at the same time attracting a second generation of sun and sand tourists (Aguiló *et al*, 2005).

Future studies of the marginal effect of travel motivations on tourist spending are necessary to establish revenue frontiers in sun-and-sand tourism products. A comparative analysis of these results with those for other sun-and-sand destinations should be conducted, especially for destinations that are direct competitors of the Algarve region.

Endnotes

1. Social exchange theory assumes that 'the more a behavior results in a reward, the more individuals will behave that way. However, the more an individual receives a reward, the less valued it becomes, and the individual seeks alternative rewards through other behavior or from other sources' (Godbey and Graefe, 1991, p 217 citing Searle, 1990). Thus, Emerson (1976, p 359) believes that 'It is precisely social structures of this sort that violate the assumptions of neoclassical economics (e.g., "vertical organization" and oligopoly in the oil industry). Thus, I like to think of social exchange theory as developing the conceptual tools needed (longitudinal exchange relations and network structures) to deal with exactly those topics that economics theory has trouble with: market imperfections'.

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