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Demand for rural tourism: the effects of quality and information

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Abstract

The development of rural tourism is regarded as a promising diversification strategy especially for lagging and mountainous areas of the European Union. Research concerning the demand and/or supply of rural tourism services has been limited within the agricultural economics domain despite the significance attached to rural tourism by various rural development policy measures and initiatives. The article examines the expenditure behavior of rural tourists within a framework of demand for composite (heterogeneous) goods. The proposed framework captures the quality of the tourism experience as the commodity's unit value, a quantifiable economic variable, examines its effects on expenditures and allows for the estimation of elasticity in prices regarding expenditure and quantity. Empirical analysis is facilitated by a survey recording the expenditure behavior of 465 tourists in two rural and lagging areas of Greece. The quality of the tourism experience is significantly and positively affected by the income, the source from which information about the trip is retrieved (Internet, newspapers as well as general press and special travel press) and by the amount of information sought by the consumer prior to the trip. In turn, the quality of the tourism experience is the major endogenous factor that positively influences expenditures for rural tourism. Further research is needed before evidence provided in this work can be used to draw policy conclusions and recommendations.

JEL classification: D12, Q18

Keywords: Rural tourism; Composite (heterogeneous) goods; Agrotourism quality; Information for tourism services; Greece

1. Introduction

Tourism is widely recognized as the world's largest and fastest growing industry, and there is no indication that its growth is likely to end. In Europe, during the last 20 years alone, tourism demand has more than doubled, and its economic impact is equally impressive. According to 1998–2000 figures, 12% of Europe's GDP is generated by tourism and tourism-related activities and over 20 million jobs have been created in this sector, essentially in small and medium sized enterprises (SMEs) (World Tourism Organization, 2001). However, what these macroeconomic figures do not reveal is that there could be some quite significant changes within the tourism sector itself over the coming years. Already, the classic "sun and sea" tourism destinations in Europe find it increasingly difficult to "compete" as new areas develop elsewhere in the world and become more affordable. Furthermore, "new" forms of tourism in rural and regional settings are emerging and are growing almost three times as fast as the classic tourism market (EC, 2000). A Eurobarometer survey on "Europeans on Holiday (1997–1998)" showed that more and more people are interested not only in "sampling" new places but also in discovering different forms of tourism, placing greater emphasis on quality products, on more environmentally and culturally sensitive forms of tourism and on shorter but more frequent trips, while a significant number of Europeans (23%) choose the countryside as the most preferred tourism destination (EC, 1998). Of course, one should take into account that the traditional forms of tourism are rejuvenating and the "sun and sand" tourism model shows persistence due to significant restructuring (Aguilo et al., 2005). Thus, the pattern of change is not always as dramatic as indicated by the aforementioned figures. Furthermore, the rural tourism market, like all forms of tourism markets and destinations, is both dynamic and erratic. The recent outbreak of foot and mouth disease in the UK is a classic example of an external and highly uncontrolled threat to rural tourism development.

The development of rural tourism has become a major element of rural and regional development policies in the EU and, nowadays, is one of the most important strategies for the diversification of economic activities in lagging and remote rural areas (Briedenhann and Wickens, 2004; Clarke et al., 2001; Fleischer

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and Felsenstein, 2000; Hegarty and Przezborska, 2005; Wanhill, 1997). Lagging behind in their development areas are those EU NUTS (nomenclature of territorial units of statistics) level 2 regions with per capita GDP below 75% of the EU average. These areas are also called "objective 1" regions and are subject to strong policy support measures. The same areas are usually remote or peripheral, a term taken here to mean travel time to national centers. Thus, due to strong policy support, large amounts of public money are being spent today on the development of tourism in the remote and less developed regions of the EU. Over the period 1994–1999, the EU Structural Funds contributed 7.3 billion euros to tourism projects (Roberts and Hall, 2001). Additionally, LEADER, one of the most proactive EU Initiatives operating under the umbrella of Agricultural Policy and Rural Development for the advancement of less developed rural areas, has proven an important catalyst in stimulating local tourism projects integrated within rural development processes. The three sequential phases of LEADER (LEADER I, LEADER II, and LEADER +) focus on tourism's role as a key strategy for an integrated territorial development and the restructuring processes along economic, environmental, and cultural dimensions.

It is evident from the above that rural and regional development efforts attach considerable importance to the development of rural tourism in the mountainous and the less developed regions of the EU. However, little is known about the economic foundations of the rural tourism sector as such, or about the impact of the measures taken to develop it. Although tourists' expenditures and the demand created for tourism in rural areas is acknowledged to be one of the most prominent trends in today's tourism restructuring in Europe, little is known so far about this demand, and empirical economic studies of this kind are very limited (Downward and Lumsdon, 2000; 2003). Furthermore, agricultural and rural economists have not really worked on this issue. This raises a number of questions as to why rural economics research has not yet touched the topic.

The rural tourism service is a peculiar service in the sense that it is not a sole and homogenous service (or product) of the kind agricultural economists usually treat, for example meat or dairy products, but rather a complex experience of a mix of services (i.e., bed and breakfast and local amenities) or products (i.e., local food, artisan, and handicraft products) that are simultaneously consumed. In tourism research, the tourist experience is now understood as a multidimensional concept made up of the "peak" experience (also called the net or pure experience) and the "secondary" experiences (also called derisive or supporting experiences). The "peak" experience is usually the core attraction or activity in a tourist destination, and the "secondary" experiences are related to eating, sleeping, transportation, and other experiences necessary to the journey (Quan and Wand, 2004; Ryan, 2002, 2003). In the framework of the services marketing/management literature, both the peak and secondary experiences are important parts of the total consumption of the tourism service, especially in the light of the increasing demand for higher standards in quality.

Thus, the conventional frameworks examining demand for homogenous products or services are not really appropriate for the study of rural tourism. At the same time, the rural tourism sector is not restricted in the traditional hospitality industry including services of travel agents, hostels, and restaurants but is extended to the food and local products manufacturing industry as well as the agricultural sector because many of the firms that produce rural tourism are, essentially, pluriactive farms. As a result, it is also difficult to define a theoretical framework for the study of rural tourism's supply or its industrial organization. On the other hand, we argue that agricultural and rural economists should intensify efforts in the rural tourism research area because this is directly linked to rural development, farm diversification activities and the local food and handicrafts manufacturing industry.

The study of rural tourism demand, in general, and of consumers' spending behavior in particular, is a good starting point for research in rural tourism economics. The demand for rural tourism services has direct, indirect, and derivative effects on an areas' product, rural incomes, and rural employment (Saarinen, 2003). Tourists spend money on rural products and services and thereby generate an autonomous (external) demand for an area's products and services. This in turn, has a direct impact on output, income, and employment. Due to multiplier effects, this direct demand for rural tourism products and services generates indirect and derivative (induced) effects in all sectors of the economic structure (see Dwyer et al. [2004] for CGE models, Archer and Fletcher [1996] for a Leontief approach and Vaughan et al. [2000] for an interpretative presentation of impact analyses concerning visitor spending). In this sense, rural tourism can be a means of providing economic development in peripheral and lagging regions. According to Telfer (2002), in the context of core-periphery systems, tourism can transfer wealth from the richer urbanized areas to the poorer peripheral regions which have often fallen below national averages on social and economic indicators related to well-being and quality of life.

The aim of the present article is to model demand for tourism in rural and peripheral areas in a coherent and sound neoclassical framework. Analysis of the spending behavior of consumers in two popular Greek rural tourism destinations is facilitated by consumer data collected within the framework of an EU-funded research project. In our modeling of household demand for rural tourism we incorporate the very nature of rural tourism being viewed through a rural development perspective, i.e., tourism is a system of branches or a cluster of different economies rather than a single independent form of economy. Thus, when tourists buy the service called "tourism experience" what they are actually buying is composite—heterogeneous services that consist of their activities resulting from their visit to a certain region. The spending behavior of tourists, like spending on any good or service in general, is highly influenced by consumers' attitudes towards the expected quality of the good or service under consideration. In the proposed model, however, an indicator of quality is incorporated as a measurable economic variable and not as an attitudinal or perceived variable. Finally,

the proposed model facilitates an examination of the effects of different levels of consumer information about the "tourism experience" that are hypothesized to signal varying levels of quality of the tourism experience commodity.

2. Theoretical framework

2.1. Underlying concepts

Tourism market in rural areas is evolving in a highly competitive arena. Rural areas and many mountainous and lagging regions share, in some way, similar characteristics, as they have similar objective attributes, such as tourist resources and activity bases. This creates a state of high competition, in which quality is a central issue and one of the most important dimensions for further development. The level of quality enjoyed by a consumer is, even though not solely, related to the amount of information the consumer is able to get and process about the service or product to be consumed. Thus, two concepts that should be presented and discussed, before a formal model is presented, relate to quality tourism and the role of information regarding the tourism experience.

Quality allows goods to be differentiated from one another and the "qualification of goods" is at the heart of economic competition and the organization of markets (Callon et al., 2002). As Callon et al. (2002, p. 199) describe it, ". . .quality is obtained at the end of a process of qualification, and all qualification aims to establish a constellation of characteristics, stabilized at least for a while, which are attached to the product and transform it temporarily into a tradable good in the market." Quality is a complex notion having different and sometimes contradictory meanings. While there is no generally agreed upon definition of quality relevant to both products and services, one operational definition of quality has it referring to an organization's ability to produce and deliver that which is demanded in a manner which consistently meets consumer expectations (O'Neill and Black, 1996). As such, important aspects of the concept of quality are the satisfaction of consumer needs and a consistent level of performance provided by the product or service. In the words of Ilbery and Kneafsey (1998), ". . . quality is a positional characteristic; something which is above minimum standards and which gives a product or a service a cutting edge on its rivals." Consumers' judgments of quality are based on the extent to which satisfaction of needs and expectations is met. In the case of rural tourism, the tourists' judgment of satisfying needs is based on the quality of the tourism experience that they consume. Quality thus depends on different appraisals introducing different segments into the organization of the tourist market (Dimara et al., 2002). An important mechanism for the construction of different quality judgments over a product or service is the provision of information as well as the different sources of the provided information. These are important considerations when analyzing rural tourism demand and its implications for rural areas.

The demand for rural tourism services completes a wide range of consumers' needs that go beyond the needs met by conventional "package" tourism services, such as relaxation, recreation, amenity, and involvement in sports. Channey (1996) argues that particular lifestyle attributes, reflecting a manner and way of consuming, are an indicator of sociocultural status. Consumption of denominated food and drink in rural tourism establishments may be a statement of taste, fashion, sophistication, and other related issues encompassed by a specific lifestyle. The consumption of rural tourism services may also serve a "nostalgia" for natural life or "the past" or for the place where the consumer was born and raised. At the same time, locally produced food served at rural tourism establishments or participation in local and traditional festivals may be viewed as an expression of cultural identity (Nygard and Storstad, 1998), whereby commoditization of local culture revalorizes place through its cultural identity (Ray, 1998). Hopkins (1998) argues that society feeds on signs and symbols which may be used to market local culture, a process described as cultural re-localization by Ilbery and Kneafsey (1999). Rural tourism developments have relied heavily on cultural re-valorization and re-localization in order to differentiate their tourism service and compete on the fringe of tourism services. Indeed, numerous studies suggest that tourism in rural areas is an extremely diverse sector leading to a wide range of visitors' needs and expectations and high fragmentation (see Frochot [2005] for the most recent review of the relevant literature). As such, expectations of quality are different for different visitors or the same visitors to different activities/experiences.

Consumers, in their search for services that satisfy the aforementioned needs, seek information that goes beyond what is usually asked regarding conventional tourism services. Consumers seek information that can somehow re-assure them that their experience will live up to their expectations. Thus, besides conventional information concerning the weather conditions and places of significant interest, consumers may also seek information concerning the association of the tourism experience with a geographic area, its quality certification, its possible use of culinary heritage or the use of tradition and local culture in the local hospitality industry and in related activities. Nelson's (1970, 1974) and Darby and Karni's (1973) seminal work have set the basis for the understanding of the operation of consumer markets for quality products. Quality products and services are characterized by search, experience, and credence attributes. Search attributes assist a consumer to determine the service's quality and can be researched or examined by the consumer before buying the service. In tourism, the characteristics of the hospitality industry and especially of the rural tourism establishments, is the most vivid example of a search attribute. Experience attributes can be determined by the consumer once the product has been purchased and consumed. Satisfaction from a cooked meal or relaxation from a peaceful holiday break are clear examples of experience attributes. Credence attributes are all those service properties that cannot be determined by the consumer at any case, even if the service is

bought and consumed. Nutritional characteristics (Mojduszka and Caswell, 2000) of the cooked meal or the environmental quality of the air are well-known credence attributes. Information on search attributes depends on the consumer's ability to search, perceive, and process such information. However, as far as experience attributes are concerned, the most important issue is information and how consumers can acquire the level of information that will protect their interests and reduce the risk of failure.

Since consumers cannot judge experience attributes of rural tourism until after they buy and use the product, they always run a risk of purchasing a service that will not satisfy them or that will not increase their utility causing "damage" to their pocketbooks. In order to reduce this risk, consumers try to learn about the product's attributes in various ways. One way is to acquire information from either more informed consumers (personal communication) or from media news and specialist columns in newspapers, magazines, etc., Bagwell and Riordan (1986) examine the case in which consumers enter the market sequentially and the knowledge of informed consumers can be used by previously uninformed consumers. Another strategy that reduces consumer risk is the gradual and repeated purchase of the product or service where reputation is important and consumers have some degree of loyalty to higher quality producing firms or, in the case of rural tourism, to higher quality producing areas (Allen, 1984; Shapiro, 1983, 1982). Finally, consumers may learn about service attributes through quality signaling in the form of informational labeling, certifiers or branding, warranties, and advertisement. Models developed by Akerlof (1970) and Grossman (1981) explore the conditions under which information on product or service quality can be effectively supplied to consumers. Akerlof's famous "market for lemons" model concludes that the quality product market may disappear completely and only the lowest quality products may be sold if sellers cannot signal quality. In contrast, Grossman's signaling model concludes that markets for varying levels of quality will exist and operate smoothly if totally effective, truthful, and costless quality signaling and verification of claims are assumed. Despite the contradicting conclusions, both models stress the important role of signaling (information transmission) on quality.

Information about a product or service has potentially strong influence on perception of quality and preference (Dransfield et al., 1998). A wide range of sources of information on products or services is used by consumers, including TV/radio broadcasting, the press including magazines and newspapers, specialized press, the Internet, etc. (Lappalainen et al., 1998). The cause of information is important because individuals process information according to its perceived cause and consider information provided by the factual performance of the entity in question more reliable than information provided by other factors (Mizerski, 1982). In general, personal or neutral information is more reliable and more influential than nonpersonal and market-oriented information (Engel and Blackwell, 1982). Information of a neutral nature, such as that provided by the news media or other objective sources is more effective because it is considered more credible than advertising or other market oriented sources (Chang and Kinnucan, 1991).

2.2. A model of demand for rural tourism

A single equation approach to estimating tourism demand is the usual practice in tourism economics research. The underlying economic theory is based on a single equation demand function and the estimation of an expenditures (Downward and Lumsdon, 2003, 2000) or budget share (Melenberg and Van Soest, 1996) regression model. Systems of equations models of tourism demand, and especially the AIDS model, have been used to examine the allocation of a tourism expenditure budget between different destinations (e.g., Syriopoulos and Sinclair, 1993). The model presented below, which has been primarily developed in the mainstream agricultural economics domain, acknowledges the heterogeneous nature of the "tourism experience" service and allows for the examination of the effects of quality as a quantifiable economic indicator.

In their seminal work, Prais and Houthakker (1955) proposed that prices in cross-sectional demand surveys usually reflect "quality" effects that should be taken into account prior to estimation. Since then, this proposal has created a framework for analyzing composite (heterogeneous) commodity quantities and has been used and adapted by various researchers (Cox and Wolhgenant, 1986; Deaton, 1987, 1988; Dong et al., 1998; Nelson, 1991; Skuras and Dimara, 2004). Composite commodity quantities are the sum of the physical quantities of elementary goods in a group of commodities. In our case, the composite service is "the tourism experience" in general, and its physical quantity is the sum of days spent consuming the tourism experience. The framework presented here draws heavily on past work instigated by Nelson (1991) and carried further by Dong et al. (1998).

In microeconomic terms, the household maximizes utility by solving the problem:

$$\max U(x_1, \ldots, x_k) \quad \text{s.t.} \quad \sum_{i=1}^{k} p_i x_i = Y\,, \tag{1}$$

where x_i corresponds to the physical quantity of the elementary good i, i.e., the number of days spent on a trip, p_i is the corresponding exogenous price for this trip, which is usually not observed, $i = 1, \ldots, k$, and Y is the consumer's income. If Q_G is the quantity of the composite commodity "tourism experience," and P_G is the corresponding composite commodity price, then:

$$\max U(Q_1, \ldots, Q_n) \quad \text{s.t.} \quad \sum_{G=1}^{n} P_G Q_G = Y. \tag{2}$$

Following Eq. (2), the demand function for the composite commodity "tourism experience" is:

$$Q_G = Q_G(P_G, Y)\ . \tag{3}$$

According to Nelson (1991), the prices of Eq. (1) can be expressed as:

$$p_i = P_G p_i^*\ , \tag{4}$$

which actually assumes that the prices p_i of the composite service called "tourism experience" vary proportionally. The term p_i^* is a quality indicator called the base price of good x_i by Nelson (1991). Dong et al. (1998) and Nelson (1991) derive from the Hicksian composite commodity theorem that:

$$Q_G = \sum_{i \in G} p_i^* x_i\ . \tag{5}$$

Equations (4) and (5) may be combined resulting, as expected, to:

$$P_G Q_G = \sum_{i \in G} p_i x_i\ . \tag{6}$$

Nelson (1991) argues that, in principle, the Hicksian composite commodity theorem does not require that goods be related in any other way other than through their constant relative prices and provides the example that even popcorn and airplanes could be in the same grouping if their prices moved together.

In general, both P_G and Q_G are unobserved. However, expenditures on the composite service "tourism experience" are observed as:

$$E_G = \sum_{i \in G} p_i x_i = \sum_{i \in G} P_G p_i^* x_i = P_G \sum_{i \in G} p_i^* x_i = P_G Q_G\ . \tag{7}$$

These expenditures refer to aggregate expenditures for elementary services within the composite service such as expenditures for staying at a bed and breakfast for a number of days, or expenditures for food away from home for the same number of days. When the consumers of a tourism service are asked about their tourism experience, the most frequent answer is "I went to 'x' place for 'x' number of days." In so responding, the consumer adds all expenditures that incurred during this trip which is actually the money paid for buying a specific amount of travel days. Cramer (1973) argues that if, from the consumers' point of view, the quantities of several goods can be sensibly (logically) added together then such goods belong to the same commodity. Thus, the composite service "tourism experience" can be expressed in a common term as regards physical quantities, i.e., the number of days of tourism experience. Nelson (1991) and Dong et al. (1998) argue that, when physical quantities, i.e., days of tourism experience (q_G) are also observed, a unit value (V_G) may be calculated as:

$$V_G = E_G/q_G = P_G Q_G/q_G = P_G v_G. \tag{8}$$

The natural logarithm of Eq. (8) yields:

$$\ln V_G = \ln P_G + \ln v_G\ . \tag{9}$$

Since P_G is assumed constant within the composite commodity group G, the first term of the right hand side of Eq. (9) is constant, while the second term is the quality measure for the composite commodity. The unit value is an indirect measure of quality because the larger the proportion of higher-priced days in the composite service called "tourism experience" the higher the value of the unit value. Using equations (7) and (9) and standard microeconomic theory, we can express expenditures as a function of unit value, disposable income and a vector of household-specific characteristics as:

$$E_G = f(\ln V_G, Y, Z)\ . \tag{10}$$

Unit values, in general, are not exogenous to the consumer because they depend not only on the exogenous price level but also on the consumer's choices. This reflects the "quantity/quality" distinction of the tourism experience. The consumer is not interested in days of tourism experience but in days of particular types of tourism experience. Therefore, the measure of quality defined in Eq. (9) is a scalar indicator of the consumer's valuation of all omitted characteristics in the purchased composite service, i.e., the tourism experience. As a result, one may assume that:

$$\ln V_G = f(Y, W)\ , \tag{11}$$

where W is a vector of household-specific characteristics including sources and quantity of information retrieved before the trip and assumed to influence the search for quality tourism and the effective transmission of quality signaling. Due to the possible correlation of the unit value with the disturbance term of the expenditure Eq. (10), simultaneity must be accounted for. Thus, equations (10) and (11) will be simultaneously determined as a system of equations.

4. Case study and data

4.1. Case study areas

Rural tourism in Greece has been used as a major rural development mechanism in lagging and mountainous areas and has been supported by various European Union Initiatives, including LEADER and many Regional Operational Programs. In Greece, considerable proportions of public funds have been channeled to the mountainous and less developed areas of the country. In many cases, tourism and recreation represent the only form of economic activity that offers favorable prospects for the future.

During the second Community Support Framework (CSF) programming period, 1994–1999, rural tourism in Greece was supported through a number of initiatives and programs such as the Community Regulation 950/97, the LEADER II Initiative and the Regional Operational Programs. Investments related to rural tourism and small handicraft businesses were central to the intervention initiatives implemented in Greek mountainous and less favored areas. Construction and reconstruction of accommodation facilities absorbed the majority of these funds. Through Regulation 950/97, about 60 million euros were provided in support of 900 rural tourism projects in the country.

Through the LEADER II (Measure 3) Initiative, 1,100 projects were implemented for which a total of 114.45 million euros was spent (public contribution amounted to 59% of total spending). Again, the projects implemented under the LEADER II initiative were directed towards creating accommodation facilities and developing alternative tourism activities. Taken together, the LEADER I and LEADER II initiatives resulted in the generation of a rural tourism capacity approximating 10,000 beds in the country, while 2,315 permanent job positions and 2,300 part-time job positions were generated. Also, during the same period, the Regional Operational Programs (ROP) with the amount of approximately 8.2 million euros financed almost 110 rural tourism and recreation projects. Investments through the ROP involved fewer intervention regions (Ministry of Agriculture, 1999, 2001).

During the third CSF programming period, and the restructuring of structural funds directed by the publication of Regulation 1260/99 and other specific Regulations (1261, 1262, 1257), rural tourism in Greece has been supported through the 2000–2006 Operational Program "Agricultural Development and Restructuring of the Rural Areas" (and Measure 7.9 in particular) with the amount of 81.35 million euros. The goal is to complete 180 investment plans by the end of 2006 (Ministry of Agriculture, 2004). At the same time, Measure 7.6 aims at the diversifying agricultural activities of full-time and part-time farmers so that they will be able to generate income from alternative activities. This measure involved the amount of 60.56 million euros and the goal is to support 330 investment plans related to rural tourism and handicrafts by the end of 2006. This data is only part of the amount of financial support directed to rural tourism and it should be noted that additional funds are directed to rural tourism through the LEADER + initiative and the continuation of the Regional Operational Programs for which, however, data at the national level is not yet available.

As mentioned before, the basic aim of this research is to study the spending behavior of visitors to rural areas and the factors influencing their "quality" attitudes as these are captured by the unit value of the tourism experience. Information gathered before the tourism experience is assumed to be one of the most influential factors shaping "quality" attitudes of consumers. Such a study cannot be based on official statistics and, to the best of our knowledge, there is no published research concerning this specific issue in Greece. Consequently, it was decided that we should employ our own data collection procedures to acquire appropriate data for our research aims. This data collection was facilitated by an EU funded research program. Two lagging and mountainous areas reflecting a variety of rural tourism development schemes were selected as case study areas, namely the region of Kalavryta, in the prefecture of Achaia, and the prefecture of Evrytania.

The region of Kalavryta is a mountainous area but it is situated quite close to the urban center of Patras and fairly near to Athens, the capital of Greece. The tourist attractions offered in the area include the second largest skiing facilities in Greece, the Gorge of Vouraikos, protected under the Natura 2000 Convention, the Cave of the Lakes, the third largest cave in Greece and of course places of historical interest related to both ancient and more recent historical events. Although these areas are quite near the town of Kalavryta, all tourist development schemes are concentrated in the town itself, which is also well known for its quality food processing businesses with dairy food and feta cheese being the most prominent products. Kalavryta is a convenient winter resort for one- or two-day visits by residents of Athens or Patras who enjoy skiing, or an all-year resort for organized tourism.

The prefecture of Evrytania is not as easily accessible as Kalavryta. It is situated in the mountains of Central Greece, about 300 km from Athens in the south and Salonica, the second largest city, in the north, thus making daily excursions from large urban centers quite forbidding, despite the attraction of a skiing facility. Other tourist attractions are mostly scattered over an area of more than 80 villages in the prefecture. Economic activities in Evrytania are more diverse than in Kalavryta and its remoteness has forced the development of a sustainable trading sector (wholesale and retail) and many support services. Local food businesses concentrate on the processing of meat (especially sausages), herbs, local spirits, local confectionaries, preserves, and sweets.

In summary, both destinations have developed a tourism sector that is based on natural and cultural heritage, small scale accommodation and catering facilities, and the operation of ski centers. These are only some of the common elements of tourism development in these regions and their only distinct differences concern location in relation to large urban centers and the spatial concentration of tourism development.

4.2. Data collection procedures

Data were obtained from face to face interviews based on structured questionnaires and conducted by a research team, supervised and directed by the authors of this work. The sampling frame (population) consisted of visitors in the two case study areas over the period of spring 2002 to spring 2003. The target sample size, dictated mainly by the project's financial constraints, was 250 visitors for each case study area, in different seasons of the year according to an a priori distribution based on estimates provided by the local agencies of the Greek National Tourism Organization. Interviews were conducted in a number of "honey spots" in each case study area and addressed visitors who had concluded or were just concluding their holidays in the area and were about to leave. A total of 513 questionnaires were collected. The structured questionnaire recorded a wide range of information, such as expenditures, attitudes and points of view about rural tourism, sources and amounts of information obtained by the visitors before their actual visit with regard to their destination, as well family and as personal characteristics of the head of the household.

The interviews also included a checklist of expenditures that recorded all possible individual items. From the collected data,

Table 1
Definition and descriptive statistics of variables

Variable name	Variable definition	Mean	Standard deviation
	Dependent variables		
EXPENDITURES	Expenditures for travel, hotels, food, and recreation in euros	321.74	374.75
UNIT VALUE	Natural logarithm of the unit value of the "tourism experience" as expenditures divided by the number of adult equivalent days of the trip	3.89	1.18
	Independent variables		
FAMILY INCOME	Natural logarithm of family income measured in thousand euros	9.53	0.55
CHILDREN	Natural logarithm of number of children staying at home	0.21	0.36
AGE	Age of the head of the household in years	36.91	11.25
MARITAL	Marital status, dummy variable taking the value of 1 if respondent is married	0.72	0.45
EDUCATION	Educational level of the head of the household, dummy variable taking the value of 1 if the head holds a degree	0.55	0.50
INTERNET	Source of information is Internet, dummy variable taking the value of 1 if the respondent seeks travel information in Internet sources	0.30	0.46
NEWSPAPERS	Source of information is newspapers, dummy variable taking the value of 1 if the respondent seeks travel information in newspapers or magazines	0.84	0.24
SPECIAL PRESS	Source of information is special press, dummy variable taking the value of 1 if respondent seeks travel information in travel magazines and other special editions	0.35	0.48
INFORMATION	Number of different items of information retrieved before the trip	2.21	1.89

Source: Survey responses.

we estimated the total expenditures for the tourism experience and the unit value of the tourism experience. If we consider the whole tourism experience in an area to represent a composite (heterogeneous) commodity, then its physical quantity may be expressed in days of tourism experience. The sum of all elementary expenditures, i.e., expenditures for travel to and from the area, expenditures for hotel and food and expenditures for participating in various recreation activities and/or sports, may be used as a proxy to aggregate (total) expenditures for this composite commodity. Thus, a unit value for this composite commodity may be calculated by dividing the total sum of expenditures by the physical quantity consumed, i.e., the number of days of tourism experience.

The interviewees were assisted by a checklist that recorded all possible sources of information and all individual items of information that consumers seek before traveling to the specific place. The sources included the internet, specialized or not press, TV and radio broadcasts, maps, travel books, advertisement material, information from travel agents, information received from friends and relatives who had traveled to the area, etc. Among the individual items of information the checklist included information on travel (accessibility and quality of roads, etc.), hotels, restaurants, history of the area, recreational activities, amenities, environmental sites, traditional architecture, local products, weather conditions, etc. The final analysis was based on 465 questionnaires that were correctly collected and contained the information utilized in this work. Almost half of the questionnaires that were not used in the analysis had to be rejected due to respondents that declined to reveal their sources of information despite the fact that they declared that some sort of information had been retrieved. Comparing the average of important economic variables (expenditures, income, etc.) from these questionnaires to the total number of the collected questionnaires (the full sample) did not reveal the existence of any systematic pattern and thus serious bias. The definitions and descriptive statistics of all variables used in our analyses are presented in Table 1.

5. Estimation and results

The system of simultaneous equations (10) and (11) was estimated using three stage least squares by instrumenting on all independent variables and using the appropriate routines of the LIMDEP software (Greene, 2002). The model presented in Table 2 is the outcome of an extensive search process among different models involving a wide range of variables and functional forms, taking into account the degree of sample heterogeneity imposed by the acknowledged fragmentation of the rural tourism market (Frochot, 2005). The search for the best model was guided by two criteria. Firstly, we searched for a plausible and theoretically informed model from an economic point of view and secondly for the model with the best econometric properties among alternative theoretically informed models. In that respect, we included in our models the variables usually included in demand studies. In the expenditure equation, we included the logarithm of the income of the household, the age and number of dependent children as well as marital status and education of the head of the household. In the unit value equation, we included the logarithm of the income of the household and of the number of dependent children, three distinct sources of information and a variable capturing the total amount of information retrieved by the respondent before traveling to the area. The sources of information that entered the analysis do not

Table 2
Three stage least squares estimated results of the system of expenditure and unit value equations

Variable unit value equation	Parameter (*t*-value)	Variable expenditure equation	Parameter (*t*-value)
Constant	0.70 (0.75)	Constant	−987.54 (−3.61)**
FAMILY INCOME	0.26 (1.80)*	UNIT VALUE	168.96 (12.54)**
CHILDREN	0.22 (2.26)**	FAMILY INCOME	49.34 (1.66)*
INTERNET	0.27 (2.38)**	CHILDREN	− 57.53 (−1.30)
NEWSPAPERS	0.73 (3.60)**	AGE	3.49 (2.39)**
SPECIAL PRESS	0.28 (2.49)**	MARITAL	54.30 (1.38)
INFORMATION	0.11 (3.97)**	EDUCATION	41.26 (1.35)
Log-L	−683.28	Log-L	−3,330.20
$F_{[6,458]}$	10.98	$F_{[6,458]}$	31.95
$\bar{R}^2$	0.12	$\bar{R}^2$	0.29

Source: Own calculations using survey responses.

show any significant correlation. Other sources of information were either not significant (previous visits to the area, information from friends and relatives) or significantly correlated with those that entered in the final estimation. The variable measuring the amount of information retrieved before travel assumes that each piece of information acquired has the same weight for the consumer, for example information concerning the weather conditions in the area and information about sites of interest are of equal importance and both pieces of information contribute a value of one to the total amount of information retrieved before the trip.

Variables recording the respondent's perceptions or attitudes were excluded from the present analysis. For example, a variable recording the respondent's perception categorizing the area's image as a recreation place in three classes was excluded due to the fact that it records perceptual and not factual data. Variables that were not statistically significant were excluded from the analysis unless they were exclusively referred by a relevant economic theory such as income, demographic and human capital characteristics of the respondent or the household. Hence, a dummy variable capturing locatable differences between the two case study areas, a dummy variable capturing the location of the household being in Athens or elsewhere and other variables specific to the household or the respondent such as relations with the area, if any, the respondent's gender, and other variables were excluded from the final model. Finally, various variables entered the analysis in various functional forms. For example, we tried to capture nonmonotonic effects of the income of the household by including it in a quadratic form without any statistically significant results. The estimated coefficients and asymptotic *t*-values are presented in Table 2. This model has the best statistical properties of all the models fitted according to the aforementioned process, fairly good explanatory power, and statistical significance.

The equation for the logarithm of unit value shows that the logarithm of income and the logarithm of the number of children are significant positive factors. The number of dependent children may be viewed, due to the absence of a relevant variable, as a close proxy family size. Due to the double-log specification of the unit value equation, the coefficient associated with income may be directly interpreted as the unconditional elasticity of unit value with respect to income. The corresponding elasticity with respect to number of children is positive, a fact that is not really supported by literature and is unexpected. The unit value is positively and significantly affected by the source from which information is retrieved (Internet, newspapers, the press, and special travel press) and by the amount of information sought. As a result, it may be argued that "objective" sources of information and the amount of information retrieved are associated with quality consumers. Furthermore, the effect of information sources from the general press is notably higher in comparison with the effect of the other two sources of information in the unit value equation.

The expenditure equation has a semilog specification. The logarithm of unit value has a positive and statistically significant effect on expenditures. The price (unit value) elasticity of expenditure is 2.25 (for an average unit value of about 75 euros). Taking into account that the price (unit value) elasticity of expenditure is $\eta_E = \partial \ln E_i / \partial \ln V_i$, and the price elasticity of quantity is $\eta_q = \partial \ln q_i / \partial \ln V_i$, Nelson (1991) shows that $\eta_q = \eta_E - 1$ because $E_i = q_i V_i$. Thus, a demand elasticity of 1.25 may be derived for rural tourism services from this study. Household income has a very small (nearly zero) effect on expenditures for the rural tourism experience. This may be due to two reasons. First, it may be due to the fact that the sample contains, in general, households of higher income and the semilog specification allows the income elasticity to fall (continuously towards zero) as income increases. Second, it may be due to the fact that households with higher incomes purchase higher quality (value) services, and as a result the income effect is offset by the quality (unit value) effect.

6. Discussion and policy implications

Evidence provided in this work shows that expenditures for purchasing rural tourism services are significant as the average per day and per household expenditures approach 75 and the corresponding total expenditures for the tourism experience are over 320 euros. This constitutes a very significant inflow of money to lagging and mountainous areas and an important exogenous demand for their services. If firms in the local hospitality industry present a high degree of integration with the wider local economy, this significant exogenous demand may be translated into important increases in local incomes due to multiplier effects. In that sense, the high degree of integration of the hospitality industry means a high propensity to buy local inputs.

The unit value of the tourism service is a central economic indicator of the quality of the purchased rural tourism service. The unit value has significant income elasticity and is positively affected by the source and amount of quality signaling transmitted to the consumer. Objective or neutral sources of information exert a significant positive effect on the unit value. The amount

of information retrieved before rural tourism is consumed also exerts a significant and positive effect on the unit value, indicating that availability of information which provides adequate means of hedging against risk increases the unit value. In return, the unit value is the major determinant of demand with a highly significant elasticity that probably offsets income effects.

Rural tourism will continue to remain an important strategy for the resurgence of lagging rural economies due to the associated significant economic impacts. Quality of the tourism experience greatly increases expenditures and consequently the exogenous demand for the tourism services of an area. Quality should be clearly transmitted to the consumer through neutral sources and abundant information. Thus, it is in the interest of local economies to offer high quality tourism and attempt to promote and disseminate information on their service to neutral sources of information. Local authorities (rural development boards or tourist offices) often find it hard to judge the effectiveness of their advertising budgets, yet none dare reduce spending for fear of losing trade. Different sources and types of information have differing impacts on consumers. It is argued that personal and neutral information are more influential than nonpersonal and market-oriented information (Chang and Kinnucan, 1991). Information of a neutral nature, such as that provided by the news media or other objective sources, is considered to be more effective because it is more credible than advertising. Information resulting from personal interaction is also very effective because of the potential for feedback between the source and the receptor of information. Evidence from this work shows that money spent on promotion has real benefits in terms of more spending. Hence, rural development agents should promote the hospitality industry of their area in two ways. First, rural development authorities should try to raise publicity about the area in the press (newspapers and magazines) as well as in the specialised press such as travelers' magazines which are considered to be a neutral source of information. Second, authorities should maintain websites for the dissemination of information and allow interaction via electronic mail. Finally, for this demand to be effective at local level, the integration of the hospitality industry with other sectors of the economy should be advanced.

The approach presented in this article is partial and fragmented. It is partial because it deals only with consumers and does not take into account local enterprises and especially their decision to produce tourism services as well as products and to deliver information to consumers. It is fragmented because it deals only with two case study areas in Greece and therefore is only indicative of these specific areas and one country. The results should not be accepted uncritically nor should they be generalized to hold for other areas or other member states of the EU before they are coupled and compared with results pertaining to other areas and other countries. Thus, the results obtained from this work are rudimentary and partial, and no policy recommendations may be based on their interpretation. They can, however, serve as a starting point for further analysis of the role of rural tourism as a rural development strategy and for future research in this area.

A final shortcoming of the model presented here is that quality is bound up with a competitive market—choosing a higher-priced item of higher quality instead of a lower-priced, lower-quality one, when both are available. There are many cases (and places) where truly competitive markets do not really exist and the "quality-price" choices available to tourists are artificially narrowed to an extremely short price (quality) range. Furthermore, for many tourists there is no real assessment of competing holiday locations. Competition is reduced, for example, by visitors' brand loyalty, e.g., habitual (repeated) visiting. If promotion and marketing create extreme geographical distinctiveness and high market segmentation in the minds of tourists, then competitiveness is weakened at a micro scale, and tourists will be less price sensitive than perhaps they should be. Such distinctiveness can limit place competition, raise prices, and be regressive for low-income tourists.

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References

Aguilo E., Alegre J., Sard M., 2005. The persistence of the sun and sand tourism model. Tour. Manage. 26, 219–231.

Akerlof, G. A., 1970. The market for "lemons": quality, uncertainty and the market mechanism. Q. J. Econ. 84(3), 488–500.

Allen F., 1984. Reputation and product quality. Rand J. Econ. 15, 311–327.

Archer B., Fletcher J. 1996. The economic impact of tourism in the Seychelles. Ann. Tour. Res. 23(1), 32–47.

Bagwell K., Riordan M., 1986. Equilibrium Price Dynamics for an Experience Good. Discussion Paper 705, CMSEMS, Northwestern University, USA.

Briedenhann J., Wickens E., 2004. Tourism routes as a tool for the economic development of rural areas—vibrant hope or impossible dream? Tour. Manage. 25, 71–79.

Callon M., Meadel C., Rabeharisoa V., 2002. The economy of qualities. Econ. Soc. 31(2), 194–217.

Chang H., Kinnucan H., 1991. Advertising, information, and product quality: the case of butter. Am. J. Agric. Econ. 73, 1195–1203.

Channey D., 1996. Lifestyles. Routledge, London, 208 pp.

Clarke J., Denman R., Hickman G., Slovak J., 2001. Rural tourism in Roznava: a Sloval case study. Tour. Manage. 22, 193–202.

Cox T., Wolhgenant M., 1986. Prices and quality effects in cross-sectional demand analysis. Am. J. Agric. Econ. 68, 908–919.

Cramer, J. S., 1973. Interaction of income and price in consumer demand. Int. Econ. Rev. 14, 351–363.

Darby, M. R., Karni E., 1973. Free competition and the optimal amount of fraud. J. Law Econ. 16, 67–88.

Deaton A., 1987. Estimation of own- and cross-price elasticities from household survey data. J. Econom. 36, 7–30.

Deaton A., 1988. Quality, quantity and spatial variation of price. Am. Econ. Rev. 78, 418–430.

Dimara E., Petrou A., Skuras D., 2002. Consumer's appreciation of regional image and the perceived quality of rural tourism. Paper presented to the 72nd European Association of Agricultural Economists Seminar, Chania, 7th–10th June, and available at Working Papers in Economic (WoPEc) Available at http://netec.mcc.ac.uk/WoPEc/data/Papers//wiwwiwrsaersa02p272.html

Dong D., Shonkwiler J., Capps O., 1998. Estimation of demand functions using cross-sectional household data: the problem revisited. Am. J. Agric. Econ. 80(3), 466–473.

Downward P., Lumsdon L., 2000. The demand for day-visits: an analysis of visitor spending. Tour. Econ. 6(3), 251–261.

Downward P., Lumsdon L., 2003. Beyond the demand for day-visits: an analysis of visiting spending. Tour. Econ. 9(1), 67–76.

Dransfield E., Zamora F., Bayle, M-C., 1998. Consumer selection of steaks as influenced by information and price index. Food Qual. Prefer. 9, 321–326.

Dwyer L., Forsyth P., Spurr R., 2004. Evaluating tourism's economic effects: new and old approaches. Tour. Manage. 25, 307–317.

Engel, J. F., Blackwell, R. D., 1982. Consumer Behavior. Dryden Press, Chicago, 690 pp.

European Commission, 1998. Facts and figures on the Europeans on Holidays 1997–1998. Executive Summary, Enterprise Directorate General, Brussels.

European Commission, 2000. Using natural and cultural heritage to develop sustainable tourism. Enterprise—The Tourism Unit Directorate General, Brussels.

Fleischer A., Felsenstein D., 2000. Support for rural tourism. Does it make a difference? Ann. Tour. Res. 27(4), 1007–1024.

Frochot I., 2005. A benefit segmentation of tourists in rural areas: a Scottish perspective. Tour. Manage. 26, 335–346.

Greene W., 2002. LIMDEP version 8.0, Econometric Modeling Guide Volume 1. Econometric Software, Plainview, NY.

Grossman, S. J., 1981. The informational role of warranties and private disclosure about product quality. J. Law Econ. 24, 461–489.

Hegarty C., Przezborska L., 2005. Rural and agri-tourism as a tool for reorganising rural areas in old and new member states—a comparison study of Ireland and Poland. Int. J. Tour. Res. 7, 63–77.

Hopkins J., 1998. Signs of the post-rural: marketing myths of a symbolic countryside. Geogr. Ann. B 80, 65–81.

Ilbery B., Kneafsey M., 1998. Product and place: promoting quality products and services in the lagging rural regions of the European Union. Eur. Urban Reg. Stud. 5(4), 329–341.

Ilbery B., Kneafsey M., 1999. Niche markets and regional specialty food products in Europe: towards a research agenda. Environ. Plan. A 31, 2207–2222.

Lappalainen R., Kearney J., Gibney M., 1998. A pan-EU survey of consumer attitudes to food, nutrition and health: an overview. Food Qual. Prefer. 9, 467–478.

Melenberg B., Van Soest A., 1996. Parametric and semi-parametric modelling of vacation expenditures. J. Appl. Econom. 11(1), 59–76.

Ministry of Agriculture, 1999. Evaluation of the investment programs on rural tourism and related activities. Ministry of Agriculture, Athens, (in Greek).

Ministry of Agriculture, 2001. Final evaluation of the LEADER II initiative in Greece. Ministry of Agriculture, Athens, (in Greek).

Ministry of Agriculture, 2004. Online information on rural tourism and related activities, Investment Plans for the period 2000–2006, (in Greek). Available at http://www.minagric.gr

Mizerski R., 1982. An attribution explanation of the disproportionate influence of unfavorable information. J. Consum. Res. 9, 123–140.

Mojduszka, E. M., Caswell, J. A., 2000. A test of nutritional quality signaling in food markets prior to implementation of mandatory labeling. Am. J. Agric. Econ. 82(2), 298–309.

Nelson, J. A., 1991. Quality variation and quantity aggregation in consumer demand for food. Am. J. Agric. Econ. 73(4), 1204–1212.

Nelson P., 1970. Information and consumer behavior. J. Polit. Econ. 78(2, 311–329.

Nelson P., 1974. Advertising as information. J. Polit. Econ. 81, 729–754.

Nygard B., Storstad O., 1998. Deglobalisation of food markets? Consumer perceptions of safe food: the case of Norway. Sociol. Ruralis 38, 35–53.

O'Neil M., Black M., 1996. Current quality issues in the Northen Ireland tourism sector. Total Qual. Magazine. 8, 15–19.

Prais S., Houthakker H., 1955. The analysis of family budgets. Cambridge University Press, Cambridge, UK, 372 pp.

Quan S., Wand N., 2004. Towards a structural model of the tourist experience: an illustration from food experiences in tourism. Tour. Manage. 25, 297–305.

Ray C., 1998. Culture, intellectual property and territorial rural development. Sociol. Ruralis 38, 1–19.

Roberts L., Hall D., 2001. Rural Tourism and Recreation: Principles to Practice. CABI Publishing, Oxon, UK, 231 pp.

Ryan C. (Ed.). 2002. The Tourist Experience. Continuum, London, UK, 233 pp.

Ryan C., 2003. Recreational Tourism: Demand and Impacts. Channel View Publications, Clevedon, 358 pp.

Saarinen J., 2003. The regional economics of tourism in Northern Finland: the socio-economic implications of recent tourism development and future possibilities for regional development. Scand. J. Hosp. Tour. 3(2), 91–113.

Shapiro C., 1982. Consumer information, product quality and seller reputation. Bell J. Econ. 13, 20–35.

Shapiro C., 1983. Premiums for high quality products as rents to reputation. Q. J. Econ. 98, 659–680.

Skuras D., Dimara E., 2004. Regional image and the consumption of regionally denominated products. Urban Stud. 41, 801–815.

Syriopoulos T., Sinclair T., 1993. An econometric study of tourism demand: the AIDS model of US and European tourism in Mediterranean countries. Appl. Econ. 9(3, 1541–1552.

Telfer, D. J., 2002. Tourism and Regional Development Issues. In: Shapley, R., Telfer, D. J., (Eds.) Tourism and Development: Concepts and Issues. Channel View Publications, Clevedon, pp. 112–148.

Vaughan, D. R., Farr H., Slee, R. W., 2000. Estimating and interpreting the local economic benefits of visitor spending: an explanation. Leisure Stud. 19, 95–118.

Wanhill S., 1997. Peripheral area tourism: a European perspective. Prog. Tour. Hosp. Res. 3, 47–70.

World Tourism Organization, 2001. Sustainable development of ecotourism: a compilation of good practices. World Tourism Organization, Madrid, 261 pp.