

Rural Tourism and Visitors' Expenditures for Local Food Products

DIMITRIS SKURAS*, EFTHALIA DIMARA* and ANASTASIA PETROU†

*Department of Economics, University of Patras, University Campus — Rio, PO Box 1391, Patras GR-26504, Greece.

Emails: skuras@econ.upatras.gr and dimara@econ.upatras.gr

†Department of Economics, University of Patras, University Campus — Rio 26500, Patras GR-26500, Greece.

Email: apetrou@upatras.gr

(Received March 2005; in revised form August 2005)

SKURAS D., DIMARA E. and PETROU A (2006) Rural tourism and visitors' expenditures for local food products, *Regional Studies* **40**, 769–779. European rural development policy has supported the production of local and regionally denominated food as a means to differentiate agricultural production, and rural tourism as a means to diversify rural employment. The aim of the present work is to address tourists' decision to buy local food products while visiting lagging rural areas and the amount of money spent over these products. The findings should be of particular interest to practitioners of rural development as they point out to possible market segmentation and communication potentials, and reflect on differences between accessible and less accessible rural areas.

Rural tourism Local food Rural development Visitor expenditures

SKURAS D., DIMARA E. et PETROU A (2006) Le tourisme rural et les dépenses des visiteurs pour les produits alimentaires du pays, *Regional Studies* **40**, 769–779. La politique européenne en faveur du développement rural a favorisé les produits alimentaires d'origine contrôlée comme moyen de différencier la production, et le tourisme rural comme moyen de diversifier l'emploi rural. Cet article cherche à aborder la décision des touristes d'acheter les produits alimentaires du pays au moment de leur visite aux zones rurales en perte de vitesse et le montant d'argent dépensé pour ces produits. Les conclusions tirées devraient être d'un intérêt particulier pour les spécialistes en développement rural parce qu'elles indiquent un potentiel éventuel quant à la segmentation du marché et à la communication, et reflètent des différences entre les zones rurales accessibles et moins accessibles.

Tourisme rural Produits alimentaires du pays Développement rural Dépenses des visiteurs

SKURAS D., DIMARA E. und PETROU A (2006) Tourismus auf dem Lande und Ausgaben der Feriengäste für am Orte erzeugte Nahrungsmittel, *Regional Studies* **40**, 769–779. Die Europapolitik für ländliche Entwicklung hat die Erzeugung von als örtlich und regional klassifizierten Nahrungsmitteln als Mittel der Unterscheidung zwischen landwirtschaftlicher Produktion und den Tourismus auf dem Lande als Mittel zur Diversifikation der Erwerbstätigkeit auf dem Lande unterstützt. Mit der vorliegenden Arbeit soll untersucht werden, unter welchen Umständen Touristen in wirtschaftlich unterentwickelten ländlichen Gebieten vor Ort erzeugte Nahrungsmittel kaufen und wie viel Geld sie für solche Erzeugnisse ausgeben. Die Befunde dieser Arbeit sollten besonders diejenigen interessieren, die in der Entwicklung ländlicher Gebiete tätig sind, da sie auf etwaige Segmentierung des Marktes und Ausbau der Verbindungen hinweisen, und Überlegungen bezüglich Unterschieden zwischen leicht und weniger leicht zugänglichen ländlichen Gebieten anstellen.

Tourismus auf dem Lande Örtlich erzeugte Nahrungsmittel Ländliche Entwicklung Ausgaben der Feriengäste

SKURAS D., DIMARA E. y PETROU A (2006) Turismo rural y gastos de los visitantes en alimentos locales, *Regional Studies* **40**, 769–779. La política europea de desarrollo rural ha respaldado la producción de alimentos locales y regionales como método para diferenciar la producción agrícola y el turismo rural, y para diversificar el empleo rural. El objetivo del presente trabajo es considerar la decisión de los turistas de comprar productos alimentarios locales cuando visitan zonas rurales retrasadas y la cantidad de dinero que se gastan en estos productos. Los resultados de este trabajo deberían ser especialmente interesantes para los expertos en el desarrollo rural puesto que señalan la potencial división del mercado y la posible comunicación y reflejan las diferencias entre zonas rurales accesibles y menos accesibles.

Turismo rural Alimentos locales Desarrollo rural Gastos de visitantes

JEL classifications: R11, R22, R58

INTRODUCTION

Efforts to diversify the rural economy have a long history in European rural development policy since the MacSharry reform in 1992, the Cork Conference in 1996, the CARPE document (COMMISSION OF THE EUROPEAN COMMUNITIES, 1997), the Agenda 2000 and, more recently, in the Mid-Term-Review (MTR) of the CAP (COMMISSION OF THE EUROPEAN COMMUNITIES, 2003a) and the Salzburg Conference in 2003 (COMMISSION OF THE EUROPEAN COMMUNITIES, 2003b). The development of rural tourism is regarded as a promising diversification strategy especially for lagging and mountainous areas of the European Union (EU) (BRIEDENHANN and WICKENS, 2004; FLEISCHER and FELSENSTEIN, 2000; HEGARTY and PRZEBORSKA, 2005). As a result, over 1994–99, the EU Structural Funds contributed €7.3 billion to tourism projects (ROBERTS and HALL, 2001). In the 2000–06 period Community rural development financing from the European Agriculture Guarantee and Guidance Fund (EAGGF) will be of the order of around €50 billion. Among the 22 measures eligible for support by EAGGF, there is one which is directly related to the development of tourism activities and entitled ‘encouragement for tourist and craft industries’. Rural development policy’s support to rural tourism is far wider because many of the other 21 rural development measures also contribute, directly or indirectly, to the development of tourism, notably by helping preserve and improve the natural environment in rural areas. Furthermore, 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 through its three sequential phases (LEADER I, LEADER II and LEADER+).

On the other hand, demand for rural tourism services also increases. A Eurobarometer survey on ‘Europeans on Holiday (1997–1998)’ showed that increasingly 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 (EUROPEAN COMMISSION 1998). Since 1998, when this Eurobarometer survey took place, incidences with major impacts on tourism may have changed these figures. These incidences include, first, the outbreak of terrorism actions in major US cities and European capitals and, second, the outbreak of major diseases in rural areas. Individuals planning their holidays are less likely to choose a destination with a higher threat of terrorist attacks (DRAKOS and

KUTAN, 2003; FREY *et al.*, 2004). Rural areas are less likely to become the target of terrorist actions and, thus, the demand for rural tourism should have increased. On the other hand, of course, rural tourism that depends on foreign tourists, as it is the case, for example, in areas of Scotland, Ireland or Italy, is more likely to be negatively affected (EUGENIO-MARTIN *et al.*, 2005). In addition, studies indicate that incidences like the foot and mouth disease crisis in the UK affected French tourist arrivals in Scotland (EUGENIO-MARTIN *et al.*, 2005).

Rural tourism could function as a means to generate multiplying effects in terms of local and regional development for fragile economies (EUROPEAN COMMISSION 1999). 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 (ARCHER, 1982; VAUGHAN *et al.*, 2000). The food and farm sectors are traditional rural sector most likely to be affected by rural tourism developments (FLEISCHER and TCHETCHIK, 2005). Understanding the tourists’ purchasing behaviour towards food products that are traditional and typical of a certain region can provide useful insights on the multiple interactions and the multi-component character of rural tourism and the rural tourism product. However, all these potential benefits depend upon tourist custom and yet our knowledge of visitors’ spending behaviour is rather limited.

Thus, the aim of the present study is to address one facet of the interface between local tourism development and territorially distinct food production. This is achieved by analysing the tourists’ decision to purchase local food products and the amount of money they spend on them. For this purpose, two mountainous regions, which are popular rural tourism destinations in Greece, have been chosen. What the paper seeks to analyse in particular are the factors that determine tourists’ purchasing behaviour towards local food products. This research may provide local and regional development practitioners with important evidence concerning the synergies achieved by local food production and rural tourism development, two of the most significant and dominant strategies in contemporary European rural restructuring processes.

THEORETICAL CONTEXT

Underlying concepts

Empirical economic studies of visitors’ spending behaviour in rural areas are very limited (DOWNWARD and LUMSDON, 2000, 2003; FELSENSTEIN and FLEISCHER, 2003; VAUGHAN *et al.*, 2000) and do not address the issue under consideration, i.e. the factors influencing visitors’ spending behaviour towards local food products. However, useful evidence of consumer purchasing and spending behaviour towards local food products, not in a rural tourism context, can provide

the theoretical context of this study. The re-emergence of quality local food production in Europe and policy efforts to support and protect the regional denomination of products and redefine food quality in terms of place of origin is a well-documented fact (PARROT *et al.*, 2002). Research findings provide great support to the notion that consumers recognize and value regionality in food products (DIMARA and SKURAS, 2003). The decision to consume denominated or regionally associated products is influenced by consumers' socio-demographic characteristics such as age, sex and education, whether consumers originate from a rural area (DIMARA and SKURAS, 2003; VAN DER LANS *et al.*, 2001) and their family income (SKURAS and DIMARA, 2004). The amount and source of information consumers have about local food products positively influences their appreciation of the food's regional certification and association with a specific place (DIMARA and SKURAS, 2003).

Consumer-constructed regional images greatly affects spending behaviour for denominated food products. If consumers associate an area with a tradition and culture in the production of the good, if they consider that the area's physical environment attaches certain qualities to the product or if they have own experience of the area (and of course of the product) their spending behaviour is highly influenced (SKURAS and DIMARA, 2004). KUZNESOF *et al.* (1997) relate the decision to purchase regionally denominated food not only to a range of socio-economic characteristics of the consumer but also to the consumption environment and the context within which such an experience takes place. For this work this is an important result because the tourism experience provides a very good context for purchasing regional food. In their recent work, VAN ITTERSUM *et al.* (2003) propose a theoretical model that relates the consumers' image of a product to the product's place of origin and examine the way in which preferences relate to this origin. An important aspect of the market for regional products is the successful identification of a product on the part of a consumer with its place of origin.

Exploring the ways in which consumers perceive and value regional food, TREGGAR *et al.* (1998) draw upon results of exploratory qualitative research to show that consumers' understanding of regional food tends to be a complex dynamic of interrelated concepts. Their findings support the notion that 'consumers make ready and positive associations between places and foods, and moreover, they value such associations' (TREGGAR *et al.*, 1998, p. 390). According to their results, ideas concerning regional foods are determined by both the physical environmental factors and the socio-cultural practices existing within a geographic area, combined to associate a regional food with tradition or heritage. Furthermore, an implicit factor of consumers' attitudes towards the regionality of food products is the perceived authenticity of these products which is enhanced by the consumers' personal

experience of the products. This feature of regional food products appears to enhance aspects of territorial identity and cultural distinctiveness, raising their overall attractiveness and appeal to consumers. More importantly, perceived authenticity could be communicated to consumers, besides a number of product-related factors, by what TREGGAR *et al.* (1998) call situational factors, that is the place and context of the purchase or consumption of a regional food. All these different facets of the strong linkages between food and places as appreciated by consumers give evidence to the existence of a value-added process generated by the consumption of local/regional food products. Actually, what consumers encounter when purchasing regional food, typical of a certain region, is a quality-differentiated food product. Thus, suggestions of the place of origin create a unique quality identity for the food product.

Moreover, different appreciations of territorial identity for regional food products raise the question of different aspects of consumer behaviour towards purchasing food products (VAN DER LANS *et al.*, 2001; SKURAS and VAKROU, 2002). However, the potential for differentiating quality food products on a regional basis has been the focus of consumer decision-making studies in general. The present study focuses on consumer decision-making towards purchasing local/regional food products as part of the rural tourism experience. Although, the place and context of purchase and consumption of regional food products have been acknowledged as critical aspects of the consumer decision-making, and reference is made on tourist behaviour in specific, little empirical evidence exists from such explorations in academic literature (TREGGAR *et al.*, 1998; TORRES, 2002, 2003; BESIÈRE, 1998).

To summarize the discussion so far, the consumers' decision to purchase local food and their spending behaviour depends on five sets of factors, namely economic (income), demographic (age, gender, family size), social (education, place of origin), prior experience and knowledge of the product, and, finally, the consumers' image of the region as a place suitable for quality local food production. These findings formulate our expectations of the factors influencing the decision to purchase local food and if local food is purchased, the level of spending on local food. These findings also assist us to search for appropriate proxies reflecting the factors influencing the consumers' decisions.

A model of visitors' expenditure behaviour

The present study adopts a model of visitor expenditure similar to that proposed by DIMARA and SKURAS (1998). It is assumed that an individual derives utility from purchasing local products and from money income. The deterministic utility from purchasing

local products during his/her visit to an area is:

$$u_1 \equiv u(1, \gamma; s) \quad (1)$$

where income is denoted by γ and the observable attributes of the individual that might affect preferences over purchasing local products are denoted by the vector s . The utility if no local products are purchased is:

$$u_0 \equiv u(0, \gamma; s) \quad (2)$$

The choice is expressed as:

$$z_i^* = \gamma' w_i + e_{1i} \quad (3)$$

where w_i is a vector of the individual household head characteristics including income (γ) and a vector of relevant shift variables (s), while e_{1i} is an error component capturing variation in tastes among individuals and the idea of unobserved variables in econometric models. Define:

$$z_i(\gamma, s, e_{1i}) = \begin{cases} 1 & \text{if } z_i^* > 0, \text{ i.e. if the } i\text{-th} \\ & \text{household head purchases} \\ & \text{local products} \\ 0 & \text{otherwise} \end{cases} \quad (4)$$

An expenditure equation is estimated for local products for each household head. The general model of the expenditure function is:

$$c_i = g_i(x^h, p) \quad (5)$$

where x is a vector of household characteristics including income, p is the vector of prices assumed to be the same across the sample and suppressed as an argument in the function, and superscripts denote individual households. A suitable linearization of equation (5) for individuals who purchase local products would result in:

$$c_i \beta' x_i + e_{2i}, \text{ observed only if } z_i^* > 0 \quad (6)$$

Functional forms of expenditure equations are ad-hoc generalizations and are usually chosen for convenience. A widely used functional form is the double logarithmic or constant elasticity specification of equation (6). Assuming that the choice mechanism reported in equations (3) and (4) may be modelled through a probit model where:

$$\begin{aligned} \text{Prob}(z_i = 1) &= \Phi(\gamma' w_i) \\ \text{Prob}(z_i = 0) &= 1 - \Phi(\gamma' w_i) \end{aligned}$$

and the error terms of equations (4) and (6) have a bivariate distribution with zero means and correlation ρ as:

$$(e_{1i}, e_{2i}) \sim \text{bivariate normal } [0, 0, 1, \sigma_{e_2}, \rho]$$

then:

$$E[c_i | z_i = 1] = \beta' x + \rho \sigma_{e_2} \lambda(\gamma' w) \quad (7)$$

where $\lambda(\gamma' w) = \phi(\gamma' w) / \Phi(\gamma' w)$. Equation (7) may be estimated by the Heckit estimator.

CASE STUDIES AND DATA

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 EU Initiatives, including LEADER and many Regional Operational Programs. As mentioned before, the basic aim of this research is to study the purchasing behaviour of visitors to such areas and their spending habits on local food products. However, information regarding this behaviour and habits cannot be obtained from official statistics and, to the best of our knowledge, there is no published research concerning this specific issue. Consequently, it was decided that our own data-collection procedures should be employed to acquire appropriate data for the research aims. Data collection was facilitated in the framework of an EU-funded research programme, and 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 two areas are typical of the rural tourism developments have taken place in accessible and less accessible mountainous areas of Greece and thus it was assumed that results may be generalized to hold true for other mountainous areas in Greece.

The region of Kalavryta is a mountainous area, but it is situated quite close to the urban centre of Patras and fairly near Athens, the capital of Greece. The area of Kalavryta has a population of around 25 000 people and its GDP per head in 2001 was estimated to be around €6000, which is almost two-thirds and one-half, respectively, of the corresponding regional and national figures. 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 recent historical events.

The Greek National Tourism Organization estimates the number of arrivals at around 15 000–20 000 tourists per year, while the number of nights spent by all tourists accounts for 25 000–30 000 per year. The overwhelming majority of tourists (over 90%) is Greek nationals and is almost evenly distributed in the year with operation of the skiing centre to attract

slightly more visitors during the winter. Tourism development in the area is concentrated in the town of Kalavryta, which is located very close to the skiing centre.

The area is well known for its quality food-processing businesses with dairy food and feta cheese the most prominent products. It is important to note that the ten cheese-making firms in the area of Kalavryta collect an average of 150 tonnes of milk per day, produce an average of 20 000 tonnes of various kinds of cheeses per year (almost 15% of the country's production in feta cheese) and employ an average of 100 full-time workers. The area is also well known for the production of traditional Greek pasta products and sweets based on locally produced milk or preserves. Kalavryta is a convenient winter resort for one-day visitors from 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, being 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 centres quite forbidding, despite the attraction of a skiing facility. The environment is extremely mountainous with more than 55% of the prefecture's land being over 1000 m of altitude. Acknowledgeably, tourism has brought prosperity to the area, increasing population that was around 32 000 people in 2001 and rising GDP per head that in 2001 was estimated to be around €13 000, which is slightly above the corresponding national average.

The tourist attractions are mostly scattered over an area of more than 80 villages in the prefecture. The Greek National Tourism Organization estimates the number of nights spent by all tourists in the whole prefecture to be around 110 000–125 000 per year. The number of arrivals and nights spent in the wider area of Karpenisi, the major town of Evrytania, is estimated to be around 12 000 and 32 000 correspondingly per year. Over 90% of tourists are Greek nationals and are evenly distributed over the year. Winter tourism is less attracted by the skiing centre than in the area of Kalavryta, while religious, cultural and historical tourism is well developed. Since the early 1990s, the area developed a wide range of alternative winter sports facilities including canoeing, mountain climbing, horse riding and others.

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. The area is famous for its meat products, especially the various kinds of sausage and local spirits, including a spirit distilled from a kind of mulberry tree and one distilled from residues of grapes. Other less-known local products include herbs, local confectionaries, preserves and sweets.

Data-collection procedures

In the framework of an EU-funded research project, three different surveys were conducted in each case study area. The first survey aimed to collect data from businesses in the hospitality industry as well as businesses in the manufacturing sector producing local food and artisan products. The second survey aimed to collect data from local, regional and national institutions involved in rural development and/or the development of rural tourism projects. The third survey aimed to collect data from visitors. Data from the first and third surveys are utilized in this work.

Data were obtained from face-to-face interviews based on structured questionnaires and conducted by a research team, supervised and directed by the present authors. The sampling frame consisted of visitors in the two case study areas for the period covering the spring of 2002 up to the spring of 2003. The target sample size 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 that had finished or were just finishing their holidays in the area and were about to leave. The visitors were approached and sampled randomly and the willingness to participate to the survey was generally high. It was estimated that about 10% of those approached refused to participate and, despite the fact that there was no available information concerning the profile of those refused to participate, the rate is too low to have caused any serious bias to the results. Each visitor was approached by trained personnel and was informed about the aims and objectives of the survey, which was carried out under the auspices of the municipalities of the two areas and thus had a more 'formal' and 'serious' character. The visitor was informed that the survey aimed to collect information about his/her own tourism experience in general and thus people who did not buy any local products had no reason to be reluctant to participate.

The structured questionnaire recorded a wide range of information, such as expenditures, attitudes and points of view about tourism, sources of information obtained by the visitors before their actual visit with regard to their destination, and personal and family characteristics of the head of the household. The interviews also included a checklist of expenditures that recorded all possible individual items. Local food purchasing included products purchased for consumption at home but did not include meals in restaurants, coffee shops and hotels because respondents were not able to identify local food and ascribe part of the price for the whole meal to local food products. The authors attempted, however, to capture this potentially large outlet for local food products through a survey of

local businesses. If the respondent had not recorded any expenditure on local products, a series of questions attempted to screen whether the respondent usually purchased local products, but this had not occurred in this particular trip, or if the respondent did not buy local products in general. Thus, the work was able to disentangle infrequent consumers from non-consumers of local food products. Attitudes and views related to the choices or spending habits were also collected. The consumers' awareness of the natural environment of the area, its cultural heritage and historical richness was used to evaluate their appreciation of the local resource or craftsmanship capability in producing quality foods. Thus, each visitor was asked to state important natural resources of the area or distinct features of the physical environment as well as elements of the area's cultural heritage. These questions allowed the interviewer to classify respondents as aware or unaware of the area's environment and cultural heritage. Finally, for those visitors who had purchased local food products, their impression of local food products as particular signs of a lifestyle or of being authentic and

wholesome was also identified by direct questions. Each interview took an average of 30–45 minutes depending on whether certain areas of the questionnaire were skipped.

From the collected data, an economic proxy was estimated for the quality of the tourism experience. If one considers 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 basic expenditures, i.e. expenditure for travel to and from the area, expenditure for hotel accommodation and food, and expenditure for participating in various recreation activities, may be used as a proxy to the total sum of expenditures for this heterogeneous commodity. Thus, a unit value for this heterogeneous commodity may be approached by dividing the total sum of expenditures by the physical quantity consumed, i.e. the number of adult-equivalent days of tourism experience. The unit value may be used as an indirect measure of quality because the larger the proportion of high-priced days in the composite commodity called 'rural tourism experience', the higher the unit

Table 1. Definition of variables

Variable	Definition
<i>Dependent variables</i>	
CHOICE	Dummy variable: 1 if the respondent purchases local food products
FOODEXPEND	Expenditures for local food products in euros, if CHOICE = 1
LFOODEXPEND*	Logarithm of FOODEXPEND
<i>Socio-economic</i>	
INCOME	Family income after tax in '000 euros
INCOME2	Family income after tax in '000 euros squared
LINCOME*	Logarithm of INCOME
LINCOME2*	Logarithm of INCOME2
GENDER	Dummy variable: 0 female; 1 male
EDUCATION	Dummy variable: 1 if the respondent has completed more than basic education; 0 otherwise
AGE	Respondent's age (years)
MARITAL	Dummy variable: 0 for a single-person household; 1 otherwise
ORIGIN	Dummy variable: 1 if respondent has his origin from the area; 0 otherwise
AREA	Dummy variable: 0 visitor of Evrytania; 1 visitor of Kalavryta
INFORMATION	Number of sources of information addressed before the trip and concerned with the visit
LOCALPROD	Dummy variable: 1 if the respondent is aware of at least one well known local food product; 0 otherwise
<i>Attitudes-perceptions</i>	
ENVIRON	Dummy variable: 1 if the respondent is aware of the area's environmental resources; 0 otherwise
HERITAGE	Dummy variable: 1 if the respondent is aware of the area's cultural heritage and history; 0 otherwise
QUALITY	Total sum of tourism expenditures divided by the number of adult-equivalent days of tourism experience considered as the physical quantity consumed
LIFESTYLE*	Dummy variable: 1 if the respondent perceives local food products as signs of a particular lifestyle; 0 otherwise
WHOLESOME*	Dummy variable: 1 if the respondent perceives local food products as authentic and wholesome; 0 otherwise
SECONDPURCH*	Dummy variable: 1 if the respondent has purchased the same products again; 0 otherwise
<i>Expenditure for:</i>	
TRAVEL*	Total family expenditure for travel
HOTEL*	Total family expenditure for hotel
RECREATION*	Total family expenditure for recreation activities
LTRAVEL	Logarithm of TRAVEL
LHOTEL	Logarithm of HOTEL
LRECREATION	Logarithm of RECREATION

Note: *Descriptive statistics provided in Table 2 are for the sub-sample of purchasers of local food products only.

Table 2. Descriptive statistics of variables

Variable	Local food consumers		Non-consumers of local food		All visitors	
	Mean	SD	Mean	SD	Mean	SD
<i>Socio-economic</i>						
INCOME	20.96	30.62	17.19	14.16	19.87	26.98
INCOME2	1374.42	10 523.77	494.70	1165.39	1121.35	8909.29
GENDER	0.56	0.50	0.60	0.49	0.57	0.49
EDUCATION	0.59	0.49	0.50	0.50	0.56	0.50
AGE	37.08	10.55	36.43	12.63	36.89	11.18
MARITAL	0.78	0.42	0.59	0.49	0.73	0.45
ORIGIN	0.40	0.49	0.46	0.50	0.41	0.49
AREA	0.54	0.50	0.43	0.50	0.51	0.50
INFORMATION	2.34	1.86	1.82	1.84	2.19	1.87
LOCALPROD	0.86	0.35	0.60	0.49	0.78	0.41
<i>Attitudes-perceptions</i>						
ENVIRON	0.51	0.50	0.50	0.50	0.51	0.50
HERITAGE	0.58	0.49	0.37	0.49	0.52	0.50
QUALITY	53.84	46.37	38.00	38.62	49.29	44.82
LIFESTYLE	0.61	0.49	–	–	–	–
WHOLESOME	0.64	0.48	–	–	–	–
SECONDPURCH	0.39	0.49	–	–	–	–
<i>Expenditure for</i>						
LOCALFOOD	53.07	50.66	–	–	–	–
TRAVEL	34.65	49.96	30.91	39.77	33.58	47.24
HOTEL	230.47	275.21	161.96	214.08	210.76	260.76
RECREATION	72.84	113.14	52.66	87.72	67.03	106.76
Sample size (N)	361		142		503	

value (DONG *et al.*, 1998). However, note that the use of the unit value as a proxy of quality is controversial at least for first-time visitors who were also surveyed in this field study. This is because the unit value for first-time visitors is largely based on expectations when booking the trip and not on the actual experience. The present work considers the unit value variable as exogenous as there is no strong evidence that it is correlated to any other relevant economic variable such as family income, or other demographic variables.

The definitions of all variables used in the analyses are presented in Table 1, while descriptive statistics of all variables for consumers, non-consumers and all visitors separately are presented in Table 2.

RESULTS

Decision to buy local food products

Two criteria have guided the identification of the best choice model described in equations (3) and (4). First, we searched for a meaningful and informed, from standard microeconomic theory model, among the many variables, transformations of variables or interactions among variables coming directly from the collected data. Second, we looked for the model with the best econometric properties among alternative models. This implies that variables with no statistically significant results have been included in our final model,

because this is also an important finding. Separate tests examining the null hypothesis that individual coefficients are zero, and a joint test of the null hypothesis that all the parameters associated with the explanatory variables are equal to zero have been estimated. A goodness-of-fit measure usually reported as McFadden's pseudo- R^2 measure, or rho² (MADDALA, 1983), is also computed. Maximum likelihood estimated coefficients based on equation (4), their corresponding t -ratios, the χ^2 -test, the ρ^2 goodness of fit measure and the percentage of correctly predicted cases are shown in Table 3. The χ^2 -test is highly significant with a score of 100 and the corresponding goodness-of-fit measure of 0.17 indicates a satisfactory fit. The model correctly predicts 76.5% (385 out of 503) of the outcomes. Specification test analysis involves a test for homoscedasticity (GREENE, 1997, p. 890), and a test for the omission of certain demographic variables of the household, using predicted values of the dependent variable (MADDALA, 1995).

The sign of the estimated coefficients shows the direction of the change in the probability that a visitor will choose to buy local food products. The marginal effects, also reported in Table 3, show how much the probability of this choice will change if the independent (explanatory) variable changes by a marginal amount from its sample mean. The marginal effects for the dummy variables are estimated as a difference in the probability of choosing to purchase local food products

between the variable's two values, 0 and 1 (GREENE, 1997). From all the socio-economic variables, only the respondent's marital status and his level of education are statistically significant factors influencing the decision to purchase local food products. Respondents that have obtained information about the area before their visit (informed visitors) have a significantly higher probability of purchasing local food products, and this is also true for respondents who are aware of the importance of local food products. Visitors that are aware of the natural environment and the cultural heritage of the area do not indicate any statistically significant differences in the probability of purchasing local food products from visitors who do not possess such awareness. Finally, visitors that enjoy higher quality of tourism experience are more likely to buy local food products.

Visitors' expenditure on local food products

The variables in the double logarithmic expenditure equation are those usually employed in travel expenditure models (DIMARA and SKURAS, 1998) and in cross-section studies, modelling demographic effects on expenditure (DEATON, 1986). Thus, we have attempted to fit the best model including various transformations of the income variable, and expenditures on travel, hotels and recreation activities. Table 4 presents the estimated coefficients and corrected asymptotic t -ratios for the double logarithmic expenditure equation.

The usual diagnostic tests for specification error do not reveal any significant problems (Jarque-Bera for normality, Ramsey's RESET and tests for omitted

variables). Tests for the omission of important demographic variables, in particular, including family size, age and education are not statistically significant. Based on the asymptotic t -statistics of the coefficient for the $\hat{\lambda}$ variable, we reject the null hypothesis of no selection bias. It is important to note that the elasticities (coefficients) for family income and family income squared are not statistically significant, a finding that is in accordance with the marginal effects of the income variables on the probability of choosing to purchase local food products. The elasticities for expenditures on travel, hotel and recreation are all statistically significant, but very low in magnitude.

The coefficients for the variables capturing attitudes of lifestyle and authentic food are statistically significant, indicating that expenditures on local food products are significantly higher if the visitor views local food products as indicative of a particular lifestyle, or as being authentic and wholesome. Finally, visitors that are already familiar with the specific local food products tend to spend significantly more than visitors who buy the products for the first time. Almost the same results are derived if a share equation is estimated with the expenditures on local food products being a share of total income.

If one assumes that the sample of visitors is representative of the visitors in the two case study areas and an average of 70% of visitors purchase an average of €50 of local food products then, making adjustments for family and single visitors and taking into account the number of visitors in the two areas we can estimate an indicative, and by no means exact, measure of direct spending for local food products. For the area of Kalavryta a total direct spending for local food around €500 000–650 000 per year is estimated, which, without taking into account multiplier effects is

Table 3. Estimated coefficients and marginal effects for the choice model

Variable	Coefficient estimate	Asymptotic t -ratio	Marginal effect	Asymptotic t -ratio
Constant	-1.035	-2.878	-	-
INCOME	-0.011	-0.940	-0.000	-0.964
INCOME2	0.000	1.076	0.000	1.114
GENDER	-0.077	-0.567	-0.023	-0.566
EDUCATION	0.244	1.735	0.075	1.730
AGE	-0.004	-0.593	-0.001	-0.594
MARITAL	0.635	3.753	0.194	3.795
ORIGIN	-0.250	-1.560	-0.076	-1.565
AREA	0.234	1.436	0.072	1.428
INFORMATION	0.128	3.392	0.039	3.376
LOCALPROD	0.999	6.151	0.310	6.048
ENVIRON	0.005	0.032	0.001	0.032
HERITAGE	-0.132	-0.611	-0.040	-0.611
QUALITY	0.004	2.211	0.001	2.212

Summary statistics

Number of observations = 503

$\log L_{\Omega} = -249.32$

$\log L_{\omega} = -299.34$

$-2[\log L_{\omega} - \log L_{\Omega}] = 100.04$

$\rho^2 = 0.17$

Correctly predicted total observations = 76.5%

Table 4. Spending behaviour for consumers of local food products

Variable	Coefficient estimate	Asymptotic t -ratio
Constant	1.900	0.490
LINCOME	0.203	0.795
LINCOME2	-0.014	-0.352
LTRAVEL	0.071	3.940
LHOTEL	0.054	2.519
LRECREATION	0.053	2.669
LIFESTYLE	0.256	3.914
WHOLESOME	0.181	2.679
SECONDPURCH	0.288	4.257
$\hat{\lambda}$	0.392	2.141

Summary statistics

Number of observations = 361

$\log L_{\Omega} = -300.54$

$\log L_{\omega} = -355.03$

$\bar{R}_2 = 0.219$

$F_{[9,351]} = 12.28$

$\rho = 0.625$

equivalent to the GDP of 83 to 108 local persons. In the whole prefecture of Evrytania the respective total direct spending for local food is estimated around €1 500 000–1 750 000 per year equivalent to the GDP of 115–135 local persons.

As it was mentioned above, a possibly large outlet for local food products, missing from the aforementioned estimation of direct spending, are meals served in restaurants, bed-and-breakfasts, coffee shops, etc. In the survey of businesses in the two case study areas we estimated, directly by asking the entrepreneurs, the value of local food inputs as a percentage of their total material inputs (Table 5).

Local food products make up for 50–68% of total material inputs for restaurants and hotels and these shares are not greatly differentiated among the two case study areas. One should bear in mind that, despite the apparently high share of local food in the material inputs, their value is not high for hotels because material inputs account for less than 10% of the total value of sales. For restaurants and coffee shops material inputs account for 25–40% of the total value of sales and thus the value of local food is significant.

The share of local food in the total material inputs used by manufacturers of local food in Evrytania is significantly higher, more than double, than the respective figure for manufacturers in Kalavryta. This is due to the nature of the local food products. Dairy products manufacturers in Kalavryta use local food products to a level higher than 80% of their value of material inputs, but all other food manufacturers in the area use low levels of local food inputs and, as a result, the average for all businesses is low. In Evrytania, the respective average is high because all food manufacturers make an intense use of local food products, especially those in the sausage making and alcoholic spirit industry. Taking into account the reluctance of small business entrepreneurs to state exact financial figures concerning their enterprises and our inability to cross-examine the validity of collected financial data, we did not record exact financial figures. Thus, we are not able to provide area specific figures for the share of material inputs in a firm's total sales. However, the interested reader may utilize broad national figures for the share of material inputs in such businesses ranging from a low 10% for hotels and

bed-and-breakfasts, to a high of 25–40% for restaurants and coffee shops. Taking into account such figures and the data presented in Table 5, an indicative spending on local food through meals in hotels, restaurants and coffee shops may be approximated.

DISCUSSION AND POLICY IMPLICATIONS

Our empirical evidence, as presented above, points to three important conclusions. First, purchasing local food is a significant part of the total rural tourism expenditures. Second, visitors who choose to purchase local food products have distinct characteristics that differentiate them from visitors who do not usually consume local food products. Third, the level of expenditure for those visitors who buy such products depends highly on their views concerning local food products and on whether they are already familiar with the products. These conclusions may be useful to practitioners in rural tourism.

Almost two-thirds of visitors buy local food and their expenditures for products purchased for home cooking are higher than those for travel and close to those for recreation (including meals in restaurants and coffee shops and admission fees to recreational activities). Taking into account the proportion of visitors buying local food and the number of people visiting the areas, one can assume how important this contact is for the promotion of the local food in the national market. Results show that buying local food is related to how informed respondents were prior to visiting the area and to various socio-demographic characteristics. One may assume that there is a degree of market segmentation that can be utilized by effective promotion programmes. Well-educated and married consumers collecting a high level of information before their trip and purchasing tourism services of a high unit price should be targeted by promotion programmes. Thus, it is in the interest of local economies to promote and disseminate information concerning their services to neutral sources of information. Local authorities (rural development boards or tourist offices) often find it very hard to judge the effectiveness of their advertising budgets, yet none dare reduce spending for fear of losing trade. The source and type of information have differing impacts on consumers. It is argued that personal and neutral information are more influential than non-personal 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 increases visitors' prior information. Thus, spending on promotion has real benefits in terms of more spending

Table 5. Use of local food as a percentage of total material inputs by businesses

Type of business	Local food as a percentage of total material inputs for businesses in:			Sample size
	Kalavryta	Evrytania	All	
Hotels, bed-and-breakfasts	52	58	55	61
Restaurants, coffee shops	68	64	66	98
Local manufacturers	21	58	46	22

on local food. Moreover, such campaigns should emphasize the wholesome (authentic and traditional) character of the local food products and place them in a frame of a particular countryside lifestyle.

Furthermore, evidence shows that the level of spending increases for consumers who have already purchased the products in a previous trip or at home. This reinforces the argument that people get to know the local food and can search for it at their home place increasing the demand for the areas' local food products. Visitors in Kalavryta, the more accessible area producing the well known feta cheese, are more probable to buy local food products than visitors in Evrytania. On the other hand, food manufacturers in Evrytania, the less accessible area, use a higher proportion of local products among their material inputs. One may argue that these results are due to the areas' relative accessibility to major urban centres and to the nature of the locally produced food. Visitors in remote areas may be less inclined to buy local food because it is difficult to take the food back home on a long trip. On the same ground, small food manufacturers in remote areas may have, through time, specialized to products that reduce dependence from distant suppliers and, at the same time, be more inclined to develop local supplier networks. As concerns the nature of the product, well known products such as Kalavryta's dairy products have a higher market penetration and thus, the chance that the visitor has tasted or even heard of the product is higher. This in turn increases the probability that the visitor will buy local food products.

Multiplier effects of the various variables in the 'decision to buy' and 'expenditure' models may be

best portrayed if we consider the purchase of local food by tourists as a new, mainly exporting, economic activity or as an autonomous increase in the demand for the area's food products. The impact of such an activity on regional income depends on the absolute size of this activity's regional exports and its propensity to use locally produced inputs (for a formal presentation of this simple multiplier model, see MCCANN, 2001, p. 156). All factors that have a positive impact on the probability that a tourist will purchase local food products increase the size of exports and thus increase multiplier effects on regional income. Similarly, all factors that have a positive impact on the size of expenditures for local food products have a positive impact on exports and thus increase the multiplier effects on regional income. Accessibility seems to affect both the size of the exporting activity and the propensity of food producing firms to use locally produced inputs. In the more accessible area tourists have a higher probability to purchase food products and thus higher regional income multiplier effects. In the less accessible area this is partly offset by the higher propensity of the firms to use locally produced inputs. The higher propensity to use locally produced inputs is due to the firms' specialization in food production that depends on local suppliers networks.

Acknowledgements – The authors gratefully acknowledge the assistance received by two anonymous reviewers. This paper derives from a project entitled 'Supporting and Promoting Integrated Tourism in Europe's Lagging Rural Regions' funded by the European Commission under research Grant No. QLK5-CT-2000-01211.

REFERENCES

- ARCHER B. H. (1982) The value of multipliers and their policy implications, *Tourism Management* **3**, 236–241.
- BESSIERE J. (1998) Local development and heritage: traditional food and cuisine as tourist attractions in rural areas, *Sociologia Ruralis* **38**, 21–34.
- BRIEDENHANN J. and WICKENS E. (2004) Tourism routes as a tool for the economic development of rural areas – vibrant hope or impossible dream?, *Tourism Management* **25**, 71–79.
- CHANG H. and KINNUCAN H. (1991) Advertising, information, and product quality: the case of butter, *American Journal of Agricultural Economics* **73**, 1195–1203.
- COMMISSION OF THE EUROPEAN COMMUNITIES (1997) *Towards a Common Agricultural and Rural Policy for Europe*. European Economy, Reports and Studies No. 5. CEC, Brussels.
- COMMISSION OF THE EUROPEAN COMMUNITIES (2003a) *CAP Reform – A Long-term Perspective for Sustainable Agriculture*. European Commission, DG Agriculture (available at: <http://europa.eu.int/comm/agriculture/capreform/>).
- COMMISSION OF THE EUROPEAN COMMUNITIES (2003b) *Conclusions of Second European Conference on Rural Development in Salzburg*. European Commission, DG Agriculture (available at: http://europa.eu.int/comm/agriculture/events/salzburg/index_en.htm).
- DEATON A. (1986) Demand analysis, in GRILICHES Z. and INTRILIGATOR M. D. (Eds) *Handbook of Econometrics*, Vol. 3, pp. 1767–1839. Elsevier, Amsterdams.
- DIMARA E. and SKURAS D. (1998) Rationing preferences and spending behavior of visitors to a scarce recreational resource with limited carrying capacity, *Land Economics* **74**, 317–327.
- DIMARA E. and SKURAS D. (2003) Consumer evaluations of product certification, geographic association and traceability in Greece, *European Journal of Marketing* **37**, 690–705.
- DONG D., SHONKWILER J. and CAPPS O. (1998) Estimation of demand functions using cross-sectional household data: the problem revisited, *American Journal of Agricultural Economics* **80**, 466–473.
- DOWNWARD P. and LUMSDON L. (2000) The demand for day-visits: an analysis of visitor spending, *Tourism Economics* **6**, 251–261.
- DOWNWARD P. and LUMSDON L. (2003) Beyond the demand for day-visits: an analysis of visiting spending, *Tourism Economics* **9**, 67–76.

- DRAKOS K. and KUTAN A. (2003) Regional effects of terrorism on tourism: evidence from three Mediterranean Countries, *Journal of Conflict Resolution* **47**, 621–641.
- EUGENIO-MARTIN J., SINCLAIR T. and YEOMAN I. (2005) Quantifying the effects of tourism crises: an application to Scotland, *Journal of Travel and Tourism Marketing* **19**, 23–26.
- EUROPEAN COMMISSION (1998) *Facts and figures on the Europeans on Holidays 1997–1998, Executive Summary*. Enterprise Directorate General, Brussels.
- EUROPEAN COMMISSION (1999) *Towards Quality Rural Tourism: Integrated Quality Management (IQM) of Rural Tourism Destinations*. Enterprise Directorate-General, Tourist Unit, Brussels.
- FELSENSTEIN D. and FLEISCHER A. (2003) Local festivals and tourism promotion: the role of public assistance and visitor expenditure, *Journal of Travel Research* **41**, 385–392.
- FLEISCHER A. and FELSENSTEIN D. (2000) Support for rural tourism. Does it make a difference?, *Annals of Tourism Research* **27**, 1007–1024.
- FLEISCHER A. and TCHETCHIK A. (2005) Does rural tourism benefit from agriculture?, *Tourism Management* **26**, 493–501.
- FREY B., LUECHINGER S. and STUTZER A. (2004) *Calculating Tragedy: Assessing the Costs of Terrorism*. CESifo Working Paper No. 1341. Center for Economic Studies, Faculty of Economics, Ludwig-Maximilia University, Munich (available at: <http://www.CESifo.de>).
- GREENE W. (1997) *Econometric Analysis*. Prentice-Hall, Englewood Cliffs, NJ.
- HEGARTY C. and 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, *International Journal of Tourism Research* **7**, 63–77.
- KUZNESOF S., TREGGAR A. and MOXEY A. (1997) Regional foods: a consumer perspective, *British Food Journal* **99**, 199–206.
- MADDALA G. S. (1983) *Limited-dependent and Qualitative Variables in Econometrics*. Cambridge University Press, New York, NY.
- MADDALA G. S. (1995) Specification tests in limited dependent variable models, in MADDALA G. S., PHILLIPS P. C. B. and SRINIVASAN T. N. (Eds) *Advances in Econometrics and Quantitative Economics*, pp. 1–49. Blackwell, Cambridge, MA.
- MCCANN P. (2001) *Urban and Regional Economics*. Oxford University Press, Oxford.
- PARROT N., WILSON N. and MURDOCH J. (2002) Spatializing quality: regional protection and the alternative geography of food, *European Urban and Regional Studies* **9**, 241–262.
- ROBERTS L. and HALL D. (2001) *Rural Tourism and Recreation: Principles to Practice*. CABI Publ., Oxford.
- SKURAS D. and DIMARA E. (2004) Regional image and the consumption of regionally denominated products, *Urban Studies* **41**, 801–815.
- SKURAS D. and VAKROU A. (2002) Consumers' willingness to pay for origin labeled wine: a Greek case study, *British Food Journal* **104**, 898–912.
- TORRES R. (2002) Toward a better understanding of tourism and agriculture linkages in the Yucatan: tourist food consumption and preferences, *Tourism Geographies* **4**, 282–306.
- TORRES R. (2003) Linkages between tourism and agriculture in Mexico, *Annals of Tourism Research* **30**, 546–566.
- TREGGAR A., KUZNESOF S. and MOXEY A. (1998) Policy initiatives for regional foods: some insights from consumer research, *Food Policy* **23**, 383–394.
- VAN DER LANS I. A., VAN ITTERSUM K., DE CICCIO A. and LOSEBY M. (2001) The role of the region of origin and EU certificates of origin in consumer evaluation of food products, *European Review of Agricultural Economics* **28**, 451–477.
- VAN ITTERSUM K., CANDEL M. J. J. M. and MEULENBERG M. T. G. (2003) The influence of the image of a product's region of origin on product evaluation, *Journal of Business Research* **56**, 215–226.
- VAUGHAN D. R., FARR H. and SLEE R. W. (2000) Estimating and interpreting the local economic benefits of visitor spending: an explanation, *Leisure Studies* **19**, 95–118.

Copyright of *Regional Studies* is the property of Routledge and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.