Rural Tourism and Visitors' Expenditures for Local Food Products

Skuras, Dimitris; Dimara, Efthalia; Petrou, Anastasia

Postprint / Postprint
Zeitschriftenartikel / journal article

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:
www.peerproject.eu

Mitglied der
Leibniz-Gemeinschaft

gesis
Leibniz-Institut
für Sozialwissenschaften

Rural Tourism and Visitors' Expenditures for Local Food Products

SCHOLARONE™
Manuscripts

Rural Tourism and Visitors' Expenditures for Local Food Products

ABSTRACT

European rural development policy has supported the production of local and regionally denominated food as a mean to differentiate agricultural production and rural tourism as a mean to diversify rural employment. The aim of the present work is to address the tourists' decision to buy local food products while visiting lagging rural areas and the amount of money spent over these products. The findings of this work 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.

Keywords: Rural tourism; local food; rural development; visitor expenditures

JEL Classification: R11, R22, R58

INTRODUCTION

Efforts to diversify the rural economy have a long history in European rural development policy since the Mac Sharry reform in 1992, the Cork Conference in 1996, the CARPE document (CEC, 1997), the Agenda 2000 and more recently in the Mid-Term-Review (MTR) of the CAP (CEC, 2003a) and the Salzburg Conference in 2003 (CEC, 2003b). The development of rural tourism is regarded as a promising

diversification strategy especially for lagging and mountainous areas of the European Union (BRIEDENHANN and WICKENS, 2004; FLEISCHER and FELSENSTEIN, 2000; HEGARTY and PRZEZBORSKA, 2005). As a result, over the period 1994-1999, the EU Structural Funds contributed EUR 7.3 billion to tourism projects (ROBERTS and HALL, 2001). In the 2000-2006 period Community rural development financing from the European Agriculture Guarantee and Guidance Fund (EAGGF) will be of the order of around EUR 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 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). Since 1998, when this

Eurobarometer survey took place, incidences with major impacts on tourism may have changed these figures. These incidences include firstly, the outbreak of terrorism actions in major U.S cities and European capitals and secondly, 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 tourists 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 (EC, 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 behavior towards food products that are traditional and typical of a certain region can provide us with 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 this study is to address one facet of the interface between local

tourism development and territorially distinct food production. This is achieved by

analyzing 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 we seek to

analyze in particular are the factors that determine the tourists' purchasing behavior

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 re-define 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 behavior 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, TREGEAR 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" (TREGEAR 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 TREGEAR 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 behavior 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 behavior in specific, little empirical evidence exists from such explorations in academic literature (TREGEAR et al., 1998; TORRES, 2002; 2003; BESSIERE, 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 behavior

In this study we adopt a model of visitor expenditure similar to that proposed by DIMARA and SKURAS (1998). We assume 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:

$$u_1 \equiv u(1, y; s) \tag{1}$$

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

$$u_0 \equiv u(0, y; s) \tag{2}$$

The choice is expressed as:

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

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

$$z_i(y, s, \varepsilon_1) = \begin{cases} 1 \text{ if } z_i^* > 0, \text{i.e., if the i - th household head purchases local products} \\ 0 \text{ otherwise} \end{cases} \tag{4}$$

We estimate an expenditure equation for local products for each household head. The general model of the expenditure function is:

$$c_i = g_i(x^h, p) \tag{5}$$

where x is a vector of household characteristics including income, p 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:

$$c_i = \beta' x_i + e_{2i}, observed \ only \ if \ z_i^* > 0 \tag{6}$$

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 modeled through a probit model where

$\Pr ob(z_i = 1) = \Phi(\gamma' w_i)$ and $\Pr ob(z_i = 0) = 1 - \Phi(\gamma' w_i)$ and the error terms of equations

(4) and (6) have a bivariate distribution with zero means and correlation ρ as:

$(e_{1i}, e_{2i}) \sim bi \operatorname{var} iate\ normal [0,0,1, \sigma_{e_2}, \rho]$ then:

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

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 European Union Initiatives, including LEADER and many Regional Operational Programs. As mentioned before, the basic aim of this research is to study the purchasing behavior of visitors to such areas and their spending habits on local food products. However, information regarding this behavior 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 we should employ our own data collection procedures to acquire appropriate data for our research aims. This data collection was facilitated in the framework of an EU funded research program, 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 we assume 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 center 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 6,000 Euros which is almost two thirds and 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 to 20,000 tourists per year while the number of nights spent by all tourists accounts for 25,000 to 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 center 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 center.

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 10 cheese making firms in the area of Kalavryta collect an average of 150 tones of milk per day, produce an average of 20,000 tones of various kinds of cheeses per year (almost 15% of the country's production in feta cheese) and employee 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 centers 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 1,000 m of altitude. Aknowledgably, 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 Euros, 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 to 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 center than in the area of Kalavryta while religious, cultural and historical tourism is well developed. Since the early 90s, 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 sausages and the local spirits including a spirit distilled from a

kind of mulberry tree and a spirit 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

authors of this work. The sampling frame consisted of visitors in the two case study

areas for the period covering the spring of the year 2002 up to the spring of the year

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. We estimated that about 10% of those

approached refused to participate and, despite the fact that there is not available

information concerning the profile of those refused to participate, the rate is low to

have caused any serious bias to our 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 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. We attempted, however, to capture this potentially large outlet for local food products through our 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, we were 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 one of the visitors 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 not aware 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 time of thirty to forty-five minutes depending on whether certain areas of the questionnaire were skipped.

From the collected data, we estimated an economic proxy for the quality of the tourism experience. If we consider the whole tourism experience in an area to represent a composite (heterogenous) 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 and food and expenditure for participating in various recreation activities, may be used as a proxy to the total sum of expenditures for this heterogenous commodity. Thus, a unit value for this heterogenous 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 value (DONG et al., 1998). However, one should 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 due to the fact that the unit value for first time visitors is largely based on expectations when booking the trip and not on the actual experience. In this work, we consider 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 our 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.

Insert Table 1 about here

Insert Table 2 about here

RESULTS

The decision to buy local food products

Two criteria have guided the identification of the best choice model described in equations (3) and (4). Firstly, 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. Secondly, 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 rho-square (MADDALA, 1983), is also computed. Maximum likelihood estimated coefficients

based on equation (4), their corresponding t-ratios, the chi-square test, the ρ^2 goodness of fit measure and the percentage of correctly predicted cases are shown in table 3. The chi-square test is highly significant with a score of 100 and the corresponding goodness-of-fit ρ^2 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).

Insert Table 3 about here

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, modeling 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.

Insert Table 4 about here

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 we assume that our 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 Euros 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 we estimate a total direct spending for local food around 500,000 to 650,000 Euros per year which, without taking into account multiplier effects is 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 to 1,750,000 Euros per year equivalent to the GDP of 115 to 135 local persons.

As it was mentioned earlier, a possibly large outlet for local food products, missing from the aforementioned estimation of direct spending, are meals served in restaurants, B&Bs, 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).

Insert Table 5 about here

Local food products make up for 50 to 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% to 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 Kalvryta 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 B&Bs, to a high 25% to 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. Firstly, purchasing local food is a significant part of the total rural tourism expenditures. Secondly, visitors that choose to purchase local food products have distinct characteristics that differentiate them from visitors who do not usually consume local food products. Thirdly, 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 prior to 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 show that money spent on promotion increases visitors' prior information. Thus, spending on promotion has real benefits in terms of more spending 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 that 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, the interested reader is referred to 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.

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, Brussels.

COMMISSION of the EUROPEAN COMMUNITIES. (2003a) *CAP reform – a long-term perspective for sustainable agriculture.* European Commission, DG Agriculture. (accessible 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.

(accessible 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 Science Publishers, Amsterdam.

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**, 317-27.

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**, 466-73.

DOWNWARD, P. and LUMSDON, L. (2003) Beyond the demand for day-visits: An analysis of visiting spending, *Tourism Economics* **9**, 67-76.

DOWNWARD, P. and LUMSDON, L. (2000) The demand for day-visits: an analysis of visitor spending, *Tourism Economics* **6**, 251-261.

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**, (forthcoming).

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.

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. Downloadable from CESifo website at www.CESifo.de.

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.

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., TREGEAR A., and MOXEY, A. (1997) Regional foods: a consumer perspective, *British Food Journal* **99**,199-206.

McCANN, P. (2001) *Urban and Regional Economics*. Oxford University Press, Oxford.

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.

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 Publishing , Oxon and New York.

SKURAS D. and VAKROU A. (2002) Consumers' willingness to pay for origin labeled wine: a Greek case study, *British Food Journal* **104**, 898-912.

SKURAS, D. and DIMARA, E. (2004). Regional image and the consumption of regionally denominated products. *Urban Studies* **41**, 801-815.

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**, 546-66.

TREGEAR A., KUZNESOF S. and MOXEY A. (1998) Policy initiatives for regional foods: some insights from consumer research, *Food Policy* **23**, 383-94.

Van der LANS I.A., Van ITTERSUM K., De CICCO 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 Economic*s **28**, 451-77.

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**, 215-26.

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.

Table 1. Definition of variables

Variable Name	Definition
Dependent Variables	
CHOICE	Dummy variable, 1 if respondent purchases local food products
FOODEXPEND	Expenditures for local food products in Euros, if CHOICE=1
LFOODEXPEND*	Logarithm of FOODEXPEND
Socio-economic	
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 respondent has completed more than basic education, 0 otherwise
AGE	Respondent's age in years
MARITAL	Dummy variable, 0 for 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 respondent is aware of at least one well known local food product, 0 otherwise

Attitudes-

Perceptions

ENVIRON   Dummy variable, 1 the respondent is aware of the area's

                   environmental resources, 0 otherwise

HERITAGE   Dummy variable, 1 the respondent is aware of the area's

                   cultural heritage and history, 0 otherwise

QUALITY   The 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

Expenditure for

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

* 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 Name	Local Food Consumers		Non-Consumers of Local Food		All Visitors	
	Mean	St.Dev.	Mean	St.Dev.	Mean	St.Dev.
Socio-economic						
INCOME	20.96	30.62	17.19	14.16	19.87	26.98
INCOME2	1,374.42	10,523.77	494.70	1,165.39	1,121.35	8,909.29
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
Attitudes-Perceptions						
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	-----	-----	-----	-----
Expenditure for						
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

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

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

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

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

$\rho^2 = 0.17$

% of correctly predicted total observations= 76.5

Table 4. The spending behavior 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

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

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

$\overline{R}^2 = 0.219$

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

$\rho = 0.625$

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, B&Bs	52	58	55	61
Restaurants, Coffee Shops	68	64	66	98
Local manufacturers	21	58	46	22