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CHARACTERISTICS OF TOURISM DEVELOPMENT IN MOUNTAINOUS REGIONS USING CATEGORICAL REGRESSION: THE CASE OF METSOVO (GREECE)

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ABSTRACT

Leisure and tourism activities conceived as part of the developmental process of particular areas or regions can contribute to their economic growth to varying degrees of intensity so that they can be attainable and/or desirable. The exploitation of national resources is of great economic value in promoting tourism development in the provincial and underdeveloped areas of Greece. An evaluation of the factors that contribute to the growth of tourism in these regions would be useful in decision making and planning as far as their development is concerned. Such an interesting region from a tourism perspective, with many individual characteristics is the region of Metsovo, which belongs to Epirus, one of the poorest EU regions. However, Metsovo has recently presented a dynamic image since the region's natural resources and rich cultural heritage (many Greek benefactors originated from here), along with its farming products with designation of origin, have created major prospects for the promotion of tourism. The present research was carried out using a structured questionnaire and cluster sampling involving visitors staying in local hotels. The collected data were elaborated using the SPSS v. 11.0 statistical program. Descriptive statistics and categorical regression were used to analyse the relevant data. The main conclusions have shown that the profile of visitors to Metsovo can be summarized using the following characteristics: relatively young, minimum secondary school graduates and belonging to the upper social classes (judged by their profession). In addition, for more than half of the visitors the region of Metsovo is their permanent holiday location, primarily for relaxation purposes. The main problems that visitors face in the region of Metsovo relate to the lack of parking areas and cleanliness. Visitors with a higher level of education and/or income choose to visit Metsovo during public holidays or weekends; they also show a tendency to spend more money in comparison to the rest of the visitors. Finally, visitors who describe the surrounding countryside as nice or very nice are characterized by a higher professional and educational standing.

Keywords: activities, categorical regression, development, Greece, Metsovo, mountainous areas, questionnaires survey, socioeconomic characteristics, tourism.

1 INTRODUCTION

The mountainous regions in Greece cover a large part of the country, are of major environmental importance and present the lowest population density together with the highest density of villages per 100 km^2. From a developmental point of view and due to their geomorphological characteristics and sensitive ecosystems, mountainous regions also present intrinsic disadvantages related to the modernization of their traditionally extensive economic production base or the creation of modern competitive production activities. These disadvantages are also inextricably related to the lack of adequate infrastructure and services. The most obvious outcome of these developmental drawbacks is that the local population abandons these regions resulting in economic, social and environmental degradation. Nevertheless, some mountainous areas (e.g. Mt Pelion, Mt Parnassus and Metsovo) have managed to make use of their local natural and cultural resources and thus have set the foundations for the development of local tourism [1, 2].

After the 1970s tourism has become one of the most dynamic and rapidly evolving sectors of the global economy generating income, employment and taxation revenue. It has also served to expand

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the productive base of tourism regions and affected the growth of other local economic sectors such as agriculture, commerce and construction [3].

The development of tourism in an area depends both on its natural and cultural resources. A downgraded environment that reduces the appeal of a certain region along with the negative impact it may have on the local people's quality of life often also leads to a reduction in tourist numbers and seriously affects the local economy and society. This proves that the relation between tourism and the environment is considered particularly dynamic [3, 4]. This dynamic interaction greatly concerns modern society which seeks policies for the development of tourism that will neither adversely affect the environment nor the potential of tourism itself. In order to implement policies of this kind, it is essential to explore the characteristics of those who visit a region and the type of visits they make.

When a region acquires the characteristics of mass tourism in relation to its local production, social and environmental structure, then very serious implications arise both for its natural and artificial environment [5–12]. Many efforts have been made in recent years in order to put forward a model of tourism based on sustainable development. The promotion of specialized, alternative forms of tourism (e.g. agrotourism, ecotourism, mountainous tourism) has substantially assisted these efforts, particularly in provincial areas that are rich in environmental and cultural resources [13–15].

The present research aims to underline the individual and social characteristics of visitors to Metsovo, along with the region's problems and factors that contribute to its tourism development.

2 RESEARCH AREA

The research was carried out in Metsovo, situated in the Prefecture of Ioannina, from 15 January 2002 to 15 July 2002. Its population according to the 2001 census amounts to 3195 inhabitants. Since the 1981 census there has been a relative increase in the population of about 10.6%, which, when compared to the population's decline in the overwhelming majority of villages of the Prefecture, is considered highly impressive and can be attributed to the development of Metsovo as a whole [16]. Metsovo is a mountainous region with an altitude of 1160 m. Only 4.8% of its land is arable, while 26.5% is covered by forests and brushlands.

The region has remarkable touristic potential (natural environment and cultural heritage) offering opportunities for tourism development that have been partially achieved but without ensuring sustainable growth. Metsovo largely retains its traditional image, which is another factor that supports the growth of tourism. The main traditional and developed products of this region (in the sector of agriculture and livestock), many of which are well known in Greece and abroad, are: wine, tsipouro, cheese and a special kind of pasta. Products made of wood, wood carvings and weavings, which are not sufficiently promoted, also attract great interest from tourists. Finally, there are a fair number of hotels and rooms for rent, as well as several tavernas, cafés, pizzerias, bars, etc.

3 RESEARCH METHODOLOGY

The use of a questionnaire is essential when conducting sociological research in order to gather and systematically examine socioeconomic and demographic data. The questionnaire used in the present research included mostly closed-type questions related to the visitors' socioeconomic and demographic characteristics, the organization and development of the tourism sector, the quality of services provided, and the quality and quantity of tourist resources in the region. The researchers used a structured questionnaire and a simple random cluster sampling method among groups of hotel guests [17–20]. Cluster sampling is used when there is no sampling framework available within the principal units of the population on which the research is focused. Another advantage of cluster sampling is that it reduces the interviewers' travel expenses and the duration of the research itself.

Despite the fact that each cluster could be considered as a stratum, cluster sampling differs from stratified sampling. In the latter, we take a random sample of units from each stratum, while in the

former we take some random clusters and then all units within each cluster of the specified sample. In this way, cluster sampling is incumbent upon us having created the clusters in such a way so that each one is characterized by a lack of homogeneity similar to that of the total population (because only then each cluster will faithfully represent the population as a whole). Stratified sampling, however, is incumbent upon there being the greatest degree of homogeneity possible within each stratum, and the greatest lack of homogeneity possible between strata (so that each stratum is homogeneous and represents a distinct part of the population). Cluster sampling was used in order to determine the weeks during which the research would take place in Metsovo involving hotel residents. For this reason, pre-sampling and the relevant formulae for cluster sampling were applied [20]. The final sample included 119 visitors.

The collected data were elaborated using the SPSS v. 11.0 statistical program. Descriptive statistics and categorical regression were used to analyse the relevant data. Categorical regression provides an optimal scaling of nominal, ordinal and numerical variables by quantifying their categories in such a way that the square of the correlation between the quantified dependent variable and the linear combination of the quantified independent variables is maximized. The interpretations provided are related to both the transformed and the initial variables, due to the relation between the initial variables and the transformed ones.

A significant advantage of categorical regression as compared to classic linear regression is that it deals with the non-linear relations between the variables via their transformation. Moreover, the non-linear transformation of the independent variables reduces their interdependence, which results in the larger characteristic roots of the independent variables correlation matrix appearing smaller, and the smaller characteristic roots appearing larger than they actually are.

In short, categorical regression takes into account a wide range of non-linear relations through the three scaling levels for each variable, which is something that classic regression cannot achieve. Thus, via optimal scaling, it proves to be more flexible than classic regression with the least possible degree of complexity [21]. Categorical regression has been applied in other environmental and agricultural studies in Greece [22–24]. In this way, the days that visitors prefer for their trip, the cost they are willing to pay and the way they approach the surrounding countryside was described as a multidimensional unit of variables:

$$Q = f(X_1, X_2, X_3, X_4, X_5, X_6).$$

The following dependent variables were used in the samples:

Q_1 = the days preferred by visitors (1 = any day, 2 = public holidays and weekends) (nominal);
Q_2 = description of the countryside (1 = not good/awful, 2 = average, 3 = nice, 4 = very nice) (ordinal);
Q_3 = the cost the visitors are willing to pay (scale).

The following independent variables were also used:

X_1 = sex (1 = male, 2 = female) (nominal);
X_2 = age (scale);
X_3 = family status (1 = married, 2 = single) (nominal);
X_4 = level of education [1 = illiterate/primary school graduate, 2 = Gymnasio graduate (3-year secondary school), 3 = technical school graduate, 4 = Lykeio graduate (6-year secondary school), 5 = Technological Educational Institute graduate, 6 = university graduate] (ordinal);
X_5 = profession [1 = farmer, 2 = housework, 3 = private employee, 4 = public servant, 5 = self-employed (tradesman, plumber, electrician, etc.), 6 = self-employed (doctor, lawyer, engineer, etc.), 7 = artisan/businessman] (ordinal);
X_6 = income (in euros; 1 = <450, 2 = 450–900, 3 = 901–1300, 4 = 1301–2600, 5 = >2600) (ordinal).

The analysis of residuals has been carried out by the application of linear regression on the transformed data, for each one of the independent variables of the three models. The graphic display showed that the scatter of points does not present a concrete arrangement, certifying the improvement of the forecasting ability of the independent variables via their transformation.

4 RESULTS

The results of the research mainly focused on the visitors' individual characteristics (age, sex, family status, level of education, profession and monthly income) and the characteristics of their visits (frequency of visits during the summer and winter period, distance covered in order to reach the region of Metsovo, whether Metsovo is their permanent holiday location and which days they find most suitable for visiting the area). Other questions included the reasons for the visit, the cost of the visit, the description they made of the surrounding countryside and the main problems that they faced during their visit to Metsovo. Finally, the visitors' preferences were examined with respect to two topics which are not directly related to this region but concern tour operators and their strategy planning: their preference as to the various forms of tourism available during the summer holidays, and in relation to a range of winter activities.

4.1 The visitors' individual characteristics

The visitors' ages range between 18 and 59 years, with the average being around 32.4 years. As far as sex and family status are concerned, there seems to be almost no differentiation in relation to these characteristics. Young people and couples without children are interested in leisure activities, relaxation and adventure. Older people and couples aged over 45 years (who usually have children and professional careers) are also motivated by leisure activities and relaxation. However, we should note here a major dispersion in the demand for domestic tourism, which is related to whether visitors do or do not have a family as well as their age.

The visitors' economic level is related to their profession and is mainly in the middle scale. In Greece, during the last two decades the so-called middle class has constantly expanded; on the other hand, tourism is becoming a steadily increasing expense on the family budget.

Almost half of the visitors are graduates with tertiary education and 41.2% are graduates with secondary school education (Table 1); this is a significant percentage and means that the level of education of Greek tourists is relatively high. In terms of profession, 26.1% are businessmen and artisans, 22.7% private employees, 18.5% public servants, while almost 18% are self-employed (doctors, lawyers, etc.). Finally, there seems to be no variance in terms of the visitors' income level (Table 2).

4.2 The characteristics of the visits

Almost every visitor comes to Metsovo once, usually during winter, while half of the visitors also visit the area during summer. The average distance covered by visitors in order to reach the region is about 400 km. For more than half of the visitors, Metsovo is their permanent holiday location, while those who have been to Metsovo before prefer to do so on weekends and public holidays (Table 3).

A mountainous region like Metsovo is a competitive destination and attracts more visitors than coastal regions do during winter. Another fact that emerges is that in Metsovo, as in other mountainous areas also, visitors make short trips during different seasons of the year, particularly during weekends and public holidays.

Table 1: Descriptive statistics of the visitors' age, sex, family status and level of education.

Characteristic	Category	Statistical data		
		Minimum	Maximum	Mean
Age		18	59	32.4
		Frequency	%	
Sex	Male	60	50.4	
	Female	59	49.4	
Family status	Married	62	52.1	
	Single	57	47.9	
Level of education	Illiterate	1	0.8	
	Primary school graduate	3	2.5	
	Gymnasio graduate (3-year secondary school)	5	4.2	
	Technical school graduate	8	6.7	
	Lykeio graduate (6-year secondary school)	49	41.2	
	Technical Institute graduate	14	11.8	
	University graduate	39	32.8	

Table 2: Distribution of the visitors' profession and monthly income.

Characteristic	Category	Frequency	%
Profession	Farmer	1	0.8
	Housework	7	5.9
	Private employee	27	22.7
	Public servant	22	18.5
	Self-employed (tradesman, plumber)	10	8.4
	Self-employed (doctor, lawyer)	21	17.6
	Artisan/businessman	31	26.1
Income (monthly)	<450	22	18.5
	450–900	32	26.9
	901–1300	22	18.5
	1301–2600	17	14.3
	>2600	26	21.8

4.3 Main reasons for the visit

The main reasons for which visitors choose to come to Metsovo are relaxation, peace and tranquillity (73.9%). The relevant percentage that arrives for hiking trips is low despite the fact that Metsovo is an ideal place for such activities (Table 4). In this case, the wide variety of motives indicates that we are dealing with visitors who come with different objectives in mind, who visit Metsovo throughout the year and whose duration of stay also varies. This result confirms the point of view that there is an increase in the number of trips to the region and that the demand is based on dynamic, complex and multiple criteria.

Table 3: Descriptive statistics of the visits' characteristics.

Characteristic	Category	Statistical data		
		Minimum	Maximum	Mean
Frequency of visits during winter		0	12	1.08
Frequency of visits during summer		0	11	0.55
Distance travelled (km)		100	1000	400
		Frequency		%
Most suitable days for visiting Metsovo	Weekdays	3		2.5
	Public holidays	19		16.0
	Weekends	29		24.1
	Any time	18		15.1
	I don't know/this is the first time	50		42.0
Permanent holiday location	Yes	67		56.3
	No	52		43.7

Table 4: Main reasons for the visit.

Reasons for the visit	Frequency	%
(a) Relaxation, to enjoy peace and tranquillity	88	73.9
(b) Hiking trips	6	5.0
(c) Picnics	1	0.8
(d) Horse riding	2	1.7
(e) Professional reasons	2	1.7
(f) Other reasons	20	16.8

4.4 Cost of the visit

The greatest expense for people visiting Metsovo is accommodation, with an average cost of 132 euros. This is followed by food expenses, which cost approximately 111 euros. Other expenses are also notable, such as 80.67 euros for return travel expenses, 53 euros for purchasing traditional products; the smallest amount of money is paid for entertainment, namely 45 euros (Table 5). The average cost of the visit in combination with the long distance that visitors have to travel also indicates their financial status. In recent years, there has been an increasing tendency to spend more money on domestic tourism.

4.5 The surrounding countryside

The visitors' points of view concerning the surrounding countryside are unquestionable and very specific: 90.8% consider it is very nice and 8.4% nice (Table 6). The countryside, and more specifically the surrounding mountainous landscape with its alternating images of woods, green fields and crops,

Table 5: Cost of the visit.

Characteristic	Statistical data		
	Minimum	Maximum	Mean
(a) Return travel costs	60	734	80.67
(b) Cost of accommodation	30	440	131.97
(c) Cost of food (tavernas, restaurants)	30	587	111.38
(d) Cost of entertainment (bars, clubs, etc.)	25	440	44.86
(e) Purchase of local traditional products (food, folk art items, etc.)	0	294	52.76

Table 6: Visitors' points of view on the surrounding countryside.

Description of the countryside	Frequency	%
(a) Very nice	108	90.8
(b) Nice	10	8.4
(c) Average	1	0.8
(d) Not good/awful	0	0.0

Table 7: Problems during the visitors' stay in Metsovo.

Problems	Frequency	%
(a) Parking	46	38.7
(b) Large numbers of visitors	12	10.1
(c) Accommodation (shortage of rooms)	3	2.5
(d) Negative attitude of local residents	0	0.0
(e) Negative attitude of service providers	7	5.9
(f) Noise pollution	7	5.9
(g) Cleanliness	44	37.0

is one of the most significant natural resources that encourages leisure demand and attracts visitors to the region. The untouched nature and the beautiful countryside carry a great economic value particularly in relation to mountainous tourism [25]. In particular, the mountainous area of Metsovo does not present any aesthetic inconsistencies or deviations, as these have been maintained within certain limits.

4.6 Problems during the visit

The main problems visitors face in Metsovo are the lack of parking and cleanliness. On the other hand, they all agree that the attitude of the local residents is impeccable (Table 7). Further improvement to

the infrastructure and services will serve to attract more tourists to the region, increase their level of satisfaction and therefore increase tourist consumption.

4.7 Preferences of Metsovo visitors regarding various activities

Most visitors prefer to observe nature (58.8%), which is considered a mild form of activity when compared to skiing (39.5%) and climbing (11.8%). Observing the abundant flora, fauna and water resources, along with the other environmental features of this area, seems to be an activity particularly enjoyed by older people (Table 8).

4.8 Visitors' preferences regarding the various forms of tourism available during the summer holidays

Finally, visitors' preferences were examined in relation to summer vacations. Almost 40% prefer the traditional form of holidays by the sea. Approximately 55.5% prefer to divide their holidays between the sea and the mountains, while a small percentage of 4.2% are loyal fans of mountainous tourism (Table 9).

The high percentage of visitors who prefer to spend their holidays by the sea and near coastal areas is mainly due to the traditional model of tourism developed in Greece, which has highlighted its main advantages: sun, sea and sandy beaches. In recent years however, mountainous areas have started to become popular destinations for visitors interested in a wide range of specialized and alternative forms of tourism. In addition, we have the phenomenon of many visitors choosing to spend their winter holidays in mountainous regions and their summer holidays by the sea and the coast. The positive result for the tourist sector is that, apart from traditional summer holidays and trips, a trend is being established for making trips during different seasons of the year.

Table 8: Preferences of Metsovo visitors regarding various activities.

Activities	Frequency	%
(a) Skiing	47	39.5
(b) Climbing	14	11.8
(c) Observation of nature	70	58.8

Table 9: Visitors' preferences regarding the various forms of tourism available during the summer holidays.

Forms of tourism	Frequency	%
(a) Various types of mountainous tourism (hiking, nature walks, ecological, etc.)	5	4.2
(b) Various traditional forms of tourism (on the coast)	48	40.3
(c) A combination of both	66	55.5

4.9 Days and individual characteristics

Categorical regression gave the value of the multiple determination coefficient $R^2 = 0.48$, which shows that 48.0% of the variance of the transformed values of the 'suitable days for a visit' variable is explained by the transformed values of the independent variables included in the regression equation. The relevant variance analysis produced the value $F = 2.260$, which corresponds to a 0.01 level of statistical significance.

Table 10 shows the standardized regression coefficients in relation to the standard error values, the corresponding F-values and the relative significance of the independent variables. The F-value of each independent variable is consistent with the presence of the other independent variables and shows that if that variable is removed from the model, while all others remain, then the model's predicting ability decreases. Thus, if we remove the variables 'level of education' and 'income' from the model, the latter becomes particularly weak at predicting the variable 'suitable days for a visit' based only on the remaining variables. On the contrary, if we remove the variables 'age' and 'profession', then the model's predicting ability shows only a minimal decrease.

From the standardized regression coefficients, the one with the highest positive value corresponds to the variable 'level of education' followed also by the positive value of the coefficient for the 'income' variable; the only coefficient with a negative value is related to the 'age' variable. The relative significance of the independent variables is of major importance in the case of the 'level of education' variable, closely followed by the 'income' variable. If added together, these two variables account for 90.8% of the overall significance of the independent variables.

In order to effectively explain the effect of the independent variables on the dependent variable, it is essential to refer to the quantified values of the variables through transformation plots. This shall also be done for the independent variables with the highest significance, in combination with the signs and the values of the regression coefficients.

From the 'income' variable transformation plot and in combination with the positive sign of the coefficient, it becomes obvious that the transition from the lower to the higher income levels is related to a distinct preference for making visits during public holidays/weekends. On the other hand, the 'level of education' variable transformation plot, in combination with the positive sign of the coefficient, shows that the transition from a lower to a higher level of education—up to the Technical School level—is related to a preference for making visits on any day (public holidays and weekends excluded), while those at the high school graduate level and above seem to prefer public holidays and weekends (Fig. 1).

Table 10: The standardized regression coefficients and the relative significance of the independent variables.

	Standardized coefficients			
Independent variables	Beta	Standard error	F-values	Importance
Sex	0.118	0.094	1.597	0.021
Age	−0.134	0.137	0.959	−0.046
Family status	0.151	0.138	1.196	0.089
Level of education	0.335	0.089	14.221	0.486
Profession	0.108	0.089	1.493	0.027
Income	0.313	0.102	9.446	0.422

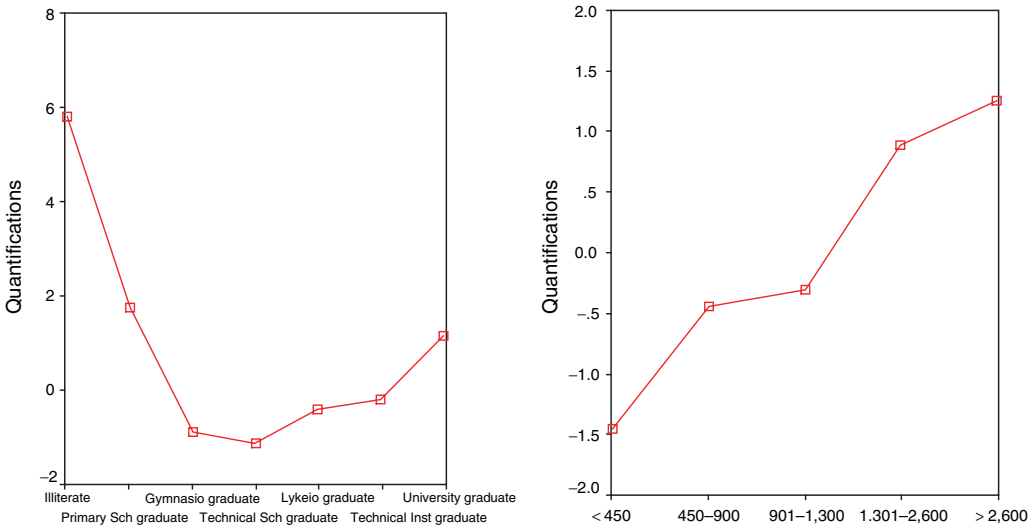

Figure 1: Transformation plots for 'level of education' and 'income'.

Table 11: The standardized regression coefficients and the relative significance of the independent variables.

	Standardized coefficients			
Independent variables	Beta	Standard error	F-values	Importance
Sex	0.152	0.095	2.559	0.073
Age	−0.104	0.139	0.561	0.031
Family status	0.080	0.138	0.332	−0.007
Level of education	0.279	0.091	9.396	0.319
Profession	−0.312	0.090	11.925	0.512
Income	−0.130	0.094	1.911	0.073

4.10 Description of the countryside and individual characteristics

Categorical regression gave the value of the multiple determination coefficient $R^2 = 0.42$, which shows that 42.0% of the variance of the transformed values of the 'description of the countryside' variable is explained by the transformed values of the independent variables included in the regression equation. The relevant variance analysis produced the value $F = 1.724$, which corresponds to a 0.06 level of statistical significance.

The data presented in the Table 11 shows that if the 'profession' and the 'level of education' variables are removed from the model, then the model becomes particularly weak at predicting the variable 'description of the countryside' based only on the remaining variables. On the contrary, if we remove all other variables, then the model's predicting ability shows only a minimal decrease.

From the standardized regression coefficients, the one with the highest negative value corresponds to the variable 'profession' followed by the positive value of the coefficient for the 'level of education'

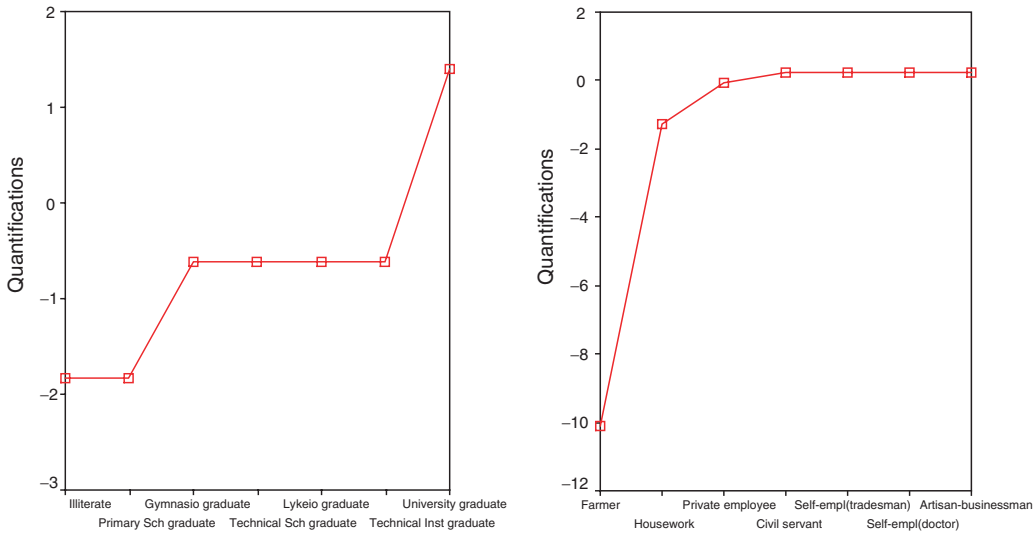

Figure 2: Transformation plots for 'level of education' and 'profession'.

variable. The relative significance of the independent variables is of major importance in the case of the 'profession' variable, closely followed by the 'level of education' variable. If added together, these two variables account for 83.1% of the overall significance of the independent variables.

From the 'profession' variable transformation plot and in combination with the negative sign of the coefficient, it becomes obvious that the transition from the lower to the higher professional levels is related to a description of the countryside as just nice. On the other hand, the 'level of education' variable transformation plot, in combination with the positive sign of the coefficient, shows that the description of the countryside as very nice is related to a higher level of education (Fig. 2).

4.11 Cost and individual characteristics

Categorical regression gave the value of the multiple determination coefficient $R^2 = 0.54$, which shows that 54.0% of the variance of the transformed values of the 'cost' variable is explained by the transformed values of the independent variables included in the regression equation. The relevant variance analysis produced the value $F = 3.365$, which corresponds to a zero level of statistical significance and means that the categorical regression model adapted well to the transformed data.

The data presented in the Table 12 shows that if the 'income' variable is removed from the model, then the model becomes particularly weak at predicting the dependent variable based only on the remaining variables. On the contrary, if we remove all other variables, then the model's predicting ability shows only a minimal decrease. From the standardized regression coefficients, the one with the highest positive value corresponds to the 'income' variable.

The relative significance of the independent variables is of major importance in the case of the 'income' variable, which accounts for 99.4% of the overall significance of the independent variables.

As it was expected and is confirmed by the 'income' variable transformation plot in combination with the positive sign of the coefficient, it is obvious that the transition from the lower to the higher income level is related to a higher cost (more money spent) by those visiting Metsovo (Fig. 3).

Table 12: The standardized regression coefficients and the relative significance of the independent variables.

	Standardized coefficients			
Independent variables	Beta	Standard error	*F*-values	Importance
Sex	0.125	0.089	1.984	−0.019
Age	−0.164	0.132	1.538	−0.092
Family status	0.067	0.132	0.258	0.053
Level of education	0.152	0.083	3.319	0.048
Profession	−0.175	0.089	3.914	0.017
Income	0.611	0.106	33.395	0.994

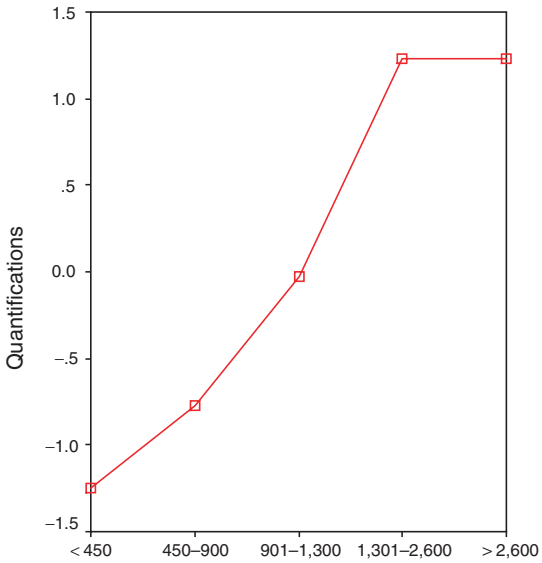

Figure 3: Transformation plot for 'income'.

5 CONCLUSIONS

It is a fact that tourism in general, and in particular domestic tourism, can contribute to the development of mountainous regions in Greece which may have experienced demographic and economic problems in recent decades, but nevertheless have an important wealth of unexploited natural and cultural resources to offer. The last 30 years have been characterized by a continuous expansion of the so-called middle class in our country and the realization that tourism has become a steadily increasing expense on any family budget. At the same time however, the high level of competition in the private sector, which is primarily dominated by executive personnel with a high level of education, a high income but very little free time, has meant that this group tends to visit tourist areas mainly during public holidays and weekends.

The profile of those who visit Metsovo can be summarized as follows: relatively young, minimum secondary school graduate and belonging to the upper social classes (judged by their profession).

More than half of the visitors choose Metsovo as their permanent holiday location, particularly during the winter season and more specifically on weekends and public holidays. The purpose of their visit is mainly to relax, and they do not seem to participate in any activity like skiing or climbing, although they find the idea appealing.

It has been noted that they choose to visit Metsovo due to the surrounding countryside, but they often face problems due to lack of parking and cleanliness. On the other hand, it should be noted that the hospitality provided by the local people is excellent. Finally, it should also be taken into account that their favourite type of summer holiday is a combination of mountain and sea.

REFERENCES

[1] Christopoulou, O.G. & Papadopoulos I.I., Winter tourism, development of mountainous areas and the visitors' attitudes on the landscape protection; the case of Pertouli ski-center. *Anatolia: An International Journal of Tourism and Hospitality Research*, **12(2)**, pp. 153–164, 2001.

[2] Martinos, N. & Karanikolas, P., Spatial differentiation in Greek agriculture. *Greek Agriculture in View of 2010*, ed. N. Maravegias, Papazisi: Athens, pp. 33–77, 1999.

[3] Kokkosis, C. & Tsartas, P., *Sustainable Tourism Development and the Environment*, Kritiki: Athens, pp. 21–35, 2001.

[4] Lagos, D., Growth of tourism in Greece and environmental protection. *European Environmental Research (East-West Series in Economics, Business and the Environment)*, **1(1)**, pp. 105–111, 1998.

[5] Tsartas, P., Socioeconomic impacts of tourism on two Greek isles. *Annals of Tourism Research,* **19(3)**, pp. 516–533, 1992.

[6] Cater, E., Ecotourism in the third world: problems for sustainable tourism development. *Tourism Management*, **14**, pp. 85–89, 1993.

[7] Wight, P., Ecotourism: ethics or eco-sell? *Journal of Travel Research*, **31**, pp. 3–9, 1993.

[8] Driml, S. & Common, M., Ecological criteria for sustainable tourism: application to the Great Barrier Reef and Wet Tropics World Heritage Areas. *Journal of Sustainable Tourism*, **4**, pp. 3–16, 1996.

[9] Wallace, G.N. & Pierce, S.N., An evaluation of ecotourism in the Amazons, Brazil. *Annals of Tourism Research*, **23**, pp. 843–873, 1996.

[10] Brown, K., Turner, R.K., Hameed, H. & Bateman, I., Environmental carrying capacity and tourism development in the Maldives and Nepal. *Environmental Conservation*, **24**, pp. 316–325, 1997.

[11] Shackley, M., Tourism development and environmental protection in southern Sinai. *Tourism Management*, **20**, pp. 543–548, 1999.

[12] Teye, V., Soenez, S. & Sira Kaya, E., Residents' attitudes toward tourism development. *Annals of Tourism Research*, **29**, pp. 668–688, 2002.

[13] Steele, P., Ecotourism: an economic analysis. *Journal of Sustainable Tourism*, **3(1)**, pp. 29–44, 1995.

[14] Hong, S., Kim, J. & Kim, S., Implications of potential green tourism development. *Annals of Tourism Research*, **30**, pp. 323–341, 2003.

[15] Andriotis, K., Alternative tourism and its differential characteristics. *Topos*, **20–21**, pp. 139–154, 2003.

[16] NSSG, http://www. statistics.gr/gr_tables/s1100_SAP_1_monimos2001.htm, 26 June 2005.

[17] Siardos, K.G., *Methodology of Agricultural Sociological Research*, Ziti: Thessaloniki, pp. 92–94, 1997.

[18] Daoutopoulos, G., *Social Research Methodology*, 3rd edn, Zygos: Thessaloniki, pp. 111–135, 2002.
[19] Kalamatianou, A., *Social Statistics, Methods of Unidimensional Analysis*, Oikonomiko: Athens, pp. 672–682, 1997.
[20] Matis, K., *Forest Sampling*, 2nd edn, Democritus University of Thrace: Xanthi, pp. 190–196, 2001.
[21] Siardos, K.G., *Multivariable Statistical Analysis with Exams Through the use of SPSS—Vol. 2: Study of Variables Dependence*, Ziti: Thessaloniki, pp. 365–390, 2000.
[22] Goupos, C., Soutsas, K., Matsiori, S. & Tsantopoulos, G., Illegal land reclamation and the factors which influences them. *Proc. of the 10th Hellenic Forest Association*, Tripoli, pp. 359–366, 2002.
[23] Tsantopoulos, G., The application of categorical regression for the identification of factors that contribute to the growth of planned public relations. *Special Themes. Institute of Technological Education. Ministry of Education and Religion*, **4**, pp. 59–73, 2003.
[24] Michailidis, A., Socioeconomic Evaluation of Large Infrastructure Projects: The Case of Petrenia Irrigation Dam, PhD thesis, Department of Agriculture, AUTh, Thessaloniki, pp. 149–192, 2004.
[25] Karameris, A., Mountain tourism in the framework of a networked socio-ecosystem. *Geotechnical Scientifics Issues*, **4**, pp. 29–43, 1993.