Greek Consumers' Expenditure on Recreation Activities during Difficult Times

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Abstract

This paper uses a dataset of 800 consumers in Athens for the time period 2010-2011 in order to examine the impact of socio-economic and psychological parameters on Greek consumers' expenditure on recreation activities. Several ordinary least squares techniques are applied to capture the possible non-linearities relationship between covariates and criterion variable. Results reveal strong associations between demographic, socioeconomic and psychological parameters and consumers' attitude in recreation expenditures experimentation.

Keywords: recreation expenditures; crisis; households' size; marital status; non-linearities

1. Introduction

The topic of the interrelationship between recreation expenditures and socioeconomic status is widely discussed in global scientific research. More generally, there is a plethora of microeconomic findings that reveal an existing correlation between recreation activities and consumers' contemporary economic life. Especially, researchers endeavour to investigate the effect of economic parameters on the consumers' demand for recreation activities. Both economic and demographic consumer profiles have changed throughout recent years. Changes in technology, in education and in general lifestyle have led to changes in the types of recreation activities. These changes, combined with an increase in individual incomes, have also led to changes in the consumers' level of expenditure on recreation.

Nowadays, Greece faces a high recession and a parallel fiscal consolidation accompanied with a cut in wages. That implies several changes in consumer behaviour with respect to many different kinds of goods and services. A severe blow concerning recreation expenditures has occurred in the productive sectors of the Greek economy. Therefore, it is particularly appropriate in this paper to identify the factors that affect the individual expenditures on recreation activities. Moreover, the main objective is to investigate how several socio-economic indicators affect expenditures on outdoor recreation at this financially difficult period. Current economic crisis gives more research interest in this particular study; the financial situation creates several differentiations in consumers' psychological behaviour. Additionally, according to Greek Household Budget Survey, it is of high

interest that, compared with several European countries, Greek consumers spend much less money on recreation activities, as a percentage of total monthly household expenditures.

One more advantage of our approach is that we present two robust and applicable models that explain the effect of crisis in society with respect to consumers' psychological attitude. Using demographic variables we are able to capture the trend on recreation activities expenditure throughout time (i.e. before and after crisis). Moreover our models are rather general and explicit and therefore no special assumptions are needed. Their adaptability makes them viable and applicable long-term and this is a strong asset when creating econometric models. Finally, it should be mentioned that this research is the first attempt to explain Greek consumers' behaviour with respect to recreation activities in the economic recession.

The remainder of the paper is organized as follows: Section 2 presents a review of the existing literature. Methodological issues and data are described in Section 3, followed by the empirical results in Section 4. Finally, conclusions and policy implications are presented in Section 5.

2. Review of the Existing Literature

In recent years, the rise in consumers' income coupled with the reduction of working hours allowed them to enjoy more leisure time and higher involvement in recreation activities. Tseng (2003) estimated that in 2000, the U.S. consumers' average spending on recreation was three times higher than the costs of education. The majority of studies aim to interpret the marginal effect of several socio-economic variables - age, gender, income, household size, marital status, employment status, educational level - on consumers' recreation spending.

Generally, research on the factors of life satisfaction has shown a strong correlation between quality of life and demographic and psychological variables (Wright & Bondurant, 1970; Owen, 1971; Dardis, Soberon-Ferrer, & Patro, 1994; Davies & Mangan, 1992; Fish & Waggle, 1996; Cai, 1998, 1999; Hong, Kim, & Lee, 1999; Fernández-Ballesteros, Zamarrón, & Ruíz, 2001; Tseng, 2003; Jang, Bai, Hong, & O'Leary, 2004; Lee & Bhargava, 2004; Boman, Fredman, Lundmark, & Ericsson, 2013; Brida & Scuderi, 2013). The demographic structure, composed mainly by age, gender and consumers' educational level, is the main group of explanatory variables to determine the amount of individual expenditures on recreation activities (Wiley, Shaw, & Havitz, 2000). Also, income, employment status, as well as household decomposition influence both directly and indirectly the householders' quality of life.

More specifically, income seems to play the most important role in the amount of expenses on recreation. However, previous research shows that there is a non-perfect stable relationship between consumers' income and consumers' satisfaction in the quality of their lives. For instance, Inglehart (1997) indicates that consumers who live in rich countries exhibit a higher degree of life satisfaction compared with consumers who live in poorer societies. However, this relationship begins to weaken as consumers meet their basic needs (Diener, 2000). Regarding gender, it has been found that men have more available leisure time before marriage, whereas it is greatly reduced after they get married (Gladwell & Bedini, 2004). In terms of age, it is estimated that older consumers have less leisure time available for recreation activities than younger ones (Searle & Jackson, 1985; Blakery & Dattilo, 1993). This result could be explained by the fact that leisure time for recreation activities decreases as age increases; however, this relationship also seems to be non-linear. Additionally, marital status seems to play a special role in the quality of consumers' living standards. Married consumers enjoy a higher degree of satisfaction compared with divorced and unmarried people (Fernández-Ballesteros *et al*., 2001). Nevertheless, they devote less free time to recreation activities due to higher family obligations. On the other hand, more educated consumers spend more money

on recreation than consumers with a lower level of education. According to Tseng (2003) higher income is linked with higher education in terms of consumption.

As far as psychosocial factors are concerned, it is estimated that there is a strong relationship between satisfaction in the consumers' quality of life and specific psychological variables including consumers' health status, the presence of several diseases, consumers' social relations, as well as their economic uncertainty and optimistic/pessimistic behaviour (Lehr, 1982; Manell & Dupuis, 1996). Especially, consumers with chronic health problems show lower level in terms of quality of life compared with consumers who have not faced similar issues. In any case, it is known that consumers' level of health status is associated with several psychological factors such as consumers' daily activities and socioeconomic factors including income, educational level and gender. Positive correlation also exists between physical activity and the level of socialization. More specifically, the higher the socialization level the better the life satisfaction (Fernández-Ballesteros *et al.*, 2001). On the other hand, the feeling of general economic uncertainty along with the level of macroeconomic stability influences consuming behaviour and the level of household savings (Furnham, 1985; Chamon, Liu, & Prasad, 2013). For instance, a low level of political or macroeconomic stability leads consumers to be more pessimistic and so to limit levels of general household expenditures (including recreation expenditures).

In the most recent years, the relationship between recreation expenditures and the growth of internet use is also of high interest (Hong, 2007). More specifically, there is a high degree of substitution between these goods. That indicates a negative correlation between internet growth and recreation costs. Hong (2007) shows that internet could be a free recreation. The fact that this attitude characterizes young people takes on particular interest for future research.

Moreover, researchers' interest is recently focused on consumers' variation of free time (Chen, 2012). Consumers have a tendency to substitute expensive goods with lower cost products. As previous literature has stated, total expenditure on recreation is primarily influenced by the consumers' level of real income (Owen, 1971). In particular, we can notice that not only the level of income but mainly the variance of real income seems to affect the level of spending on recreation activities. An increase in real income, (assuming that leisure is a luxury good), will lead to a reduction in working hours. A higher wage increases the total disposable income which in turn leads to higher expenditure on recreation activities. This relationship can be shown diagrammatically in "Figure 1".
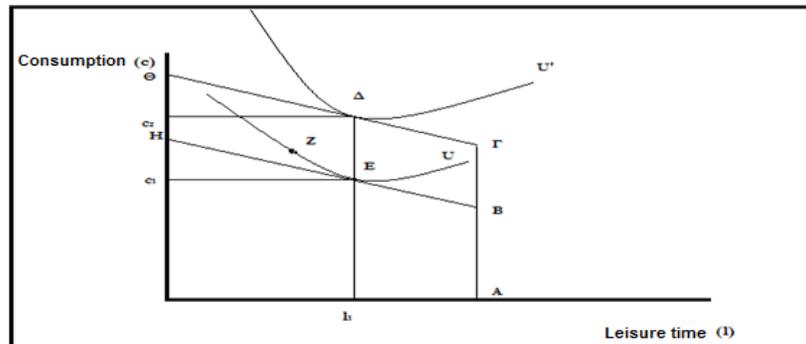

Figure 1. Consumption versus leisure time

As it can be seen, given that leisure time and real consumption are normal goods, an increase in real wage leads to an increase in consumption (from c_1 to c_2). However, time allocation for recreation depends on the size of the substitution effect (shift from E to G) and income effect (moving from D to G). This means that the result of total redistribution of time between working

and leisure time is not conclusive. Mentioned analysis illustrates that leisure time is a very significant variable in order to determine the level of individual expenses on recreation activities.

3. Methodological Issues and Data

Statistical data inform us about the consumers' profile with respect to their expenditures on recreation while simultaneously the readjustment of their attitudes is illustrated by the emergence of the economic crisis. Based on our sample, it was estimated that the average expenditures on recreation is 93.22€ per consumer. In addition, the average gross monthly income is 886.48€ while the average age of the sample is 34 years old. 54.6% of the sample are not married while 54% have acquired advance education having a degree from a higher educational organization.

Economic recession along with fiscal consolidation have led to changes in consuming attitudes with respect to several goods and services. Interesting information with respect to modern consuming behaviour is presented in the following figure.
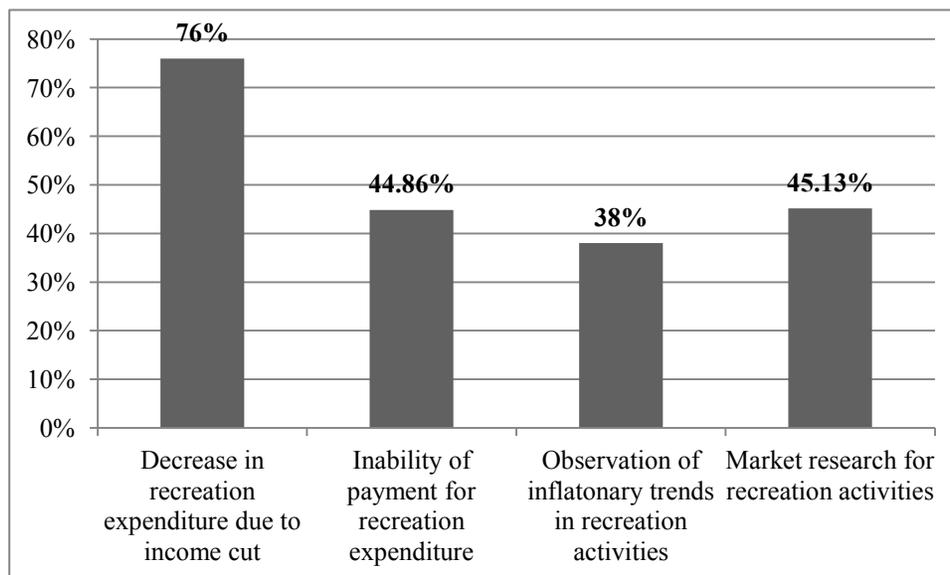

Figure 2. Percentages of the sample with respect to specific questions

More specifically, as it can be observed, 76% stated that they have decreased their recreation expenditure per month due to the fiscal measures and income cut. More importantly, around 45% indicated that they are unable to purchase recreation services due to the current economic situation while 38% of the sample reported that they have recognized inflationary pressures in the prices of recreation activities. Also, it is of high interest that approximately 45% stated that they compare products/services of different companies before proceeding to purchases (market research).

From the aspect of econometric analysis, the research provides insights into the determinants that affect consumers' attitude towards recreation. The empirical analysis is based on a cross-section data set. In particular, a stratified random sampling technique[1] of 800 consumers was used. Moreover, the empirical results were based on OLS estimations while several subsets of independent variables are used in this empirical analysis including demographic characteristics,

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[1] The sampling procedure is conducted by the authors.

economic variables and psychological factors. The methodology that is followed is illustrated by the general econometric expression:

$$w_i = \alpha_0 + \beta_i Z_i + u_i$$

where w_i is the dependent variable of the econometric model, α_0 is the constant term, Z_i is the vector of covariates, β_i is the coefficients of independent variables of interest and u_i the errors of the regression model. More specifically, we employed the following expanded specification for a consumer's ability to spend money on recreation (Model I):

lnconentert = b₀ +b₁lnmincome + b₂age + b₃gender + b₄married + b₅retired + b₆educaei + b₇enoughinc + b₈inability + b₉efuncert + uᵢ

where *lnconentert* is a quantitative variable indicating the logarithmic average monthly expenditures on recreation per person; *lnmincome* is the natural logarithm of consumers' gross monthly income; *age* is the age of responder; *gender* is a dummy variable accounting for 1 if the respondent is male and 0 for female; *married* is a dummy variable accounting for 1 if the respondent is married and 0 otherwise; *retired* is a dummy variable accounting for 1 if the consumer is retired and 0 otherwise; *educaei* is a dummy variable accounting for 1 if the respondent has completed at least undergraduate studies and 0 otherwise; *enoughinc* is a dummy variable accounting for 1 if the responder indicates that his/her income is enough for paying the required expenditures per month and 0 otherwise; *inability* is a dummy variable accounting for 1 if the respondent has stated that, given the economic situation, he/she faces difficulty in financing monthly costs and 0 otherwise; *efuncert* is a dummy variable accounting for 1 if the respondent has stated that, given the economic situation, the high cost of borrowing and the high level of economic uncertainty affect her/his behaviour and 0 otherwise and *u* is the disturbance term.

However, based on methodology of Hung, Shang, and Wang (2012) it is also interesting to capture possible non-linearity relationships of covariates with respect to the dependent variable. Thus, Model II is also estimated where the dependent variable is the monthly expenditures per consumer as a percentage of monthly income. Specifically, the following model is estimated:

percentert = b₀ +b₁lnmincome + b₂age + b₃gender + b₄married + b₅retired + b₆educaei + b₇enoughinc + b₈inability + b₉efuncert + uᵢ

where *percentert* is a quantitative variable measuring the average monthly expenditures per consumer as a percent of monthly income. The rest of independent variables were explained above (Model I). In the next section, the results of the aforementioned methodological approach are presented in detail.

4. Empirical Results

In this section the results of the statistical and econometric analyses are presented. More analytically, by looking at the representation of the variables we can see the Athenian consumers' profile with respect to their recreation expenditures. It is of high interest to interpret the factors that affect these consumers' behaviour. Therefore, several remarkable results are obtained from the empirical estimations. "Table 1" summarizes the empirical results of the mentioned estimators. Statistically insignificant variables are omitted from the model. All the estimated coefficients of the explanatory variables presented in these models have the expected sign and are statistically considerable. Furthermore, it is essential to mention that after Heteroskedasticity tests (Breusch-Pagan, chi2~7.20, p-value=0.0073), standard errors were corrected based on White's Heteroskedasticity methodology giving robust - Heteroskedasticity standard errors.

Table 1. OLS estimators for average consumers' recreation expenditures (Model I) and for average consumers' recreation expenditures as a percentage of monthly income (Model II)

Covariates	Model I Estimated coefficients (t-statistic)	Model II Estimated coefficients (t-statistic)
constant	4,072*** (13,89)	0,687*** (3,73)
lnmincome	0,128*** (4,92)	-0,074*** (-2,89)
gender	0,243* (1,85)	0,030*** (2,62)
age	-0,047*** (-5,87)	-0,002*** (-4,03)
married	-0,338** (-2,14)	-0,014* (-1,67)
retired	-0,950*** (-2,65)	-0,002 (-0,11)
educaei	0,307** (2,18)	-0,005 (-0,50)
enoughinc	0,421*** (3,17)	0,019* (1,93)
inability	-0,241* (-1,84)	-0,009 (-0,75)
efuncert	-0,046 (-0,30)	-0,024* (-1,70)
R^2	23,2%	19%
F-statistic	23,2***	10,84***
N	745	600

***, ** and * indicate significance levels at 1%, 5% and 10% respectively.

Asymptotic robust – heteroskedasticity standard errors in parentheses.

As expected, demographic characteristics, economic parameters and the effect of economic crisis influence the consumers' behaviour with respect to their recreation expenditures. More specifically, income was estimated as a statistically significant variable at 1% level. The income elasticity that is illustrated by the coefficient of the variable - it is characterized as elasticity, as both the dependent and the independent variables are measured in logarithms - was estimated equal to 0.128 implying that an increase in income by 1% leads to an increase in recreation expenditures by 0.128% (Owen, 1971; Dardis *et al*., 1994; Cai, 1998; Hong *et al*., 1999; Inglehart, 1997; Fernández-Ballesteros *et al*., 2001; Chen, 2012). Statistically, this means that richer consumers spend more money on recreation expenditures. However, this relationship is non-linear based on the second model. Model II shows that, as income increases, consumers' recreation expenditures and consumers' percentage of total monthly income decrease.

Gender was also estimated as a statistically significant factor of recreation expenditures. More specifically, men spend more money on recreation activities than women. According to previous studies, this result could be explained by the fact that men spend more time outdoors (Fernández-Ballesteros *et al*., 2001; Wiley *et al*., 2000; Gladwell & Bedini, 2004). In particular, at 1% level of significance, we found that men spend at 24.3% more than women while they consume a higher percentage of their income on recreation activities compared with women. Age is one more contributor to consumers' recreation expenditures. Based on previous empirical studies (Klemmack & Roff, 1984; Searle & Jackson, 1985; Hong *et al.,* 1999; Fernández-Ballesteros *et al*., 2001; Chen, 2012) age is negatively related to recreation expenditures. Our results indicate that an increase in age by one year leads to a decrease in recreation expenditures by 4.7[2] percentage points at 1% level of significance. Moreover, retired consumers spend more time indoors implying lower recreation engagement and lower outdoor activity while they have lower earnings (Klemmack & Roff, 1984; Hong *et al.,* 1999; Fernández-Ballesteros *et al.,* 2001). Empirical results confirm these scenarios.

Results also indicate an existing relationship between family status and recreation expenditures. More specifically, married consumers spend less money on recreation activities compared with singles (Wright & Bondurant, 1970; Dardis *et al*., 1994). These results may be interpreted by the fact that family households spend more time and money on bringing up their children. By examining the effect of consumers' educational level, it appears that the effect is highly positive (Cai, 1998; Hong *et al*., 1999). The coefficient of education was estimated equal 0.307 signifying that consumers with a higher level of education spend more money on recreation activities than other consumers. In addition, we could mention that highly-educated people usually earn much more money than others; thus, they might consume more on recreation and pastime products and services.

Besides demographic factors, previous studies have also added psychological parameters as possible independent determinants of consumers' behaviour with regards to recreation activities (Klemmack & Roff, 1984; Manell & Dupuis, 1996). Especially, through the current economic crisis some parameters have gained more interest from scientific circles. Three variables that are related to consumers' behaviour are added into our econometric models; the consumers' feeling of inability to repaying their debts (inability), the consumers' feeling that their income is enough for continuing their previous lifestyle (enoughin) and the economic uncertainty due to the emergence of the current economic crisis (efuncert). Inability was estimated to be negatively related to recreation expenditures. Its coefficient is equal to -0.241, implying that this consumer category spends approximately 24.1% less expenditures on recreation activities than others. On the contrary, the feeling of safety with respect to consumers' economic situation leads them to be willing to pay more money for recreation activities. Economic uncertainty affects negatively but not significantly the level of recreation activities. However, based on Model II, economic uncertainty results in a decrease of recreation expenditures as a percentage of consumers' income.

5. Discussion and Conclusions

In this paper, we tried to analyze the determinants of the consumers' expenditure on recreation activities. It is obvious that each characteristic of socio-economic situation has changed the way consumers choose to purchase pastime goods and services. More specifically, current economic crisis has led to important changes in consumers' behaviour. Our empirical results suggested that recreation expenditures are influenced due to income. This result is intuitive and supported by

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[2] The exact estimation is 4.81 because age is not calculated in logarithms; thus its coefficient is characterized as semi-elasticity with respect to age.

previous research. Furthermore, it was estimated that expenses on recreation are positively affected by educational level but inversely determined by marital status, age, household size and gender.

One more but equally innovative result was the evidence that consumers saved money for self-insurance against uncertainty. Thus, we concluded that a significant precautionary component exists in the saving behaviour leading to lower expenses on recreation activities. However, further research is needed on the total examination of consumers' behaviour with respect to outdoor recreation. More specifically, it may be interesting to explore more determinants that could not be considered in this analysis due to data limitations, such as the relationship between different types of outdoor recreation and total expenditure. Indeed, a common view in previous literature is that several types of recreation activities have different potential and distributional effects (Boman *et al*., 2013). However, a general conclusion from this study is that policy measures should be tailored to the current economic situation and the socio-economic status of Athenian consumers.

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