The Determination of the Impact Level of Life Satisfaction, Ecological Perception and Emotional Intelligence on Participating in Recreational Outdoor Sports: Logit Analysis for Turkey Case

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Abstract: The aim of this research is to determine by using logit model, the impact level and direction of variables like ecological perception, emotional intelligence, gender, marital status, monthly income, age, education, occupation and life satisfaction level on participating in recreational outdoor sports.

Sampling group consists of Recreational Outdoor Sport participants like cyclists, mountaineers/rock climbers and hikers whose number is not determined exactly in Turkey and non-participant of any recreational outdoor sports. In this study, electronic questionnaire form which consists of demographics variables, Emotional Intelligence Scale, New Ecological Paradigm scale and Life Satisfaction Scale were used to collect the data. It has been sent to all members of clubs which are bound to Turkish Cycling Federation (TCF) and Turkish Mountaineering Federation (TMF) by using social media between the dates 1th November, 2011 - 31th March, 2012.

As a result of this study, it is determined that; being a man, having a high monthly income, being employed in private sector or self employed person or student increases the probability of participating in recreational outdoor sports. Furthermore, as age, life satisfaction level, the level of supporting the reality of ecological crisis, hegemony of nature, having positive emotional management increase, the possibility of participating in recreational outdoor sports increases too, and, as monthly income decreases, the possibility of participating in recreational outdoor sports decreases also.

***Key Words*:** Ecological perception, Emotional Intelligence, Life Satisfaction, Recreational Outdoor Sports, Logit Model

Introduction

In recent times, the negative affect of city life on individuals has increased individuals' in interests in nature, particularly in outdoor sports. The situation is generally a result of modernity, in connection the individuals' demands who want to be in nature in a way, when looked in the lens of the individuals, this situation constitutes and activity on the other hand, when looked in the lens of the recreation leaders and businesses, it constitutes potential for products and services (Ardahan ve Mert, 2012).

A lot of approaches have been used in the studies amid at explaining reasons why individuals demand or participate in Recreational Outdoor Sports (ROS). While Crandall (1980) claims that the personality and the situation of individual determine the reasons in participating in ROS, Levy (1979) tries to explain participation in ROS with behavior which is the result of interaction between social situations and personality. The best example of this is when a university student starts to dance or climbing, just because his/her friends do these activities. In addition, the existence of relation between recreational demands and the motivating factors which were put forward by Lawler (1973) and David's articles (1983) which are related to recreational experiences and which was accepted as base for

a lot of studies, then have been turned in to Recreation Experience Preference Scale by Manfredo, Driver and Tarrant (1996) in order to explain the structure of recreational need.

In addition, in order to explain why people participate in ROS; Ibrahim and Cordes (2002), "The Need Theory", Deci and Ryan (1985), "The Self-Determination Theory", Pintrich (2000), "The Achievement Goal Theory", Engeström, Miettinen and Punamaki (2003), "The Activity Theory", Knutson (1995), "The Personality Theory" have used. Apart from these, writers such as Bradshaw (1978), Mitchell (1983), Gattas, Roberts, Schmitz-Scherzer, Totarski and Vitanyi (1986) Daghfous, Petrof and Pons (1999) have put forward the there is a relation between the products individual buy and their life styles and values.

So far, plenty of studies relating recreational needs, the reasons of visiting nature the reasons of why individual participate in outdoor sports and why they do outdoor sports have been conducted. However, no studies have examined, besides gender, age, marital status, income, education, and profession, if life satisfaction, ecological sense and emotional intelligence affect participation in outdoor sports and activities or not. It is still not certain why individuals prefer participating in ROS.

The purpose of this study is to define unquestioned aspects of ecological perception and emotional intelligence in other studies and factors as gender, marital status, income, education level, occupation, affecting individuals' participation in ROS and individuals' life satisfactions as independent variables and examine if these factors affect individuals' participations in ROS or not by using logit model.

Materials and Method

This is a definitive research which defines unquestioned aspects of Ecological Perception and Emotional Intelligence (EQ) in other studies and factors as gender, marital status, income, education level, occupation, affecting individuals' participation in ROS and individuals' life satisfactions as independent variables and examine if these factors affect individuals' participations in ROS or not by using logit model.

The scope of study consists of the mountain climbers, rock climbers, cyclists, hikers, and individuals who have never done these sports. The numbers of individuals doing these sports are not defined exactly in Turkey. In this study sampling has been done and an electronic survey has been to send all members of Turkish Mountaineering Federation (MFD) and Turkish Cycling Federation between 1st December 2011 and 31st May 2012. All surveys (1181) which were filled and send back have been assessed. The sampling of study consists of individuals who participate in outdoor sports (n=1181, $\overline{X}_{age}$=35.82 ± 10.61) and who do not participate in outdoor sports (n=538, $\overline{X}_{age}$ =31.78 ± 11.47) the total number is 1719.

In the survey questionnaire form which was developed to collect suitable data, apart from finding out demographic characteristics of individuals who participate in activities such as mountain and rock climbing, cycling and hiking, in order to scale their emotional intelligence EQ scale which was developed by Chan (2004, 2006) and adapted into Turkish, NEP scale which was revised by Dunlap, Van Liere, Mertig and Jones (2000) and which was adapted into Turkish in Erdogan's study and articles that developed by Diener, Emmons, Larsen and Griffin have been used.

The variables used in this study are defined as follows:

Dependent Variable

POS : Participating in Outdoor Sports (If individual does outdoor sports it is, 1, if not, the value is 0)

Shadow (dummy) Variables

Gender: If individual is Male it is 1, if individual is Female value is 0
MS: Marital Status (If individual is single it is 1, if individual is married the value is 0)
Income2: If the monthly income is between 1001-2000 1, otherwise the value is 0.
Income3: If the monthly income is between 2001-3000 1, otherwise the value is 0.
Income4: If the monthly income is between 3001-4000 1, otherwise the value is 0.

Income5: If the monthly income is over 4000, 1, otherwise the value is 0.
Education2: If the education level is High school or equal, 1, otherwise the value is 0.
Education3: If the education level is University, 1, otherwise the value is 0.
Education4: If the education level is Post-Graduate, 1, otherwise the value is 0.
Profession1: If the job of individual is in private sector, 1, otherwise the value is 0.
Profession2: If the job of individual is in public sector, 1, otherwise the value is 0.
Profession3: If individual has his/her own place, 1, otherwise the value is 0.
Profession4: If individual is self-employed, 1, otherwise the value is 0.
Profession5: If individual is a student, 1, otherwise the value is 0.
Profession6: If individual is retired, 1, otherwise the value is 0.

Continues Variables

Age: The age of individual
LS: The Life Satisfaction Level of Individual
HH: The Level of Human Hegemony's superiority
EC: The level of believing in ecological crises
CN: The level of believing in capability of nature
HN: The level of supporting hegemony of nature
EA: The level of emotional assessment
ES: The level of emphatic sensitiveness
PEM: The level of positive emotional management
UEP: The level of utilization of emotions positively

The HH, EC, HN variables are the name of factors which were found by comparing NEP sense of participants and non-participants in outdoor sports, these variables are the result of correcting factor analysis in Ardahan's (2012) study and same set of data has been used. EA, ES, PEM, PEP are the name of factors which were found by comparing EQ of participants and non-participants in outdoor sports and the results have been reached by using correcting factor analysis.

In an econometric model if the dependent variable is binary the most used modeling methods are Logit and Probit. Even though there is a slight difference between these two methods relating probability density functions these two methods generally provide same results.

P_i is the probability of POS variable's taking 1 value, put it differently if it is defined as the probability of individual to participate in outdoor sports, $Li=P_i / (1-P_i)$ is defined as odds ratio and it is the individual's Logit value (Gujarati 2003). The Logit model used in this study is as follows:

$$L_i=P_i / (1-P_i)=\alpha_0 + \alpha_1 Gender_i + \alpha_2 MD_i + \alpha_3 Income2_i + \alpha_4 Income3_i + \alpha_5 Income4_i + \alpha_6 Income5_i + \alpha_7 Education2_i + \alpha_8 Education3_i + \alpha_9 Education4_i + \alpha_{10} Profession1_i + \alpha_{11} Profession2_i + \alpha_{12} Profession3_i + \alpha_{13} Profession4_i + \alpha_{14} Profession5_i + \alpha_{15} Profession6_i + \beta_1 LnAge_i + \beta_2 LnLS_i + \beta_3 LnHH_i + \beta_4 LnEC_i + \beta_5 LnCN_i + \beta_6 LnHN_i + \beta_7 LnEA_i + \beta_8 LnES_i + \beta_9 LnPEM_i + \beta_{10} LnUEP_i + u_i$$

In the equation, α_0 is constant term, α_i, $i\neq0$ are coefficients of dummy variables, β_j are coefficients of continues variables and u_i are error terms. Natural Logarithms of defined continues variables have been included in model. The estimated coefficients have been obtained by using "maximum likelihood" method. Variance inflation factors (VIF) have been calculated in order to find out if there is multicolinearity problem between continues variables. The biggest value of VIF is 2.71. This value is smaller than the top 10 value of high multicoliearity. As a result there is not a problem about multicolinearity. In order to prevent a possible heteroskedasticity problem the robust standard errors of estimated coefficients have been calculated.

Results

In this section the results of Logit model which were estimated by aforementioned will be discussed.

The results of Logit analysis to model the participation in outdoor sports have been given in Table-1. According to this chart the model is significant (Wald chi2(25)=268.51, Prob>chi2=0.000). The gender has a significant affect on participation in outdoor sports. According to model, if the gender of individual is male it increases the possibility of participation in outdoor sports (coefficient: 1.3591, p:0.000). The marital status does not have a significant affect on participation in outdoor sports. While having a low income does not have a significnt affect on participation in outdoor sports having high income has a significant affect on participation in outdoor sports. Having an income between 3001-4000 TL decreases the chance of participation in outdoor sports (coefficient: 0.4581, P: 0.095). However, having an income over 4000 TL increases the possibility of participation in outdoor sports (coefficient: O.5O16, P: 0.090). The education of individual has not got a significant affect on participation in outdoor sports. Having a job in private sector has a positive and significant affect on participation in outdoor sports (coefficient: 0.5873, P:0.040). Similarly, working as a self-employer has a significant affect on participation in outdoor sports (coefficient: 0.9806, P: 0.016). Furthermore, being a student increases the possibility of participation in outdoor sports (coefficient: 0.5277, P: 0.090). Belonging to other profession groups does not affect participation in outdoor sports significantly. Age has a significant affect on participation in outdoor sports. The older the individual get the bigger the possibility in participation in outdoor sports is (coefficient: 0.8748, P: 0.000). The level of LS has a significant affect on participation in outdoor sports. The higher the LS get the bigger the possibility in participation in outdoor sports is (coefficient: 0.8748, P: 0.000). The level of human hegemony's superiority has a negative and significant affect on participation in outdoor sports. The higher The HH gets the smaller the possibility in participation in outdoor sports get (coefficient: 0.6367, P: 0.007). The level of believing in Ecological Crisis has a positive and significant affect on participation in outdoor sports (coefficient: 0.9226, P: 0.003). Similarly the level of supporting hegemony of nature has a positive and significant affect on participation in outdoor sports (coefficient: 0.7013, P: 0.059). The level of positive emotional management (PEM) has a positive and significant affect on participation in outdoor sports (coefficient: O.9608, P: 0.015). The level of utilization of emotions positively (UEP) decreases participation in outdoor sports significantly (coefficient: 1.6667, P: 0.001). The level of believing in capability of nature (CN), The level of emotional assessment (EA) and The level emphatic sensitiveness (ES) do not have a affect on participation in outdoor sports.

Table 1: Logit Model For Outdoor Sport Participation

Variables	Coefficient	Robust St. Error	z	P-Value
Cons	-8.7494 ***	1.3445	-6.51	0.000
Gender	1.3591 ***	0.1294	10.50	0.000
MS	0.1141	0.1460	0.78	0.434
Income2	0.2149	0.1904	1.13	0.259
Income3	-0.1616	0.2152	-0.75	0.453
Income4	-0.4581 *	0.2746	-1.67	0.095
Income5	0.5016 *	0.2957	1.70	0.090
Education2	0.5651	0.4160	1.36	0.174
Education3	-0.1524	0.3991	-0.38	0.703
Education4	0.6193	0.4544	1.36	0.173
Profession1	0.5873 **	0.2854	2.06	0.040
Profession2	0.4372	0.3181	1.37	0.169
Profession3	0.2539	0.3271	0.78	0.438
Profession4	0.9806 **	0.4051	2.42	0.016
Profession5	0.5277 *	0.3113	1.70	0.090
Profession6	-0.3982	0.3539	-1.13	0.261
LnAge	1.6776 ***	0.3253	5.16	0.000
Ln LS	0.8748 ***	0.1996	4.38	0.000
Ln HH	-0.6367 ***	0.2349	-2.71	0.007
Ln EC	0.9226 ***	0.3071	3.00	0.003
Ln CN	0.4126	0.2845	1.45	0.147

Ln HN	0.7013 *	0.3714	1.89	0.059
Ln EA	0.5611	0.4386	1.28	0.201
Ln ES	-0.4268	0.4278	-1.00	0.319
Ln PEM	0.9608 **	0.3949	2.43	0.015
Ln UEP	-1.6667 ***	0.5183	-3.22	0.001
N	1719			
Wald chi2(25)	268.51			
Prob > chi2	0.000			
Pseudo R2	0.1544			
Log peseudolikelihood	-903.3304			

* Significant at 0.10 level, ** Significant at 0.05 level, *** Significant at 0.01 level

Discussion

In a lot of studies, it is claimed that gender has a positive affect on motivation on participation in recreational activities and it is asserted that because of the social habits, sub-culture expectations and structures which are supported by family and professions male are more active and relaxed about recreational preferences. Even though lately the gap between males and females has been getting thinner ROS is under hegemony of males (Ardahan and Lapa, 2010; Floyd, Nicholas, Lee, Lee ve Scoott, 2006; Henderson and Bialeschki, 1991; Lee, Scoott and Floyd, 2001; Wearing, 1999). This claim has been confirmed in this study.

So far any correlation between marital status and participation in ROS has been found. However, individuals who have meaningful and satisfied marriage are more inclined in participation ROS than others (Ardahan and Lapa, 2010; Kalkan, 2012; Kalkan and Ardahan, 2012). Results reached in this study are in line with this fact.

The professions of individual play significant role relating having time for participation in ROS and for interaction with other participators. Some of professions are more advantageous than others. For instance: compared to people who have jobs in public sectors, self-employed, housewife, retired, private sector employees because of managing their leisure times more affectively are more advantageous. Students are advantageous because of opportunities provided by school, getting affected and tendency. Ardahan and Lapa (2010), Kalkan (2012), Kalkan and Ardahan (2012) the results in these studies are in line with this study. In this respect, being employed in private sector, having a self-employed job and being a student are a determent factor in participation in ROS.

Similarly, age has significant affect on participation in ROS. Despite participating outdoor sports as an professional requires to be young since participation can occur irrespective of age even since the older people get the higher individuals' sensitiveness about health expectations get people want to be in nature much more because of pressure coming from friends and family, responsibilities, city life work (Kalkan, 2012; Kalkan and Ardahan, 2012; Ardahan, 2012c; Ardahan, 2012d. These discussions are completely in line with the results of this study.

In fact, the affect of LS on ROS is expected. Even the meaningful difference between participants and non-participants could be seen a sing of this. In these studies, Ardahan (2011), Ardahan and Mert (2012), Ardahan (2012b), Burnett (1994), Hilton (1992), McKenzie (2000), McRoberts (1994), Yerlisu Lapa, Ardahan and Yıldız (2010), it has been found that individual gain positive energy by participating recreational activities and in particular ROS. Given these results, it could be said by participating in ROS individuals raise their level of LS or in order to be positive-inclined persons individuals prefer participating in ROS. The higher the LS get the likelier the participation in ROS get is a significant result which supports previous studies.

Ecological sense which is the main topic of this study has an affect on participation in ROS or participating in ROS activities. NEP scale's sub-dimension Ecological crisis shows that there is and ecological crisis and it defines the faith that if it is not stopped it will ruin the Earth (Dunlap ve oth., 2000). The level of perception of the corresponding variable in Logit model has a positive affect on participation in ROS. In other words, it means that people who believe in the existence of ecological crisis that it will destroy the Earth will be participators in ROS. Non-participators have lower scores than participators in additional scores and this difference is significant statistically. Similarly, the capability of nature has a positive affect on participation in ROS which is sub-dimension in NEP scale which defines the belief that if man-made pollution lowers environment will renew itself. Like in

additional variable non-participators in ROS have lower scores than participators and the difference is meaningful in terms of statistic. When these variables have positive affect HH variable has negative affect even though it was expected otherwise. According to Human Hegemony sub-dimension of NEP scale, which expresses sooner or later humanity will find a solution to stop the ecological crisis, the higher the level of human hegemony gets the lower the participation gets (Erdoğan, 2009; Dunlap and oth. 2000). In other words, participators in believe that humanity cannot find a concrete solution for this problem. The non-participators have higher HH scores than participators and this difference is significant statistically.

The PEM variable in the model is sub-dimension of EQ which defines the durability of individual to struggle with difficulties, responsibilities and difficult situations. As Kalkan (2012), Kalkan and Ardahan (2012) define it, no wonder the spirit of combativeness and the presence of the feature to cope with challenges affects my success in ROS. In terms of EQ the value of PEM variable to be higher means that people can be more combative against these situations. In this it is expected that this value to be higher and has a positive affect. Result is in line with theoretical realities.

UEP variable which defines the level of utilization of emotions positively is the sub-dimension of EQ scale and this scale mostly defines the capability of people to solve problems and using emotional intelligence positively.

Even tough outdoor sports are a sport which is done with other participators it includes processes relating mental and physical performances. In particular, when looked how the participators define their characteristics and seeing themselves inadequate can turn UEP variable into a negative variable in the model. When the value of UEP assessed in terms of participators and non-participators in ROS even though the difference between these two groups is insignificant statistically the fact that non-participators have higher value supports this result.

In conclusion, with Ecological Sense and Emotional Intelligence demographic variables such as gender, marital status, income, age, education, professions and level of life satisfactions of individuals has been defined as independent variable and it has been questioned if these variable have affect on participation in outdoor sports by using Logit Model. If the individuals are male, students, have high income, having a job in private sector, it means they have higher chance to participate in outdoor sports. It has been reached that the higher the age, LS, the level of believing in ecological crisis, The level of supporting hegemony of nature, the level of positive emotional management get the more inclined people to participate in outdoors sports become and the higher the Level of Human Hegemony's superiority and the level of utilization of emotions positively get and the lower the income get the smaller the chance to participate in outdoor sports get.

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