The Validity and Reliability of Motivational Factors Scale and the Benefits Scale of Participating in Mountaineering Activities for Turkish Population

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ABSTRACT

There are two main aims of this study; first; to define the validity and reliability of "the Motivational Factors Scale for participating in recreational Mountaineering activities -MFSM"; and "the Benefits Scale of participating in Mountaineering activities - BSM" for Turkish population; second; to find out the impacts of MFSM on BSM. In this study, sampling has been applied and an electronic questionnaire form has been sent to all participants. As a result, the MFSM for participating in recreational mountaineering activities, the BSM of participating in mountaineering activities were reliable and valid in the estimation of the motivational factors and benefit items of joining in mountaineering for the Turkish population. A significant regression model was found between MFSM and BSM.

Keywords: *Validity, Reliability, Motivational Factors, Benefit Items, Mountaineering*

INTRODUCTION

In the last four decades, the reasons and the benefits of participating in outdoor activities were the subject of many studies and the researchers tried to explain these factors by using different approaches. An outdoor activity is a recreational product purchased or produced at the time by the participants (Turgut, 2012). The reasons for purchasing this product are affected by some internal and/or external factors and the benefits of participating in outdoor sports can be defined as a decision making process (Kalkan & Ardahan, 2012). Like industrial goods and consumer goods, recreational goods and services also have the same life cycle. One can meet this product through self factors or some other external factors like a friend or an advertisement etc., and then decide to try it on, which is sometimes the most important step towards the next trial, and if they have a good experience, they will continue to experience/consume it. In the end, this process creates loyalty to the product, the brand and the business (Unal, Can & Deniz, 2006). Loyalty process is defined in recreation as a recreational loyalty or a hobby. This usually takes a long time in a person's life and it usually becomes a life style.

There are basically two main aims of this study; first; to define the validity and reliability of "the Motivational Factors Scale for participating in Mountaineering activities -MFSM"; and "the Benefits Scale of participating in

Mountaineering activities - BSM" for Turkish population; second; to find out the regression models between MFSM and BSM.

Literature Review and Conceptual Framework

In general activities done outdoors, particulary outdoor sports can be defined as leisure time activities or outdoor activities or outdoor sports which create interaction between participants and nature, and activities which have a positive effect on individuals' health, spiritual and social benefits (Ibrahim & Cordes, 2002). There are two types of outdoor activities or outdoor sports done outdoors; first, recreational outdoor activities and sports, second, professional outdoor activities and sports.

Outdoor activities are a total of activities which are done on the sea, earth, air, ice and snow. Some examples of these activities are picnicking, mountaineering, rock climbing, hiking, bird watching, upland festivals, trainings in nature, water activities, parachuting, flying kites and so on (Ardahan, 2011). The characteristics of outdoor sports are different from other sports done indoors. Outdoor activities involve high risks, excitement, adventure feelings and require high concentration for the participants. As far as freedom is concerned, outdoor sports are very successful in providing different ways of life (Simsek, 2010).

As a well-known outdoor sports, Mountaineering attracts more and more people day by day. Considered as one of the main outdoor sports, mountaineering, to reach the summit or a defined point of the mountain, integrates both climbing and hiking up, and it can be done on regular terrain as well as rocky areas and even in icy or snowy slopes. Mountaineering consists of a combination of a series of techniques and requires a highly technical talent, technical information, technical equipment, physical and mental performance and fitness ([1]; Ardahan, 2012). In other words, The UIAA (Union Internationale des Associations d'Alpinisme) describes mountaineering as a sport exercised to reach the summit of the mountains ([2]). Since there are rocky, snowy and icy paths on the way to the summit, people climbing mountains should have knowledge and experience about rock climbing, snow climbing and ice climbing. Since climbing is an outdoor sport which is exercised on earth, ice and snow, it is examined in subtitles such as mountaineering, traditional rock climbing, sportive rock climbing and ice climbing (famous ones are done at frozen falls and icebergs) (Ardahan, 2011; Kalkan, 2012).

Outdoor activities require organized and/or wild areas and can be grouped into two parts as nature based and nature related. Mountaineering is one of the nature based outdoor activities and involves adequate physical and mental qualifications, physical and mental fitness, and knowledge of exercising and how to use equipments (Ardahan & Mert, 2012). Furthermore, it requires a group relation such as club membership and/or friend/family relationship (Kalkan, 2012).

A major reason of the advent of outdoor recreation is modernity. In many western countries including Turkey, modernity accompanies the growing industrialization of societies. Once a part of traditional life, such activities as walking, hunting and fishing, became sports and outdoor recreation in time (Ardahan & Mert, 2012). As industrialization and urbanization increased, so did the demand for outdoor recreation and outdoor sports (Aslan, 1993). In addition to

[1] - Retrived November 16, 2011 from http://www.wisegeek.com/what-is-mountaineering.htm

[2] - Retrived November 16, 2011 from http://www.theuiaa.org/

this, the increasing facilities in transportation and communication and the increase in free time, population, mobilising posibilities, technological changes and instruments, advertising and propaganda, education level, cultural changes, environmental awareness, changing health awereness and needs, entertainment, spread of recreation centers and recreation businesses have all contributed to the demand for outdoor recreation and outdoor sports as well (Kalkan, 2012). Besides, getting away from routine and crowd is another significant factor that influences participating in all outdoor recreations (Sağcan, 1986). Also, the inclination towards outdoor sports has risen because of geting away from responsibilities and family, increased affordibility, broader coverage of adventure sports in media, reasonable costs of equipment, changing traditional ways of life and meaning of individual, family and social perception (Ardahan, 2011).

For socio-economic and personal benefits, the reason why people want to participate in outdoor recreation especially mountaineering and why people demand for these recreational products and activities (the main scope of this study) is vitally important to understand. Maybe for now, it does not have a big share in Turkey and/or many other developing countries' economies, but in the USA, outdoor recreation has already created big economic benefits. Outdoor recreation is a larger and more critical sector of the American economy than most people realize. Outdoor Industry Association in the USA (2012) declared the economic benefits of outdoor sports as; (a) 6.1 million American Jobs, (b) $646 billion in outdoor recreation spending each year, (c) $39.9 billion in federal tax revenue, (d) $39.7 billion in state/local tax revenue, (e) $120.7 billion outdoor recreation product sales (apparel, footwear, equipment, vehicles, accessories, services etc.), (f) $524.8 billion trips and travel- related spending, (g) $646 billion direct sales.

Mountaineering and outdoor recreation can also be defined as a field of tourism and keep a big economic potential like export possibilities just as in Nepal and Mt. Ararat in Turkey. In addition to this; in many Europan countries, there are summer courses in the cirrucula from primary schools to universities in order to experience outdoor recreation fully (Kalkan, 2012). In many developed countries, mountaineering and outdoor recreation can be thought as a life style. It affects and it is affected by many other decision making processes for purchasing this recreational good.

In the last four decades, the reasons for participating in outdoor activities and the social and personal benefits of participating in them have drawn attentions of scientists. While Crandall (1980) claims that the personality and conditions make a person participate in outdoor activities, Levy (1979) claims that it is the interaction between personality and social conditions which encourages someone to take part in activities. Driver (1976, 1983), Driver and Knopf (1977) and Manfredo, Driver and Tarrant (1996) used the internal and external motivational factors to explain why people participate in outdoor activities and the benefits that they gain. Some others try to explain why people participate in outdoor activities by using Needs Theory (Ibrahim & Cordes, 2002), Self Determination Theory (Deci & Ryan, 1985), the Achievement Goal Theory (Pintrich, 2000), Activity Theory (Engeström, Miettinen & Punamaki, 2003), and Personality Theory (Knutson, 1995).

Scientists who focused on motivational factors concluded that needs motivate people to act. This was firstly claimed by Maslow, who grouped it in detail and defined it as primary and secondary needs. The primary needs are considered to be food, security, warmth, belonging and mental fitness. Secondary needs are success, being with friends, creativity, curiosity, risk, getting rid of ego and building self (Ibrahim & Cordes, 2002). The theoretical structure of motivation comes from Lawler's (1973) expectancy-value model. In this model Lawler defines that human action is driven by physiological and psycho-social outcomes and behavior is a rational process of these outcomes. The relationship between motivation and behavior was used by many researchers to explain "why" a person participates in

leisure and outdoor recreation. The most famous ones are Driver and his colleagues (Driver, 1976, 1983; Driver & Brown, 1986; Driver & Knopf, 1977; Driver & Tocher, 1970; Manfredo et al., 1996). Researchers have also referred to these factors as "leisure needs" that has "pull" affect (Kyle, Absher, Hammit & Cavin, 2006). Driver (1983) developed the master lists of items for recreation experiences scale and domains, later, Manfredo, Driver and Tarrant (1996) used these items to define the factors affecting a person to take part in leisure. This can be explained as a recreation experience. Driver and colleagues developed Recreation Experience Preference (REP) scale, to understand the physiological and psycho-social outcomes.

According to Driver's (1983) study, the factors, domains and core statements can easily be found out in details. These are ; a) Achievement/ Stimulation (a1- Reinforcing/Self-Image, a2- Social Recognition, a3- Skill Development, a4- Competence Testing, a5- Excitement, a6-Endurance, a7-Telling Others), b) Autonomy/Leadership (b1- Independence, b2- Autonomy, b3- Control-Power), c) Risk Taking, d) Equipment, e) Family Togetherness, f) Similar People (f1- Being With Friends, f2- Being With Similar People), g) New People (g1- Meeting New People, g2- Observing Other People), h) Learning (h1- General Learning, h2- Exploration, h3- Geography of Area, h4- Learn About Nature), i) Enjoy Nature (i1- Scenery, i2- General Nature Experience), j) Introspection (j1- Spiritual, j2- Introspection), k) Creativity, l) Nostalgia, m) Physical Fitness, n) Physical Rest, o) Escape Personal-Social Pressures (o1- Tension Release, o2- Slow Down Mentally, o3- Escape Role Overloads, o4- Escape Daily Routine), p) Escape Physical Pressure (p1-Tranquility, p2- Privacy, p3- Escape Crowds, p4- Escape Physical Stressors), q) Social Security, r) Escape Family, s) Teaching-Leading Others (s1- Teaching-Sharing/Skills-Sharing Knowledge/Directing Others, s2- Leading Others- Sharing Knowledge/Directing Others), t) Risk Reduction (t1- Risk Moderation, T2- Risk Avoidance), and U) Temperature. These are the main motivational factors to find out the main reason why people participate in leisure (Manfredo et al. 1996). But later some other factors were added to these explained by needs theory. These factors were explained in a study conducted in Illinois University relating to primary and secondary needs are "(a) nature love, (b) the need for physical activity, (c) creativity, (d) relaxation, (e) realization of self, (f) meeting a famous person (if a known rock climber or somebody else is participating in the event, it draws people who want to meet him\her), (g) the desire to be recognized, (h) motivating and inviting factors (e.g. a nice waterfall attracts people), (i) gaining a social status, (j) self realization, (k) the desire for success, (l) rivalry (within and out), (m) spending time and (v) intellectual aesthetics" (Ibrahim & Cordes, 2002; Ardahan & Lapa, 2010; Kalkan & Ardahan, 2012). Kyle et al. (2006) claimed that motivational factors, Modified Involvement Scale (MIS), in addition to the factors explained above; a) Bonding (a1- to bring family/friends closer together), b) Learning (b1- to develop one's knowledge about the area, b2- to learn more about nature, b3) to learn about the natural history or ecology of the area). According to another study done by Ardahan (2011), which represents "The Profile of the Turkish mountaineers and rock climbers" some extra reasons were added to the motivational factors explained above. These are "(a) physical and mental fitness, (b) physical and mental rehabilitation, (c) to improve oneself and to learn new skills, (d) tempting things in nature, (e) to be a fighter and to revolt, (f) to have new social relations and (g) to make new friends, (h) to observe people, (i) to improve social status and take social power, (j) recognition and to be recognized, (k) to nonnock and get out of boredom, and (l) to meet a celebrity in this activity.

Benefits of exercising outdoor activities are "(a) learning group dynamics, (b) gaining self confidence, (c) making individual decisions, (d) learning risk management, (e) taking responsibility of self and others, (f) improving physical and mental fitness, (g) feeling healthy, (h) making friends and socialization" (Ibrahim & Cordes, 2002; McKenzie, 2000; Yerlisu Lapa, Ardahan & Yıldız, 2010). According to another study done by Ardahan (2011), the benefits of Turkish

mountaineers and rock climbers who attend outdoor activities are "(a) feeling happier, healthier and more powerful, (b) feeling relaxed and refreshed, (c) feeling the nature deeply, (d) getting physical and mental fitness, (e) learning and improving skills, (f) getting environmental consciousness, (g) meeting new people, (h) spending time with friends, (i) gaining self-confidence, (j) belonging to a group, (k) feeling more important, and (l) spending time with family". In another example which represents the results of "The Profile of Turkish Trekkers, the reasons why they attend outdoor activities" reported by (Kalkan, 2012) are mainly the same motivational factors listed in Ardahan (2011), Manfredo et al. (1996), McKenzie (2000), and Yerlisu Lapa et al. (2010). As seen, the needs and the benefits of participants are mainly common in Turkey and other countries.

There must be a relationship between the reasons for participating in mountaineering activities and benefits of attending them. In many studies, reasons and benefits were studied seperately; i.e only reasons or benefits are examined rather than their relationship, which is the main scope of the current study.

METHOD

The scope of this study is restricted to Turkish mountaineers.

Sampling: The Sampling group of this study consists of 426 mountaineers (n = 426, $\overline{X}_{age}$ = 36.12 ± 10.10). The exact number of mountaineers in Turkey is not defined. In this study, random sampling has been applied and an electronic questionnaire form has been sent to all members of mountaineering clubs under Turkish Mountaineering Federation. All the received survey answers have been assessed.

The tool of gathering data and variables: An electronic questionnaire form developed to gather data suitable for the purpose of this study was sent to all members of mountaineering clubs under Turkish Mountaineering Federation. Suitable for the purpose of this study, this form was sent to participants between 1st November, 2011-31st March, 2012. The form includes demographic questions and two test batteries, which have 21 factors motivating people to participate in mountaineering activities and 14 benefits gained during these activities. The majority of MFSM items were taken from the studies of Driver (1983) and Manfredo et al. (1996) and the rest of the items were taken and supported from the studies of Ardahan and Lapa (2010), Ibrahim and Cordes (2002), Kalkan (2012), Kalkan and Ardahan (2012), Kyle et al. (2006) and Yerlisu Lapa et al. (2010). A five-point Likert scale was used and the range covers (1: definitely no, 5: definitely yes). All measures were in Turkish and linguistically adapted to the cohort.

Before performing an exploratory factor analysis (EFA) on the 21 items measuring perceived importance of MFSM, two items were excluded from further analyses due to low initial communalities (<0.40) and on the 14 items measuring perceived importance of BSM, two items were excluded from further analyses due to low initial communalities (<0.40). The factorability of the correlation matrix of the remaining 19 items for MFSM's Kaiser–Meyer–Oklin value was 0.809 and the remaining 12 items for BSM' Kaiser–Meyer–Oklin value was 0.807. The two values were over the recommended value of 0.6 (Kaiser, 1974), and has a statistically significant value for Bartlett's Test of Sphericity.

Varimax rotation was performed on 19 items for MFSM and 12 items for BSM. The rotated results were given in Table-1 for MFSM, in Table-3 for BSM with all factors having several strong factor loadings and all variables having loadings substantially from only one factor. Based upon the content of the items clustering on each factor, the five

motivational factors to participate in mountaineering categories and three benefit categories were obtained.

The reliability of each factor estimated by Cronbach's alpha was the five factors for MFSM (total Cronbach's Alpha is 0.822) had eigenvalues of 2.576 (**Socialization -** items; C07, C08, C09, C10, C11, C13 and C19), 2.527 (**Competition -** items; C14, C15 and C16), 2,488 (**Healthy –** items; C05, C17, C18), 1.893 (**Escape –**items; C03 and C04) and 1.752 (**Relaxing –** items; C01, C02, C06 and C12), the three factors for BSM (total Cronbach's Alpha is 0.852) had eigenvalues of 3.173 (**Got physically and mentally healthy and relaxing –** items; B01, B02, B03, B08 and B12), 2.737 (**Socialization and self-confidence** - items; B06, B07, B09, B10 and B11) and 1.994 (**Use and develop new Skills- items-** B04 and B05)

RESULTS

We used EFA method to determine sub-dimensions of factors which motivate persons to attend mountaineering activities. For this, we added 19 cause items and performed the Bartlett test of sphericity (Chi-square=2387, P=0.000) and calculated Keiser-Meyer-Olkin measure of sampling adequacy (0.809>0.5) and saw that EFA method is applicable to our data set. As a result of this analysis with varimax rotation, we got five cause components that account for 59.136% of the total variance. Cause items, given in Table-7, including factor components, factor loadings, communalities, descriptive statistics for each item (means and standard deviations), Cronbach's Alpha values for the components and all the scale and all the other EFA results for causes are given in Table-1. Five factor components are named as follows;

Cause1: **"Socialization"** factor is the physical and emotional relation created between the participant and the others before/during/after the activity and it includes "recognition and to be recognized", "to be with friends", "to be with family", "to meet the celebrity in this activity", "to help others and take social responsibility", "to have new social relations and to make new friends", and "to improve social status" and "take social power". Cronbach's Alpha coefficient = 0.758.

Cause2: **"Competition"** factor includes internal and external competition process and includes; "to be a fighter and to revolt", "to achieve and compete with oneself and others" and "to achieve self realization". Cronbach's Alpha coefficient = 0.767.

Cause3: **"Health"** factor explains physical and mental dimensions of health and includes; "to get physical and mental rehabilitation", "to get physical and mental wellness," and "to get physical and mental fitness". Cronbach's Alpha coefficient = 0.744.

Cause4: **"Escape"** factor explains escaping from something, somebody and/or something which has a negative effect on wellness and includes; "to escape from family" and "to escape from responsibility". Cronbach's Alpha coefficient = 0.749.

Cause5: **"Relaxing"** factor defines all the things which give physical and mental wellness and includes; "to feel relaxed and refreshed", "tempting things in the nature", "to escape from routine and crowd", and "nature love and the desire to be in nature". Cronbach's Alpha coefficient = 0.543.

Table-1: Factor Analysis for causes

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				0,809			
Bartlett's Test of Sphericity	**Approx. Chi-Square**			**2387**			
	df			**171**			
	Sig.			**0.000**			
	Components and Factor Loadings						
Items	**Cause 1**	**Cause 2**	**Cause3**	**Cause 4**	**Cause 5**	**Commu-nalities**	**M ± SD**
C10	**0.678**					**0.541**	**2.00±1.01**
C19	**0.393**					**0.574**	**3.74±1.03**
C09	**0.660**					**0.553**	**2.09±0.99**
C08	**0.639**					**0.546**	**1.59±0.79**
C11	**0.617**					**0.577**	**3.05±1.13**
C07	**0.560**					**0.542**	**3.27±1.13**
C13	**0.525**					**0.531**	**2.30±1.09**
C15		**0.820**				**0.696**	**3.73±1.14**
C16		**0.742**				**0.642**	**3.18±1.21**
C14		**0.739**				**0.630**	**3.69±1.09**
C18			**0.755**			**0.681**	**4.23±0.87**
C17			**0.688**			**0.610**	**4.25±0.84**
C05			**0.680**			**0.506**	**4.30±0.75**
C03				**0.831**		**0.730**	**1.65±0.91**
C04				**0.824**		**0.697**	**1.52±0.87**
C06					**0.616**	**0.526**	**3.90±0.95**
C12					**0.588**	**0.602**	**3.86±0.99**
C02					**0.580**	**0.556**	**3.78±1,19**
C01					**0.547**	**0.495**	**4.62±0.65**
Cronbach's Alpha:	**0.758**	**0.767**	**0.744**	**0.749**	**0.543**		
Rotated Eigenvalues:	**2.576**	**2.527**	**2.488**	**1.893**	**1.752**	**For all scale, Cronbach's Alpha=0.822**	
Rotated variance (%):	**13.557**	**13.301**	**13.095**	**9.961**	**9.222**		
Rotated cumulative variance (%):	**13.557**	**26.858**	**39.953**	**49.914**	**59.136**		

Mean values of the items included in each component are calculated and five variables, as CS1, CS2, CS3, CS4 and CS5, were obtained as the proxies for the cause components. After that, Pearson's correlations between each cause items and cause factor components were calculated. The highest correlation value of an item occurs in the real cause factor, but also, it has some other correlation values with other cause factors. For example, C11 (to help others and take social responsibility) in Cause1 (**Socialization)** has significant correlations with all other cause components;

Competition, Healthy, Escape, and Relaxing. These results can be seen in Table-2.

Table-2: Pearson Correlations between cause items and cause components

	CS1	CS2	CS3	CS4	CS5
C10	0.68**	0.28**	0.16**	0.22**	0.10*
C19	0.59**	0.19**	0.39**	0.01	0.20**
C09	0.53**	0.00	0.07	0.07	0.12*
C08	0.57**	0.25**	0.03	0.32**	0.06
C11	0.71**	0.29**	0.29**	-0.01	0.34**
C07	0.71**	0.32**	0.32**	0.15*	0.26**
C13	0.68**	0.44**	0.23**	0.26**	0.25**
C15	0.28**	0.85**	0.25**	0.16**	0.28**
C16	0.37**	0.83**	0.26**	0.18**	0.21**
C14	0.35**	0.80**	0.27**	0.12 *	0.36**
C18	0.32**	0.33**	0.87**	0.01	0.43**
C17	0.30**	0.25**	0.85**	-0.02	0.45**
C05	0.22**	0.18**	0.71**	0.04	0.33**
C03	0.22**	0.15**	-0.02	0.90**	0.04
C04	0.15**	0.18**	0.04	0.89**	-0.02
C06	0.26**	0.18**	0.42**	-0.04	0.71**
C12	0.26**	0.37**	0.34**	-0.07	0.66**
C01	0.16**	0.02	0.34**	-0.17**	0.56**
C02	0.13**	0.25**	0.24**	0.21**	0.69**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

As seen in Table-2, the correlation values of the items grouped in the relevant sub-dimensions are the highest and the most significant. These results confirm correct sub-dimensions after EFA.

All analyses above are done for benefit items of mountaineers. 12 benefit items given in Table-7, are included in EFA. First, Bartlett test of sphericity (Chi-square=2470, P=0.000) was performed and Keiser-Meyer-Olkin measure of sampling adequacy (0.807>0.5) was calculated and our data set is decided to be applicable to EFA. As a result of EFA with varimax rotation, three benefit components that account for 65.871% of total variance were obtained. Benefit items included factor components, factor loadings, communalities, descriptive statistics for each item (means and statandart deviations), Cronbach's Alpha values for the components and all scale and all the other EFA results for the benefits are given in Table-3. The three benefit factor components are named as follows:

Benefit1: **"Got physically, mentally healthy and relaxing"** factor includes; "feeling happier, healthier and more powerful", "feeling relaxed and refreshed", "getting physical and mental fitness" and "feeling the nature deeply". Cronbach's Alpha coefficient = 0.842.

Benefit2: **"Socialization and self-confidence"** factor includes; "feeling more important", "belonging to a group", "spending time with friends", "gaining self-confidence", and "spending time with family". Cronbach's Alpha coefficient = 0.775.

Benefit3: **"Use and develop new Skills"** factor includes; "learning new skills", and "improving skills". Cronbach's Alpha coefficient = 0.890.

Table-3: Factor Analysis for benefits

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				0,807	
Bartlett's Test of Sphericity		Approx. Chi-Square		2470	
		df		210	
		Sig.		0.000	
	Components and Factor Loadings			Commu-	
Items	Benefit1	Benefit2	Benefit3	nalities	M ± SD
B02	0.872			0.806	4.64±0.59
B03	0.862			0.794	4.56±0.64
B01	0.858			0.748	4.65±0.59
B08	0.646			0.567	4.43±0.68
B12	0.495			0.387	4.45±0.72
B07		0.755		0.644	3.36±1.19
B06		0.752		0.660	3.73±1.09
B09		0.702		0.572	4.02±0.85
B11		0.628		0.601	4.02±0.95
B10		0.609		0.424	2.37±1.14
B05			0.876	0.862	4.30±0.73
B04			0.847	0.838	4.45±0.72
Cronbach's Alpha:	0.842	0.775	0.890	For all scale, Cronbach's Alpha=0.852	
Rotated Eigenvalues:	3.173	2.737	1.994		
Rotated variance (%):	26.444	22.810	16.616		
Rotated cumulative variance (%):	26.444	49.255	65.871		

Mean values of the benefit items included in each benefit components were calculated and three variables, as BF1, BF2 and BF3, were obtained as the proxies for the benefit components. After that, Pearson's correlations between each benefit item and benefit factor components were calculated. The highest correlation value of an item occurs in the real benefit factor, but it also has some other correlation values with other benefit factors. These results can be seen in Table-4.

Table-4: Pearson Correlations between benefit items and benefit

	BF1	BF2	BF3
B02	0.85**	0.31**	0.43**
B03	0.86**	0.34**	0.43**
B01	0.81**	0.24**	0.33**
B10	0.76**	0.44**	0.37**
B14	0.67**	0.39**	0.36**
B09	0.33**	0.81**	0.37**
B08	0.33**	0.80**	0.40**
B11	0.40**	0.72**	0.36**
B13	0.46**	0.75**	0.47**
B12	0.14**	0.57**	0.11*
B06	0.44**	0.44**	0.95**
B05	0.49**	0.44**	0.95**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

As seen in Table-4, the correlation values of the items grouped in the relevant sub-dimensions are the highest and the most significant. These results confirm correct sub-dimensions after EFA.

Some descriptive statistics for the cause and benefit components can be seen in Table-5

Table-5: Descriptive statistics of components

	N	Mean	Std. Deviation	Minimum	Maximum
BF1	426	4.55	0.50	1.40	5.00
BF2	426	3.50	0.76	1.00	5.00
BF3	426	4.29	0.69	1.00	5.00
CS1	426	2.58	0.66	1.00	5.00
CS2	426	3.53	0.95	1.00	5.00
CS3	426	4.26	0.67	1.00	5.00
CS4	426	1.58	0.79	1.00	5.00
CS5	426	4.04	0.63	1.00	5.00

To find out the impact of the cause components on the benefit components, the regression equations were given below:

$$BF1 = \alpha_1 + \beta_1 CS1 + \beta_2 CS2 + \beta_3 CS3 + \beta_4 CS4 + \beta_5 CS5 + u_1 \quad (1)$$

$$BF2 = \alpha_2 + \beta_6 CS1 + \beta_7 CS2 + \beta_8 CS3 + \beta_9 CS4 + \beta_{10} CS5 + u_2 \quad (2)$$

$$BF3 = \alpha_3 + \beta_{11} CS1 + \beta_{12} CS2 + \beta_{13} CS3 + \beta_{14} CS4 + \beta_{15} CS5 + u_3 \quad (3)$$

In these equations, α_i are constant, β_i are regression coefficients and u_i are disturbance terms. To estimate the coefficients of the equations, ordinary least square (OLS) estimators were used. First, the presence of heteroskedasticity was checked out and Breusch-Pagan/Cook-Weisberg test was performed and Chi^2=285.57, P>Chi^2=0.000 for equation-1, Chi^2=21.43, P>Chi^2=0.000 for equation-2 and Chi^2=34.01, P>Chi^2=0.000 for equation-3 were obtained. As a result of these tests, the null hypothesis of constant variance for all models were rejected. So, we computed robust standard errors of the coefficients because of heteroskedasticity in each model. After that, we checked possible multicolinearity problem and calculated variance inflation factors (VIF) for each independent variable in the models and found that maximum VIF value is 1.43 not higher than the value 10, which is the upper limit of high multicolinearity (Ardahan & Mert, 2012). Finally, it was assumed that disturbances are normally distributed because of the large sample sizes. If sample size is large, one can use normal distribution for OLS estimates asymptotically even if disturbances are not normal by relying on the Central Limit Theorem (Ardahan & Mert, 2012).

The results of regression models are given in Table-6. As seen in the Table, all three models are significant (F=13.66, P=0.000 for the model of BF1, F=37.20, P=0.000 for the model of BF2 and F=11.96, P=0.000 for the model of BF3). The variable CS1 has positive and significant effects on BF2 and BF3 (Coef.=0.6440, P=0.000 for BF1 and Coef.=0.1712, P=0.004 for BF3) while it has no effect on BF1. The higher the CS1 is, the higher the BF2 and the BF3 are. The variable CS2 has positive and significant effects only on BF3 (Coef.=0.1178, P=0.005 for BF3). That is, increasing the CS2 increases the BF3. The variable CS3 has positive and significant effects on BF1 and BF3 (Coef.=0.3084, P=0.000 for BF1 and Coef.=0.1623, P=0.037 for BF3). Its effect on BF2 is insignificant. The variable CS4 has negative and significant effects on all benefit components (coef.=-0.0922, P=0.002 for BF1, Coef.=-0.0869, P=0.011 for BF2 and Coef.=-0.0768, P=0.059 for BF3). When the CS4 level gets higher, all benefit levels decrease. Finally, the variable CS5 is positively

significant for only BF1 (Coef.=0.1931, P=0.000). The higher the CS5 is, the higher the BF1 is. It is insignificant for the other benefit components.

Table-6: Regression models of benefit components

	BF1			BF2			BF3		
	Coef.	Robust St. Err.	P	Coef.	Robust St. Err.	P	Coef.	Robust St. Err.	P
Cons.	2.4521 ***	0.3026	0.000	1.6744 ***	0.3240	0.000	2.7092 ***	0.2918	0.000
CS1	0.0159	0.0322	0.619	0.6440 ***	0.0582	0.000	0.1712 ***	0.0588	0.004
CS2	0.0293	0.0268	0.275	0.0576	0.0415	0.166	0.1178 ***	0.0420	0.005
CS3	0.3084 ***	0.0657	0.000	-0.0013	0.0769	0.986	0.1623 **	0.0776	0.037
CS4	-0.0922 ***	0.0293	0.002	-0.0869 **	0.0341	0.011	-0.0768 *	0.0406	0.059
CS5	0.1931 ***	0.0511	0.000	0.0260	0.0771	0.736	0.0382	0.0722	0.597
N	426			426			426		
F(5,420)	13.66			37.20			11.96		
Prob.	0.000			0.000			0.000		
R^2	0.37			0.34			0.15		
* significant at .10 level, ** significant at .05 level, *** significant at .01 level									

Table-7: Causes and Benefits Items

C01- nature love and the desire to be in the nature
C02- to escape from routine and crowd
C03- to escape from family
C04- to escape from responsibility
C05- to get physical and mental fitness,
C06- to feel relaxed and refreshed
C07- to have new social relations and to make new friends
C08- to meet the celebrity in this activity
C09- to be with family
C10- to recognition and be recognized
C11- to help others and take social responsibility
C12- tempting things in the nature
C13- to improve social status and take social power
C14- to achieve self realization
C15- to be a fighter and to revolt
C16- to achieve and compete with oneself and others
C17- to get physical and mental wellness,
C18- to get physical and mental rehabilitation
C19- to be with friends
B01- feeling happier
B02- feeling healthier and more powerful
B03- feeling relaxed and refreshed
B04- improving skills
B05- learning new skills
B06- belonging to a group
B07- feeling more important
B08- getting physical and mental fitness
B09- spending time with friends
B10- spending time with family
B11- gaining self-confidence
B12- feeling the nature deeply

DISCUSSION

This paper introduces the Motivational Factors Scale for participating in Mountaineering activities and the

Benefits Scale of these activities and regression models of benefit components.

The sub-dimension of MFSM can be explained by the motivation theory. All five factors are included in Needs Theory([3]). Some factors need to be explained by using one or more sub-dimensions of Needs Theory. While Health, Escape and Relaxing can be thought in Physical Needs sub-dimension, Socialization falls into Belonging and Self-actualisation sub-dimension, and Competition and Escape can be considered in Esteem and Self-actualisation sub-dimension. On the other hand, the internal motivational factors occur in the following items; "to feel relaxed and refreshed, to be with friends, to be with family, to help others and take social responsibility, to have new social relations and to make new friends, to achieve and compete with oneself, to achieve self realization, to get physical and mental rehabilitation, to get physical and mental wellness, and to get physical and mental fitness, nature love and the desire to be in the nature, and to improve social status and take social power" and external motivational factors occur in these items; "tempting things in the nature, to escape from routine and crowd, to escape from family and to escape from responsibility, to be a fighter and to revolt, to achieve, to compete with self and others, to recognise and to be recognized, to be with friends, to meet the celebrity in this activity, to help others and take social responsibility, to have new social relations and to make new friends, and to improve social status and take social power". These factors which motivate a person to do mountaineering can be explained by using Self Determination Theory (Deci & Ryan, 1985), the Achievement Goal Theory (Pintrich, 2000), Activity Theory (Engeström et al., 2003). The item of "to be a fighter and to revolt, especially having T-type personality" can be explained by Personality Theory (Knutson, 1995). These factors overlap and support the results of Ardahan (2011), Ardahan and Lapa (2010), Driver (1983), Ibrahim and Cordes (2002), Kalkan (2012), Kalkan and Ardahan (2012), Kyle et al. (2006), Manfredo et al. (1996), McKenzie (2000), Yerlisu Lapa et al. (2010).

Benefit can be defined as a physical, social and mental result of participating in a mountaineering activity. These benefit items explained by BSM define the realization level of the cause items for taking part in the activity. The means of benefit items and the benefits themselves overlap the result of Ardahan (2011), Ardahan and Lapa (2010), Kalkan (2012), Kalkan and Ardahan (2012). The regression results given in Table-6 explain that while the major affect of CS1 is on BF2, that of CS2 is on BF3 and that of CS3, CS4 and CS5 is on BF1. At the same time, CS1 and CS3 have a positive effect on BF3. The regression models of benefits explain the main aim of this research. It is expected that CS1 has a positive impact on BF2, and it seems so. At the same time, CS1 has a positive impact on BF3. This means that socialization makes and forces people to learn new skills and improve themselves. As Ucan, Tascı and Ovayolu (2008) concluded, in a society whether in a formal or informal social life, one compares many personal skills with those of others, observe them and try to replicate and improve them. This helps and increases the awareness and urges these people "to use and develop new skills". This result makes the conclusion even stronger.

CS2 has a positive and significant affect on BF3 and this explains how competition affects the benefits "learning new skills" and "improving skills". The desire to be in a competition (oneself or others), compels people "to learn new skills" and "improve their skills" in order to achieve competition. This conclusion overlaps the main aim of this research.

CS3 has a positive and significant affect on BF1 and BF3, and this explains how health reasons affect the BF1 and

[3] - Retrived December 02, 2012, from http://changingminds.org/explanations/needs/maslow.htm.

this also influences "learning new skills" and "improving skills". This means that if a person wants to be physically or mentally fit, s/he has to do something "to get physical and mental rehabilitation", "to get physical and mental wellness," and "to get physical and mental fitness". At the same time, the benefit of **"Use and develop new Skills"** is a result of changing personal health awareness. This result supports the main aim of this research.

Escaping factors (CS4) has a negative effect on all Benefit Components. If a person wants to participate in mountaineering for the escaping reason, benefit components decrease, because mountaineering is not a sport which is suitable to be done alone. It needs group participation (Kalkan, 2012). Because of this necessity, when the person wants to participate in a mountaineering activity because of the escaping reasons, the benefits of this participation decreases. These results explain and overlap the exact relation between causes and benefits.

CS5 has a positive and significant effect on BF1 and it shows how relaxing reasons affect the BF1. These results also support the main aim of this research; in other words, it can be said that there are significant regression models between MFSM and BSM.

It can be said that MFSM is an adaquate validity to explain motivational factors to participate in mountaineering, and BSM is an adaquate validity to explain benefit factors to attend mountaineering for the Turkish population. Cronbach's Alpha internal consistency test (for MFSM=0.822, for BSM=0.852) was applied to the identified sub-factors and overall two scales. The variance explained by these subscales was %59.136 for MFSM and %65.871 for BSM.

Finally, results reveal that the Motivational Factors Scale for participating in Mountaineering activities and the Benefits Scale of participating in Mountaineering activities were reliable and valid in the estimation of the motivational factors and benefits of attending mountaineering for the Turkish population.

Moreover; these scales are suitable and open to be developed.

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