



# International Journal of Sports Science & Medicine

## Research Article

# Examination of the Personality of Extreme Athletes -

Gulsum Bastug\* and Harun Ozer

*Mugla Sitki Kocman University, Faculty of Sport Science, Department of Recreation, Mugla/Turkey*

**\*Address for Correspondence:** Gulsum Bastug, Mugla Sitki Kocman University, Faculty of Sport Science, Department of Recreation, Mugla/Turkey, Tel: +050-576-76029; ORCID ID: <https://orcid.org/0000-0001-7916-2042>; E-mail: [gbastug@mu.edu.tr](mailto:gbastug@mu.edu.tr)

**Submitted:** 11 July 2019; **Approved:** 03 September 2019; **Published:** 06 September 2019

**Cite this article:** Bastug G, Ozer H. Examination of the Personality of Extreme Athletes. Int J Sports Sci Med. 2019;3(2): 054-059.

**Copyright:** © 2019 Bastug G, et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



## ABSTRACT

This study was prepared to examine the personality traits of extreme athletes. The samples of the research are 156 extreme athletes; 106 athletes who have participated in the Turkey championship in Afyonkarahisar, İzmir, Muğla-Fethiye organized by Turkey Motorcycle Federation, 30 diving athletes in Antalya-Kemer diving center, 20 rafting athletes in the rafting area in Antalya-Manavgat and Mugla-Dalaman River. In order to determine the personality traits of the athletes, 5-factor-theory-scale developed by Bacanlı et al. [1] was used. The analysis of the data obtained in the study was tested with statistical package for the social science 23.0 statistical package program and frequency, t-test and univariate analysis of variance.

As a result, it was found that the personality and sub-dimensions of extreme athletes were significantly different in terms of age, marital status, smoking, exercise and having children. No significant difference was found between the personality traits of extreme athletes according to gender, education status, alcohol use, individuals doing sports in the family, and leisure activities. In women athletes, emotional imbalance, extroversion, openness to experience, gentleness, responsibility personality trait is higher than in male athletes. Emotional imbalance personality trait was found to be higher in non-exercise athletes than athletes that are doing exercise.

**Keywords:** Extreme athletes; Five factor personality; Adjective based personality

## INTRODUCTION

Extreme sports can be defined as a relatively new form of sport or as an extraordinary individual achievement and personal unique pleasure [2]. Sometimes athletes want to experience extreme experiences by seeking different sports outside of traditional sports [3]. Brymer [4], defines extreme sports as “those activities where a mismanaged mistake or accident would most likely result in death, as opposed to injury” (p.i). Classic examples of extreme-risk nontraditional sports include free climbing, solo rope climbing, extreme mountaineering, waterfall skiing, deep water diving, extreme skiing, BASE (building, antenna, span, earth) jumping, big wave surfing, and wingsuit flying [5]. Extreme sports, such as skydiving, altitude mountain climbing, rock-climbing, white water rafting, motor-cycling, skydiving, and paragliding are among the group of sports associated with a high risk [6-8]. In recent years, with the increasing popularity of risk-oriented, adventure-based extreme sports are being conducted and the perception of risk in extreme sports has been the subject of research [9,10]. In a study on risky sports, the following results were observed, the extroversion and openness of individuals who participated in surfing, climbing, diving and other risky sports were found to be high. Conscientiousness and neuroticism (a personality trait characterized by tension and emotional imbalance) were found to be low [11]. Risk-taking behavior in extreme sports, such as skydiving, surfing and mountaineering, are often perceived differently to risk taking in other life domains (e.g., gambling, reckless driving or sexual behavior) because of their greater social acceptability [12]. Cliff jumping, bungee jumping, altitude mountain climbing, rock climbing, parachute jumping was rated as five most risky sports by female and male university students. Men find motor sports more attractive than women, however, women find land and water sports more attractive [13]. In extreme athletes, low conscientiousness, high neuroticism and high risk-taking behaviors have been defined as personality traits [12]. Extreme athletes are motivated by high levels of arousal, adrenaline, aggression, excitement, struggle, uniqueness, psychological state, physical/spiritual comfort and achievement [14]. Risk taking is seen as the most important motivating factor in participation in extreme sports rather than dominant sports branches [15]. Risk taking, stress relieving, aggression, and commitment, social relaxation, self-esteem, competition, achievement, mastery, aesthetics, value development, self-realization, physical fitness, fashion compliance and entertainment/pleasure factors were identified as extreme sports participation motivators [16]. 15 different motives were determined

for Turkish extreme athletes' motivation to participate in sports. These are belonging, friendship, desire to take risks, excitement seeking, pleasure/pleasure, addiction, entertainment, lifestyle, freedom, self-confidence, achievement, seeking difference, physical fitness, escape, stress relief [17]. Extreme sports provide emotions of excitement and risk taking to the extreme. Sports that are commonly performed by other people are not preferred by extreme athletes. There is a danger of death in extreme sports. Some people prefer the least dangerous, low-risk sports, while some people prefer excitement, risk, danger-drinking sports. Some differences in personality characteristics of individuals doing extreme sports are remarkable. Personality traits of individuals doing extreme sports were examined. The results explain the high participation in extreme sports.

## MATERIALS AND METHODS

The samples of the research are 156 extreme athletes, 106 athletes who have participated in the Turkey championship in Afyonkarahisar, İzmir, Mugla-Fethiye organized by Turkey Motorcycle Federation, 30 diving athletes in Antalya-Kemer diving center, 20 rafting athletes in the rafting area in Antalya-Manavgat and Mugla-Dalaman River. In order to determine the personality traits of the athletes, 5-factor-theory-scale developed by Bacanlı et al. [1] was used.

### Adjective Based Personality Test (ABPT)

Personality test based on adjectives was developed by Bacanlı et al. [1] based on five factor theory. Adjective Based Personality Test (ABPT) consists of 40 items and is based on opposite pairs of adjectives. Scale items are bipolar. In the questionnaire, the response is done in a Likert style between 1-7. Bipolar items are evaluated according to the scores obtained on a 7- point dimension.

As a result of factor analysis, a five-factor structure was obtained: extroversion (Eg: Person who prefers loneliness-person who prefers social/community), compliant (Eg. spiteful-forgiving), responsibility (Eg. tidy-untidy), these are belonging emotional imbalance (calm-nervous) and willingness to experience (Eg. interested in art – uninterested in art). These five factors explain 52.63% of total variance of scale. Extroversion subscale consists of nine items, calm subscale nine, responsibility subscale seven, emotional imbalance subscale seven and willingness to experience subscale consists of eight items. In the reliability study of ABPT, the reliability coefficients obtained for each subscale by means of repetition test were 85 for extroversion, 86 for calmness, 71 for responsibility, 85 for emotional imbalance and 68 for willingness to experience. Cronbach Alpha coefficients are 89 for



extroversion, 87 for calmness, 88 for responsibility, 73 for Emotional unbalance, and 80 for willingness to Experience. The Cronbach Alpha coefficients obtained in this study are 89 for extroversion, .78 for calmness, 80 for responsibility, 74 for emotional imbalance and 77 for willingness to experience.

**Statistical analysis of data**

Descriptive statistical methods (f), (%), (X) mean and (Std. Deviation) standard deviation analyzes were used in the analysis of the data collected from the researchers. Furthermore, the differences between the athletes according to the independent variables were tested by independent samples t-test for paired groups and One-Way ANOVA in case of more than two groups. Significance level was taken as  $p = 0.05$  (Table 1).

**RESULTS**

As seen in table 2, a significant difference was found between the personality traits and sub-dimensions of the extreme athletes and the age variable ( $p < 0.05$ ). In the dimension of emotional imbalance, the average value of 18-24 years old athletes ( $\bar{X}$ : 62,67), the average value of 25-30 years' athletes ( $\bar{X}$ : 58,14), the average value of athletes over 30 years ( $\bar{X}$ : 54,68). We can say that there is a decrease in the dimension of emotional imbalance of personality as age gets older. In the responsibility sub-dimension, the average value of the athletes aged 18-24 ( $\bar{X}$ : 13,12), the average value of athletes 25-30 years ( $\bar{X}$ : 11,42), the average value of athletes 30 years and over ( $\bar{X}$ : 15,65). The responsibility sub-dimension of personality gives the highest average in individuals over 30 years of age. According to these average values, it shows that the sense of responsibility increases with age.

As seen in table 3, no significant difference was found between personality and sub-dimensions of the extreme athletes and gender ( $p > 0.05$ ). The average value of the emotional imbalance feature of women  $\bar{X}$ :59,46, the average value of men  $\bar{X}$ :57,43, the extroversion feature of the average of women  $\bar{X}$ :19,84, the average of men  $\bar{X}$ :17,54, openness to average experience in women  $\bar{X}$ :22,86, the average of the male characteristics  $\bar{X}$ :20,52, The average of women  $\bar{X}$ :22,81, the average of men  $\bar{X}$ :21,64, the responsibility feature of women's average  $\bar{X}$ :14,06, the average of men  $\bar{X}$ :12,91 was determined. When the average values were examined, it was found that the average values of female athletes were higher than the male in the dimensions of personality, emotional imbalance, extroversion, willingness to experience, calmness and responsibility.

**Table 1:** Demographic data of extreme athletes.

Variables		n	%
Gender	Man	100	65,4
	Woman	53	34,6
Age	16 - 20	19	12,5
	21 - 25	33	21,6
	26 - 30	32	20,9
	30 over	69	45,1
Marital status	Married	107	69,9
	Unmarried	46	30,1
Do you have children?	No	99	64,7
	Yes	54	35,3
Do you smoke, drink alcohol or use drug?	No	107	69,9
	Yes	46	30,1
Do you exercise?	No	16	10,5
	Yes	137	89,5
<b>Total</b>		153	100,0

**Table 2:** Examination of personality and sub-dimensions according to age variable in extreme athletes.

	Age groups	n	X	X <sup>2</sup>	sd	p
Total score	1 18-24	52	27,54	1,960	2	0,050
	2 25-30	32	25,82			
	3 30	69	26,50			
Emotional Unbalance	1 18-24	52	62,67	2,262	2	0,039
	2 25-30	32	58,14			
	3 30	69	54,68			
Extroversion	1 18-24	52	18,01	1,518	2	0,149
	2 25-30	32	18,76			
	3 30	69	18,32			
Willingness to Experience	1 18-24	52	21,46	2,050	2	0,025
	2 25-30	32	21,00			
	3 30	69	21,25			
Calmness	1 18-24	52	22,44	1,869	2	0,024
	2 25-30	32	19,79			
	3 30	69	22,61			
Responsibility	1 18-24	52	13,12	2,104	2	0,014
	2 25-30	32	11,42			
	3 30	69	15,65			
<i>P</i> < 0.05						

**Table 3:** Examination of personality and sub-dimensions according to gender variable in extreme athletes.

Dimensions	Groups	n	X	Σ	U	z	p
Personality total score	Woman	53	27,81	780,37	663,374	-0,814	0,463
	Man	100	26,01	1334,30			
Emotional unbalance	Woman	53	59,46	2490,57	1444	-0,667	0,553
	Man	100	57,43	4322,42			
Extroversion	Woman	53	19,84	316,27	1311,5	-1,110	0,298
	Man	100	17,54	527,50			
Willingness to experience	Woman	53	22,86	448,00	214,75	-1,004	0,383
	Man	100	20,52	752,75			
Calmness	Woman	53	22,81	478,16	264,05	-0,699	0,514
	Man	100	21,64	851,28			
Responsibility	Woman	53	14,06	168,85	82,57	-0,593	0,569
	Man	100	12,91	242,57			

As seen in table 4, a significant difference was found between personality and sub-dimensions of extreme athletes and marital status variable ( $p < 0.05$ ). Emotional imbalance property of the unmarried average value  $\bar{X}$ :60,09, the average value of married people  $\bar{X}$ : 53,76, extroversion property of the unmarried average value  $\bar{X}$ :17,43, the average value of married people  $\bar{X}$ :20,22, willingness to experience the average value of unmarried  $\bar{X}$ :21,23, married The average value of those who are  $\bar{X}$ :20,61, the average value of calmness of the unmarried  $\bar{X}$ :21,21, the average value of those who are married  $\bar{X}$ :24,13, the average value of unmarried  $\bar{X}$ :12,84, the average value of those who are married  $\bar{X}$ :15,23. It is noteworthy that the emotional imbalance of unmarried athletes is high. Married athletes have higher level of responsibility and calmness than unmarried athletes. Emotional imbalance is high in unmarried people, calmness and responsibility characteristics are high in married athletes because of the living conditions brought by marriage.

As seen in table 5, a significant difference was found between personality and sub-dimensions of extreme athletes and having a child ( $p < 0.05$ ). The average value of the children without emotional instability  $\bar{X}$ :59,33, the average value of those with children  $\bar{X}$ : 55,86, the extroversion property of the non-children, the average value of  $\bar{X}$ :17,99, the average value of those with children  $\bar{X}$ :18,61, the average value of willingness to experience children  $\bar{X}$ : 20,82, the average value

of children The average value of those with  $\bar{X}$ :21,71, the calmness value of non-children with the average value of  $\bar{X}$ : 21,40, the average value of those with children  $\bar{X}$ :23,07, the non-responsibility of the children with the average value of  $\bar{X}$ : 12,57, the average value of children with  $\bar{X}$ : 15,34, was determined.

As seen in table 6, there was a significant difference between personality and sub-dimensions of extreme athletes and smoking, alcohol and drug use variables ( $p < 0.05$ ). Emotional imbalance property of cigarette, alcohol, drug-free athletes average value  $\bar{X}$ :59,20, average value of athletes using  $\bar{X}$ :55,18, extroversion feature of cigarette, alcohol, drug-athletes average value  $\bar{X}$ :18,43, average value of athletes using  $\bar{X}$ :17,65, open to experience property of cigarettes, alcohol, drug-free athletes average value  $\bar{X}$ :20,89, the average value of athletes using  $\bar{X}$ :21,94, calmness property of cigarettes, alcohol, drug-

free athletes average value  $\bar{X}$ :21,70, the average value of athletes using the drug  $\bar{X}$ :22,38, responsibility feature smoking, The average value of athletes who do not use alcohol, drug  $\bar{X}$ :12,77, the average value of athletes using  $\bar{X}$ :14,41. It is noteworthy that the personality trait of the willingness to experience is higher in athletes who smoke.

## DISCUSSION

In the study, the personality traits of extreme athletes were examined; a significant difference was found between the personality traits and sub-dimensions of the extreme athletes and age variable ( $p < 0.05$ ). The responsibility sub-dimension of personality gives the highest average in individuals over 30 years of age. According to these values, it can be said that the sense of responsibility increases with age (Table 2). In Demir's study [18] with 388 people using 5 factor personality tests, a significant difference was found in the sub-dimensions of self-control/responsibility and openness to development in the age variable. No significant difference was found between personality and sub-dimensions of extreme athletes and gender ( $p > 0.05$ ). No significant was found, but it was found that the average values of female athletes were higher than those of men in the dimensions of personality, emotional imbalance, extroversion, openness to experience, softness, and responsibility (Table 3). In the study, which examined the perceptions of risk and attractiveness of extremity sports among university students, risk perception differed according to gender and whether or not to participate in these sports before [13]. Risk-taking behavior and need for excitement seeking in extreme athletes were examined, and a significant relationship was found between risk-taking behavior and need for excitement in extreme athletes and gender variable. Male athletes, excitement seeking, and risk-taking behavior has a higher average than female athletes. In extreme athletes, a significant relationship was found between risk taking behavior and need for seek excitement. It's noteworthy that when the risk-taking behavior values increase, the need for excitement seeking increases as well [19]. The personality traits of university students related to some variables were examined and it was found that the mean scores of extroversions, openness to experience, softness and responsibility scores did not differ significantly in terms of gender variable in terms of personality traits [20]. This research finding supports our study. A significant difference was found between personality and sub-dimensions of extreme athletes and marital status variable ( $p < 0.05$ ). Emotional imbalance with personality traits was found higher in unmarried athletes. Married athletes have higher level of responsibility and calmness than unmarried athletes. Emotional imbalance is high in unmarried people, calmness and responsibility characteristics are high in married athletes. It can be said that the reason is the responsibilities of marriage (Table 4). Demir's [18] personality traits of university employees were examined, and it was found that unmarried employees had a higher value for self-improvement than married ones. Significant differences were found between personality and sub-dimensions of extreme athletes and having a child variable ( $p < 0.05$ ). Emotional imbalance was found to be high in athletes who have no children, but extroversion, willingness to experience, calmness, and responsibility were found higher in athletes who have children (Table 5). Personality and risk-taking behaviors of rafting and scuba diving athletes were examined and a significant relationship was found between risk taking behavior and adventure seeking. Personality characteristics that affect risk-taking behavior are shown as extroversion, being outspoken and conscientiousness [21]. Significant differences were found between personality and sub-dimensions of extreme athletes

**Table 4:** Examination of personality and sub-dimensions of extreme athletes according to marital status variable.

Dimensions	Groups	n	$X_{sira}$	$\sum_{sira}$	U	z	p
Personality total score	Unmarried	107	26,56	1497,29	370,348	-1,074	0,038
	Married	46	26,79	622,37			
Emotional unbalance	Unmarried	107	60,09	4852,71	1221,85	-1,449	0,048
	Married	46	53,76	1960,28			
Extroversion	Unmarried	107	17,43	562,16	127,055	-0,960	0,028
	Married	46	20,22	281,61			
Willingness to experience	Unmarried	107	21,23	848,43	213,68	-0,885	0,037
	Married	46	20,61	352,31			
Calmness	Unmarried	107	21,21	933,88	226,444	-1,055	0,035
	Married	46	24,13	395,55			
Responsibility	Unmarried	107	12,84	289,28	62,714	-1,024	0,045
	Married	46	15,23	122,14			

**Table 5:** Examination of personality and sub-dimensions of extreme athletes according to the variable of having children.

Dimensions	Groups	n	$X_{sira}$	$\sum_{sira}$	U	z	p
Personality total score	No	99	26,42	1365,10	416,736	-0,989	0,049
	Yes	54	26,91	754,57			
Emotional unbalance	No	99	59,33	4432,50	1346,785	-1,335	0,046
	Yes	54	55,86	2380,50			
Extroversion	No	99	17,99	525,44	177,444	-0,554	0,101
	Yes	54	18,61	318,33			
Willingness to experience	No	99	20,82	735,81	242,437	-0,939	0,031
	Yes	54	21,71	464,93			
Calmness	No	99	21,40	861,333	253,444	-0,964	0,034
	Yes	54	23,07	468,111			
Responsibility	No	99	12,57	270,42	63,571	-1,156	0,033
	Yes	54	15,34	141,00			

**Table 6:** Examination of personality and sub-dimensions of extreme athletes according to the variables of smoking, alcohol and drug use.

Dimensions	Groups	n	$X_{sira}$	$\sum_{sira}$	U	z	p
Personality total score	No	107	26,59	1481,15	403,692	-0,680	0,044
	Yes	46	26,31	638,52			
Emotional unbalance	No	107	59,20	4891,42	1286,428	-0,779	0,045
	Yes	46	55,18	1921,57			
Extroversion	No	107	18,43	581,66	159,888	-0,760	0,047
	Yes	46	17,65	262,11			
Willingness to experience	No	107	20,89	785,31	244,312	-0,443	0,010
	Yes	46	21,94	415,43			
Calmness	No	107	21,70	883,44	259,333	-0,530	0,068
	Yes	46	22,38	446,00			
Responsibility	No	107	12,77	263,92	68,500	-0,890	0,050
	Yes	46	14,41	147,50			



and smoking, alcohol and drug use variables ( $p < 0.05$ ). Emotional imbalance, willingness to experience and responsibility were found to be high in athletes who smoke, drink alcohol or drug. On the other hand, extroversion personality was found high in athletes who do not smoke, drink alcohol or use drug. It is noteworthy that athletes who use cigarettes, alcohol, or drug have higher willingness to experience personality traits (Table 6). Personality, self-efficacy and risk-taking behaviors of extreme sports and high-risk parkour/free-running athletes were examined and found a relationship between risk-taking behavior and neuroticism and conscience. In free-running athletes, a significant relationship was found between self-efficacy, neuroticism, conscience and risk-taking [22]. It was found that cigarette addicts had lower characteristics such as seeking novelty, persistence, self-management, cooperation and self-transcendence compared to non-smokers [23,24]. In a study related to steroid use in athletes, steroids, commonly referred to as Anabolic Androgenic Steroids (AAS), are a family of hormones that comprises testosterone. This class of doping substances cause an extensive increase in the muscular mass and is being used to improve athletic performance. Athletes are still using them to increase physical performance and bodybuilders are using them to improve size and cosmetic appearance. For performance enhancing use, these substances generally used without interruption and during several weeks preceding a competition. In particular, early death from cardiovascular disease, sterility in men and, in women, masculinization and possible irreversible effect constitute the most serious dangers. More recently, studies have suggested that psychological and behavioral changes and addiction may result from chronic anabolic steroid abuse. AAS were the first identified doping agents that have ergogenic effects and are on the International Olympic Committee's list of banned substances. This paper identifies:

- AAS increasing represent only one of many different classes of agents it is important to use by recreational bodybuilders and by athletes in the 21st century,
- their side effects
- their effects on sports performance
- phenomenon of polypharmacy [25].

## CONCLUSION

As a result, it was found that personality and sub-dimensions of extreme athletes differ significantly according to age, marital status, smoking, exercising and having children. There was no significant difference in terms of personality characteristics of extreme athletes according to gender, educational background, alcohol use, family members and leisure activities. It was determined that the personality trait increased according to the age variable. Emotional imbalance, extroversion, openness to experience, calmness, and responsibility personality traits were higher in female athletes than male. Unmarried athletes, emotional imbalance personality trait is high and in married athletes, responsibility and calm personality traits are high. Emotional imbalance personality traits were found to increase as the education level increased. Emotional instability of athletes who do not have children, extroversion, willingness to experience, calmness and responsibility of the athletes who have children were found to be high. The openness to experience was found to be higher in smoking athletes. It was determined that alcohol use athletes had high willingness to experience and emotional imbalance. Emotional imbalance personality traits were found to be higher in non-exercising athletes.

## REFERENCES

- Bacanli H, Ilhan T, Aslan S. Personality based on five factor theory Scale Development: based on Adjespersonality Test (SDKT). The Journal of Turkish Education Sciences. 2009; 7: 261-279.
- Rinehart RE, Sydnor S. To the extreme: alternative sports, inside and out. NY: State University of New York Press. 2003. <https://bit.ly/2kvfcJH>
- Coffey M. Explorers of the infinite: the secret spiritual lives of extreme athletes - and what they reveal about near-death experiences, psychic communication, and toughing the beyond. New York, NY: Jeremy P. Tarcher/Penguin Press. 2008. <https://bit.ly/2ITDOW3>
- Brymer E. Extreme dude: a phenomenological exploration into the extreme sport experience. (Doctoral dissertation). Available from the University of Wollongong Library. New South Wales. Australia. 2005. <https://bit.ly/2ksRgXt>
- Brymer E, Oades L. Extreme sports: a positive transformation in courage and humility. J Humanist Psychol. 2009; 49: 114-126. <https://bit.ly/2lvzvH>
- Davis-Berman J, Berman D. Risk and anxiety in adventure programming. Journal of experiential education. 2002; 25: 305-310. <https://bit.ly/2ITDEor>
- Demirhan G. Mountaineers' risk perception in outdoor-adventure sports: a study of sex and sports experience. Percept Mot Skills. 2005; 100: 1155-1160. <https://bit.ly/2lyka8O>
- Martha C, Sanchez X, Gomà-i-Freixanet M. Risk perception as a function of risk exposure amongst rock climbers. Psychol Sport Exerc. 2009; 10: 193-200. <https://bit.ly/2k4Jo0>
- Pedersen DM. Perceptions of high risk sports. Percept Mot Skills. 1997; 85: 756-758. <https://bit.ly/2jYl7qs>
- Vagias W, Morais D, Dziubek D. The role of risk perception in a one-day wilderness whitewater rafting trip. Northeastern recreation research symposium. USDA Forest Service Newtown Square, PA. 2005. <https://bit.ly/2lzEF57>
- Tok S. The big five personality traits and risky sport participation. Soc Behav Personal. 2011; 39: 1105-1111. <https://bit.ly/2lxCLlu>
- Castanier C, Le Scanff C, Woodman T. Who takes risks in high-risk sports? A typological personality approach. R Q Exercise Sport. 2010; 81: 478-484. <https://bit.ly/2kjhyvq>
- Demirhan G, Aşçı H, Kangalgil M, Saraçbaşı O. Perception of risk and attractiveness of extreme sports among Turkish University students. Hacettepe J Sport Sci. 2014; 25: 11-22. <https://bit.ly/2kgEkE9>
- Ko YJ, Park H, Claussen CL. Action sports participation: consumer motivation. International Journal of Sports Marketing and Sponsorship. 2008; 9: 111-124. <https://bit.ly/2kvdHLz>
- Shoham A, Rose GM, Kahle LR. Marketing of risky sports: From intention to action. J Acad Mark Sci. 1998; 26: 307-321. <https://bit.ly/2jW6N1Ec>
- Park H. Analyzing motivational factors of action sports participants (Master Distertation). Master of Arts in Education Washington State University College of Education December. 2004.
- Simsek KY. A qualitative research on the sports participation motives of the Turkish extreme sportmen. Celal Bayar University Journal of Physical Education and Sport Sciences. 2010; 5: 107-118.
- Demir C. An application to determine the relationship between personality traits and job satisfaction. (Unpublished Master's Thesis) Malatya: İnönü University, Institute of Social Sciences. Department of Business Administration. 2012.
- Ağılönü A, Bastug G, Mutlu TO, Pala A. Examining risk-taking behavior and sensation seeking requirement in extreme athletes. Journal of Education and Learning. 2017; 6: 330-336. <https://bit.ly/2kjdLOG>
- Tatlıoğlu K. A research subscales of undergraduates' personality traits according to five factor personality theory in terms of some variants. J Hist School. 2014; 7: 939-971.
- Leea TH, Tsengb CH. How personality and risk-taking attitude affect the behavior of adventure recreationists. Tourism Geogr. 2015; 17: 307-331. <https://bit.ly/2jW66p4>

22. Merritt CJ, Tharp IJ. Personality, self-efficacy and risk-taking in parkour (free running). *Psychol Sport Exer.* 2013; 14: 608-611. <https://bit.ly/2kjd4F4>
23. Cosci F, Corlando A, Fornai E, Pistelli F, Paoletti P, Carrozzi L. Nicotine dependence, psychological distress and personality traits as possible predictors of smoking cessation. Results of a double-blind study with nicotine patch. *Addict Behav.* 2009; 34: 28-35. <https://bit.ly/2k0q3et>
24. Rezvanfard M, Ekhtiari H, Mokri A, Djavid GE, Kaviani H. Psychological and behavioral traits in smokers and their relationship with nicotine dependence level. *Arch Iran Med.* 2009; 13: 395-405. <https://bit.ly/2kjdg7g>
25. Maezzer F. Anabolic steroid use in sports and in physical activity: overview and analysis. *Sport Mont.* 2018; 16, 3: 113-118. <https://bit.ly/2IEDGAI>