

Reliability and Validity of Recreational Fishing Motivation Scale in Turkish Population

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ABSTRACT

The purpose of this study was to identify reliability and validity of The Recreational Fishing Motivation Scale in Turkish population. The sample of current study was consisted of 359 volunteer participants ($M_{age}=35.90 \pm 9.80$) who live in all around of Turkey. In the statistical analysis, scale exploratory factor analysis was conducted to identify the sub-factors of the 21 items which were grouped under six sub-factors. These factors are; socialization, rest and being in nature, competition and glory, escape, eat, and give. Whether the data was suitable to this analysis, Kaiser Mayer Olkin (0.807) and Bartlett Spherity test ($p<0.05$) results were taken into consideration. Cronbach's Alpha internal consistency test (0.843) was applied to the identified sub-factors and overall scale. The variance explained by these subscales was %64.590. Finally, results revealed that Recreational Fishing Motivation Scale was a reliable and valid scale in the estimation of the motivational factors for recreational fishing in Turkish population.

Keywords: Recreational fishing motivation scale, reliability; validity, Turkish population.

Rekreatif Balıkçı Motivasyon Ölçeğinin Geçerlilik Güvenirlik Çalışması

ÖZET

Bu çalışmanın amacı rekreatif balıkçıları balık avlamaya motive eden faktörleri belirleyerek "Rekreatif Balıkçı Motivasyon Ölçeği"ni (Recreational Fishing Motivation Scale (RFMS)) geliştirmek ve ölçeğin Türk toplumu için geçerliliğini ve güvenilirliğini tespit etmektir. Bu çalışma tanımlayıcı araştırma modelinde yapılmıştır ve çalışmanın araştırma gurubu Türkiye'nin değişik coğrafik bölgelerinde yaşayan ve araştırmaya gönüllü olarak katılmış 359 erkek ($M_{yas}=35.90 \pm 9.80$) oluşturmaktadır. 21 maddeden oluşan Rekreatif Balıkçı Motivasyon Ölçeğine açıklayıcı faktör analizi yapıldığında maddeler 6 faktörde toplanmıştır. Bu faktörler; Sosyalleşme, Doğada Olmak-Dinlenmek, Sağlık-Spor, Rekabet-Ün, Yemek-Vermek ve Uzaklaşmaktır. Kaiser-Mayer-Olkin Örneklem Yeterlilik Ölçümü 0.807, Bartlett Küresellik testi $p<0.05$ olarak bulunmuştur. Ölçeğin Cronbach's Alpha katsayısı 0.843, açıklanan toplam varyans büyüklüğü % 64.590 olarak bulunmuştur. Bu değer ölçeğin istatistiki olarak yeterli güvenilirlikte olduğunu göstermektedir. Bu bulgular ve sonuçlar göz önünde bulundurulduğunda ölçeğin Türk popülasyonu için güvenilir bir ölçek olduğunu söylemek mümkündür.

Anahtar Kelimeler: Rekreatif balıkçı motivasyon ölçeği, geçerlilik, güvenilirlik, Türk toplumu.

INTRODUCTION

Many researchers have been interested in the reasons of participations in general recreational activities and in particular, the reasons that motivate individuals who take part in recreational fishing. Examining the factors which motivate individuals to take part in recreational fishing requires knowing the general reasons that motivate people to participate in recreational activities and personal reasons that motivate people to participate in fishing. Ibrahim and Cordes (24) have explained the factors that motivate individuals for recreational activities such as "individuals' participation these kinds of activities because of personal needs, Need Theory" Manfredo et al. (29) has explained participations with "the recreation experience preference scales". In addition, while Crandall (6) has put forward the reasons of participations as the personality of individual and the situation which they are in, Levy (26) claims that

behaviors emerge by interaction between stimulus and personality. Relaxing, wandering around, getting away from family, responsibilities, crowd and routine could be given as examples.

Apart from these, in order to explain participations in these activities many researchers, considering the main characteristics of recreative sports, have taken up the factors which motivate individuals. In order to explain participations in recreational sports; Achievement Goal Theory which was put forward by Ames (1), Dweck (18), Nicholls (30) and Roberts (31), and Self-Determination Theory which is rooted in the work of Deci in 1975 and the theory which was developed and conceptualized by Deci (9), Deci and Ryan (10, 11) have been used frequently. In Achievement Goal Theory individuals are either in ego centered or duty centered. While being in ego centered directs individuals to combat with others and makes people extrovert, for example;

being remembered as an good fisher, challenge, competing with others, being in duty centered situation, out of individual goals, directs individuals to a numbers of social goals such as social approval, social solidarity, being good socially, helping others, and motivating others. According to Self-Determination Theory individual has three situations regarding motivation. These are, being unmotivated, internal motivation and external motivation. In this regard, the factors that motivate individuals have been taken up in two groups. These are internal motivation provided by internal factors and external motivation provided by external factors.

Besides these theories, there are factors which are associated with fishing. It is possible to classify these factors in three groups. First one is the concept of satisfying experiences desired that gained mainly by participating in activity or which is conveyed to his or her. It was taken up by Driver and Knopf (15) and Wilde et al. (35). Second one is the preferred psychological outcomes which were taken up by Driver and Cooksey (16), Ditton et al. (13) Chipman and Helfrich (5), Wilde et al. (35) Schuett et al. (32) Ardahan and Turgut (2). In both approaches, the aim is to maintain the gained experience and the wellness of individual in the process. Also these includes social relations such as getting rid of loneliness, interaction with others, socialization, meeting new people, exploring fishing places, effecting physical and spiritual health positively, being with friends and family members, sharing fishes with each others and neighbors. The third one is based on factors built up on motivational factors which taken up by Ditton et al. (13) and Connely et al. (7). These factors are increasing the satisfaction level by competing others, catching the biggest fish among friends, catching the most fish, being the best fisher, competing with others, being remembered as a good fisher.

Besides the factors, which motivate participation in fishing, mentioned above visiting fishing places, camping, staying in caravan or hotel are in themselves motivational factors. On the other hand, since daily or long term fishing can be a part of another activity that affected by the motivational factors which are united with the activity in question. For instance, for someone who goes picnicking by a lake both having a picnic and fishing or having a blue cruise (long-night cruise on board) requires united motivational means (2).

When all these motivational factors come together, the associated factors motivating individual to participate in fishing are formed. In this study the aim is to develop Recreational Fishing Motivation Scale (RFMS), in doing so the factors that motivate recreational fishers to go fishing, the elements which determine or affect personality, the factors for sportive and selling purposes have been excluded from scope.

METHOD

The Purpose of the Research; is to determine the factors which motivate recreative fishers for fishing, and develop Recreational Fishing Motivation Scale (RFMS), and to find out the validity and reliability of the Scale in Turkish Society.

The Type of Research: This research has been carried out according to descriptive research type. Apart from few exceptions the factors which determine or affect personality, the factor for sportive or selling purposes, this research includes the factors which motivate Recreational Fishing in its scope.

Research Group: The study group of the research consists of 359 volunteer males who live in the various regions in Turkey ($M_{age}=35.90 \pm 9.80$).

Data Collection Tool: In this purpose a survey form has been sent to volunteer participants via www.facebook.com also the survey form has been sent to Fishing Associations, Clubs and Fishing institutions as email. 364 feedbacks were received between 01st February 2012 / 30th May 2012. Out of 359 feedbacks five were females. As the number of females Participated in the survey was insufficient to carry out statistical calculations, females have been kept out of scope. Apart from the questions to determine the demographic data of the participants in order to determine the factors which motivate individuals regarding studies have been quoted. These are collected from; Knopf et al. (25), Deci (9), Driver and Knopf (15), Driver and Cooksey (16), Ditton et al. (13), Buchanan (3), Deci and Ryan (10, 11), Loomis and Ditton (27), Chipman and Helfrich (5), Driver et al. (15), Dann (8), Fedler and Ditton (19), Manfredo et al. (29), Toth Jr and Brown (34), Wilde et al. (35), Hunt and Ditton (22, 23), Connelly et al. (7), Burger (4), Ibrahim and Cordes (24), Ditton (12), Ditton and Sutton (14), Floyd et al. (21) and Schuett et al. (32). In order to make "The factors which motivate persons for fishing", three academics who have a good command of English have contributed to research for translation from English to Turkish and Turkish to English. Double-translation method has been used to adopt the text in Turkish. Before the Scale was applied, approval was gained from the experts regarding the suitability of answers to purposes and survey was handed out to the participants and then the clarity of wording was evaluated. According to the gained data the flawed expressions was reviewed and the scale was made ready to use.

In order to facilitate the validity of scale, using face to face research type, survey has been to applied to 50 volunteers who are interested in recreational fishing and 50 surveys which were filled in correctly have been taken into consideration. The survey has been to volunteers twice. In order to look at the

correlation between the first and second observation Pearson Correlation Test has been used and it has been found $r=0.948$, $p<0.01$. This result has statistically sufficient validity of wording.

Analyzing Data: In analyzing statistical data Explaining Factor Analysis has been used and the sub-dimensions of scale have been put forward. For the measurement validity of the Explaining Factor Analysis (EFA), Kaiser–Meyer–Oklin (KMO) and Bartlett’s Test of Sphericity have been run. At the end of factor analyzing in order to test the validity of structure, matter-total statistical analysis has been applied. In order to evaluate internal consistence scale the Cronbach’s Alpha coefficient of sub-dimensions which were determined by EFA, in order to look at the link between test and re-test for the validity of wording Pearson Correlation Test has been used and the results have been questioned in 0.01 and 0.05 significant level. A five-point Likert scale measuring was used and the range covers “1: definitely no” to “5: definitely yes”. All measures were in Turkish and linguistically adapted to the cohort.

RESULTS

As it seems in table 1 KMO’s value is 0.807 and in the result of Bartlett’s Test of Sphericity (Chi-square=2923.930, $P=0.000$) value is $p<0.05$, and EFA method is applicable on our data set.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,807
Bartlett's Test of Sphericity	Approx. Chi-Square	2923,930
	df	210
	Sig.	0,000

The scale which has 21 items has been subjected to EFA and then varimax rotation was applied and the results given in table 2 were gained. When EFA is applied to RFMS, the items were classified in six factors and the sample validity scale of KMO value was 0.807 and Bartlett’s Test of Sphericity was $p<0.05$. All these items have been matched with one of these six factors meaningfully.

When table-2 is examined, it could be seen that nine sub-dimensions which has bigger than one Eigen values. The total explained variance of these six factors is 64.590%. While the highest communalities is 0.829 the lowest communalities is 0.521. According to new scale the coefficient of Cronbach’s Alpha is 0.843. This value shows that the scale is reliable enough.

Factor-1 “Socialization” factor is the physical and emotional relation created between the participant and the others before/during/after the activity

and it includes socialization with the community, building new relationships besides the existing ones, being with friends, getting know them, entering in a new group with this aim, getting rid of loneliness. Cronbach's Alpha coefficient = 0.829.

Factor-2 ‘Relaxing and being in Nature’ factor defines all the things which give physical and mental wellness and includes; getting away from city life and looking for quite places, being outdoor or in nature and relaxing both physically and spiritually. Cronbach's Alpha coefficient = 0.782.

Factor-3 ‘Health-Sport’ factor explains physical and mental dimension of healthy and doing physical activity and includes; affecting the health of individual both physically and spiritually, self development, learning new skills and using them, making physical activities and being happy. Cronbach's Alpha coefficient = 0.765.

Factor-4 ‘Competition-Prestige’ factor includes internal and external competition process, having prestige in neighborhood and includes; called as famous fisherman. Cronbach's Alpha coefficient = 0.542.

Factor-5 ‘Escaping’ factor explains escaping from something, somebody and/or something which has a negative effect on wellness and includes; getting away from hectic city life, escape from work, family, life and responsibilities, crowd, and routine. Cronbach's Alpha coefficient = 0.583.

Factor-5 ‘Food-Giving’ the food which is the last factor about individual fishing explains the eating and selling. The “selling” action should not be understood as the trade activities of professional fishing rather, it should be understood as an activity of amateur fishing. Selling is about buying small tools and meeting small expenses and it is to support the budget. Cronbach's Alpha coefficient = 0.485.

The correlation values of items have been given in table 3. As it is seen in the Table, the correlation values of items which were classified regarding sub-dimensions are very high. Each item has a meaningful statistical correlation with the sub-dimension which it belongs ($p<0.01$). Besides, there is a statistically meaningful correlation between the RFMS’s sub-dimensions which were not divided from each other sharply and the internal and external factors which affect the acts of individuals and 21 items which were determined according to sub-conscious and top-conscious, social construction and relations such as Socialization, Being in Nature and Relaxing, Health and Sport, Competition and Prestige, Escaping, and Food and Giving.

Table 2. Components and Factor Loadings, Communalities and Descriptive

Items	Components and Factor Loadings						Communalities	M ± SS
	1	2	3	4	5	6		
N06	0,512						0,572	3,60±1,03
N09	0,686						0,581	2,27±0,96
N13	0,859						0,829	2,60±1,10
N14	0,846						0,803	2,76±1,10
N15	0,724						0,612	2,13±0,95
N01		0,704					0,549	3,94±1,15
N02		0,836					0,764	4,10±1,09
N03		0,788					0,710	4,19±0,97
N05		0,596					0,595	4,64±0,66
N11			0,719				0,666	4,00±0,99
N12			0,687				0,649	3,66±1,13
N16			0,670				0,521	4,20±0,92
N20			0,724				0,666	4,10±0,97
N04				0,720			0,584	1,66±0,97
N21				0,736			0,612	2,22±1,18
N17					0,393		0,671	3,92±1,07
N18					0,808		0,715	1,87±0,96
N19					0,792		0,674	2,13±1,14
N07						0,721	0,544	3,08±1,12
N08						0,646	0,656	2,49±1,03
N10						0,596	0,593	1,36±1,13
Cronbach's Alpha:	0,829	0,782	0,765	0,542	0,583	0,485	For all scale, Cronbach's	
Rotated Eigenvalues:	3,169	2,826	2,710	1,686	1,676	1,497	Alpha=0,843	
Rotated variance (%):	15,092	13,459	12,905	8,028	7,979	7,128		
Rotated cumulative variance (%):	15,092	28,551	41,456	49,484	57,462	64,590		

Table 3. Pearson Correlations between items and components

Items	Factors					
	1	2	3	4	5	6
Socialization						
N06	0,644**	0,449**	0,248**	-0,025	0,024	0,072
N09	0,689**	0,171**	0,270**	0,212**	0,197**	0,356**
N13	0,896**	0,315**	0,421**	0,115*	0,223**	0,249**
N14	0,874**	0,272**	0,420**	0,104*	0,127*	0,271**
N15	0,737**	0,146**	0,234**	0,175**	0,238**	0,211**
Relaxing and being in Nature						
N01	0,220**	0,755**	0,311**	0,063	0,168**	0,135*
N02	0,355**	0,863**	0,376**	0,092	0,253**	0,090
N03	0,333**	0,821**	0,373**	0,093	0,291**	0,022
N05	0,186**	0,693**	0,459**	0,100	0,229**	0,022
Health-Sport						
N11	0,341**	0,463**	0,822**	0,107*	0,274**	0,118*
N12	0,397**	0,263**	0,781**	0,186**	0,226**	0,123*
N16	0,206**	0,300**	0,656**	-0,004	0,306**	0,072
N20	0,322**	0,421**	0,804**	0,103	0,293**	0,132*
Competition-Prestige'						
N04	0,177**	0,055	0,211**	0,658**	0,236**	0,184**
N21	0,271**	0,101	0,248*	0,307**	0,126*	0,220**
Escaping						
N17	0,231**	0,490**	0,492**	0,090	0,675**	0,149**
N18	0,166**	0,090	0,144**	0,263**	0,761**	0,232**
N19	0,070	0,071	0,147**	0,185**	0,783**	0,147**
Food-Giving'						
N07	0,065	-0,038	0,059	0,074	0,180**	0,770**
N08	0,428**	0,197**	0,161**	0,182**	0,152**	0,723**
N10	0,138**	0,043	0,093	0,210**	0,168**	0,609**

** Significant at 0.01 level, * significant at 0.05 level

Table 4. Items

N01- feeling relaxed and refreshed	N12- to achieve self-realization, To gain and developed new skills
N02- the desire to be in outdoor	N13- to have new social relations
N03- Escaping from city	N14- to make new friends
N04- to achieve and compete with oneself and others, to challenge	N15- to get rid of loneliness
N05- nature love and the desire to be in the nature	N16- feeling happier
N06- to be with friends, spending time with friends	N17- to escape from routine and crowd
N07- for food and for eating	N18- to escape from family
N08- to give and share others	N19- to escape from responsibility
N09- for social solidarity	N20- for physical activity
N10- to sell	N21- to be known as a famous fisherman
N11- to get physical and mental rehabilitation and wellness.	

DISCUSSION

This paper introduces a motivational factors scale that motivate persons for participating in recreational fishing activities.

First phases KMO and Bartlett's Test of Sphericity test have been used to determine the validity of factor structure of research findings. When the researches were examined for the KMO, it is seen that a value which is smaller than 0.50 is not suitable, the value between 0.50 and 0.59 is bad, the value between 0.60 and 0.69 is weak, the value between 0.80 and 0.89 is average, the value between 0.90 is good and the value over 0.90 is perfect. The result $KMO=0.807$ shows that KMO values are suitable for EFA.

The results of Bartlett's Test of Sphericity that was being $p<0.05$ means that the data in correlation matrix is different from the unit matrix and this means that factors could be taken out from the matrix in question (33). It is seen that the value of the Bartlett's Test of Sphericity Test is $p<0.05$.

Besides, in order to assess the sampling group of research, the Cronbach's Alpha of items has been examined. The Cronbach's Alpha plays a significant role at determining the sampling group of research and sampling number of research (28). If the sampling group of research is small, the Cronbach's Alpha has to be high. If the Cronbach's Alpha of terms in scale is over 0.6, the sampling group of research is sufficient even if n is <100 . If this value is over 0.5, it is sufficient for sampling number (n) to be 100-200. If there are items which have Cronbach's Alpha value <0.5 , it is suggested that sampling numbers of research should be over 400 (20). According to validity and reliability of examined scales, there are not any items which have Cronbach's Alpha value <0.5 . As sampling numbers of research consists of 359 participants, the required condition has been satisfied.

In the second phase, at the end of EFA, after varimax rotation, the 21 items which are in the scale have been classified into six factors.

- Factor-1: 'Socialization' the numbers of article; N06, N09, N13, N14, and N15.
- Factor-2: 'Relaxing and being in Nature' the numbers of article; N01, N02, N03, and N05.
- Factor-3: 'Health-Sport', the numbers of article; N11, N12, N16, and N20.
- Factor-4: 'Competition-Prestige' the numbers of article; N04, and N21.
- Factor-5: 'Escaping the numbers of article; N17, N18, and N19.
- Factor-6: 'Food-Giving' the numbers of article; N07, N08, and N10.

In order to evaluate the structural validity of sub-dimensions emerged as a result of EFA it is necessary to evaluate the relationship between all factors and sub-dimensions which constitute scales items. At the end of the conducted analyses, it has been found that the items which constitute sub-dimensions have a positive relationship with sub-dimensions they do not belong to, on the other hand they have stronger relationship with sub-dimensions they belong to (table 3). These results show that the items which constitute MFSF have a relationship with sub-dimensions which aim to measure the structure they desire.

The items in these study overlap with the items used by Ditton et al.(13), Chipman and Helfrich (5), Wilde et al. (35), Connelly et al. (7), Ditton and Sutton (14). This results show the validity of this study.

In the last phase of analyzing, the Cronbach's Alpha coefficient of six factors was examined which was used to classify the scale's items. In these phase it was found that the Cronbach's Alpha coefficient of factors is between 0.485 and 0.829 and the Cronbach's Alpha coefficient of total scale is 0.843.

Given these results and findings, it is possible to state that this scale is reliable in Turkish society. The scale is suitable to be developed with its other aspects.

REFERENCES

- Ames C. Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 1992; 84: 261-271.
- Ardahan F, Turgut T. Comparing the Motivational Factors of Recreational Fishers and Hunters, Life Satisfaction Level of Participants and Non Participants in These Activities: Turkey Case, XXII. World Leisure Congress, Sep 29 - Oct 3 2012; Rimini/Italy.
- Buchanan T. Commitment and leisure behavior: A theoretical perspective. *Leisure Sciences*, 1985; 7: 401-420.
- Burger J. Consumption Patterns and Why People Fish. *Environmental Research Section A*, 2002; 90: 125-135.
- Chipman BD, Helfrich LA. Recreational Specializations and Motivations of Virginia River Anglers. *North American Journal of Fisheries Management*, 1988; 8(4): 390-398.
- Crandall, R. Motivation for Leisure. *Journal of Leisure Research*, 1980; 12(1): 45-54.
- Connelly NA, Knutk BA, Brown TL. An Angler Typology Based on Angler Fishing Preferences. *Transactions of the American Fisheries Society*, 2001; 130(1): 130-137.
- Dann S. Youth recruitment into fishing: The influence of familial, social, and environmental factors and implications for education intervention strategies to develop aquatic stewardship. Unpublished doctoral dissertation, Michigan State University, East Lansing, 1993.
- Deci EL. Intrinsic motivation. New York: Plenum Press, 1975.
- Deci EL, Ryan RM. Intrinsic motivation and self-determination in human behavior. New York, NY: Plenum Press, 1985.
- Deci EL, Ryan RM. A motivational approach to self integration in personality. In R. Dientsbier (Ed.), Nebraska symposium on motivation: Vol: 38, Perspectives on motivation (ss. 237-388). Lincoln, NE: University of Nebraska Press, 1991.
- Ditton R. Human dimensions of fisheries. In M. Manfredo, J. Vaske, B. Bruyere, D. Field, P. Brown (Eds.), Society and natural resources: A summary of knowledge (pp. 199-208). Jefferson City, MO: Modern Litho, 2004.
- Ditton RB, Mertens TJ, Schwardz MP. Characteristics, Participation, and Motivations of Texas Charter Boat Fishermen. *Marine Fisheries Review*, 1978; 40(8): 8-13
- Ditton RB, Sutton SG. Substitutability in Recreational Fishing. *Human Dimensions of Wildlife*, 2004; 9:87-102.
- Driver BL, Knopf RC. Temporary escape: One product of sport fisheries management. *Fisheries*, 1976; 1(2): 21, 24-29.
- Driver BL, Cooksey RW. Preferred psychological outcomes of recreational fishing. In R. A. Barhnart and T. D. Roelofs (Eds.), *Catch-and-Release Fishing as a Management Tool: A National Sportfishing Symposium Proceedings* (pp. 27-40). Arcata, CA: Humboldt State University, 1977.
- Driver BL, Brown P, Peterson G. Benefits of leisure. State College, PA: Venture Publishing, Inc., 1991.
- Dweck C. Motivational processes affecting learning. *American Psychologist*, 1986; 41: 1040-1048.
- Fedler A, Ditton R. Understanding angler motivations in fisheries management. *Fisheries*, 1994; 19: 6-13.
- Field A. Discovering Statistics Using SPSS. Second Edition, Sage Publications, London, Thousand Oaks, New Delhi, 2005.
- Floyd MF, Nicholas L, Lee I, Lee JH, Scott D. Social Stratification in Recreational Fishing Participation: Research and Policy Implications. *Leisure Sciences*, 2006; 28(4): 351-368.
- Hunt K, Ditton RB. Perceived Benefits of Recreational Fishing to Hispanic-American and Anglo Anglers. *Human Dimensions of Wildlife*, 2001; 6(3):153-172.
- Hunt K, Ditton RB. Freshwater fishing participation patterns of racial and ethnic groups in Texas. *North American Journal of Fisheries Management*, 2002; 22: 52-65.
- Ibrahim H, Cordes KA. Outdoor Recreation, Enrichment for a Lifetime, Second Edition, Sagamore Publishing, 2002.
- Knopf R, Driver B, Bassett JR. Motivations for fishing. *Transactions of the North American Wildlife and Natural Resources Conference*, 1973; 38: 191-204.
- Levy J. Motivation for Leisure: An Intereactionist Approach. In H. Ibrahim and R. Crandall (Eds.), *Leisure: A psychological approach*. Los Alamitos, CA: Hwong Publishing, 1979.
- Loomis DK, Ditton RB. Analysis of Motive and Participation Differences between Saltwater Sport and Tournament Fishermen. *North American Journal of Fisheries Management*, 1987; 7(4):482-487.
- MacCallum RC, Widaman KF, Zhang S, Hong S. Sample size in factor analysis. *Psychological Methods*, 1999; 4 (1):84-99.
- Manfredo M, Driver BL, Tarrant MA. Measuring leisure motivation: a meta-analysis of the recreation experience preference scales. *Journal of Leisure Research*, 28(3):188-213.
- Nicholls J. The competitive ethos and democratic education. Cambridge, MA: Harvard University Press, 1989. Plonczynski D.J. 2000. Measurement of motivation for exercise. *Health Educ Res*, 1996; 15: 695-705.
- Roberts G. Motivation in sport: Understanding and enhancing the motivation and achievement of children.

- In R. N. Singer, M. Murphy, C. K. Tennant (Eds.), *Handbook of research on sport psychology* (pp. 405-420). New York: Macmillan, 1993.
32. Schuett MA, Lu J, Ditton RB, Tseng YP. Sociodemographics, Motivations, and Behavior: The Case of Texas Anglers 1989–2004, *Human Dimensions of Wildlife: An International Journal*, 2010; 15(4): 247-261
 33. Şencan H. Sosyal ve Davranışsal Ölçümlerde Güvenilirlik ve Geçerlilik. Seçkin Yayıncılık, Ankara, 2005.
 34. Toth JF, Brown RB. Racial and gender meanings of why people participate in recreational fishing. *Leisure Sciences*, 1997; 19: 129–136.
 35. Wilde GR, Riechers RK, Ditton RB. Differences in Attitudes, Fishing Motives, and Demographic Characteristics between Tournament and Non-tournament Black Bass Anglers in Texas. *North American Journal of Fisheries Management*, 1998; 18(2): 422-431.