SPORT FAN MOTIVATION QUESTIONNAIRE: A STUDY OF VALIDITY AND RELIABILITY

Muhammed Emin KAFKAS[1]

Bilal ÇOBAN[2]

Armağan ŞAHİN KAFKAS[3]

ABSTRACT

The purpose of this research, Yousof Al-Thibiti (2004) Fan Motivational scale was developed by Turkish adapts and scales to analyze the validity and reliability. The study group was composed that Inonu University studying at different faculty of education between the age of 17-31 494'ü (%54) women and 421'i (%46) male students. Firstly of linguistic equivalence of the scale were examined. Secondly after linguistic equivalence was performed reliability analysis. The total scale internal consistency coefficients for sizes .85 and subscale range of .70-.78, the re-test reliability coefficients were between .79-.89. at the same time, exploratory factor analysis and confirmatory factor analysis is carried out with the scale and found to comply with the data. As a result of scale to measure the status of individuals to participate in sporting activities was found to have an appropriate structure.

Key Words: Fan, Motivation, Sport, Attendance, Factor analysis

TARAFTAR MOTİVASYON ÖLÇEĞİNİN TÜRKÇEYE UYARLANMASI: BİR GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI

ÖZET

Bu araştırmanın amacı, Yousof Al-Thibiti (2004) tarafından geliştirilen Taraftar Motivasyon Ölçeği'nin Türkçeye uyarlamak ve ölçeğin geçerlik ve güvenirlik analizlerini yapmaktır. Araştırmanın çalışma grubunu, İnönü Üniversitesinde eğitim fakültesine bağlı farklı bölümlerde okuyan 17-31 yaş arasında olan 494'ü (%54.0) kadın ve 421'i (%46.0) erkek toplam 915 öğrenci oluşturmaktadır. Öncelikle ölçeğin dilsel eşdeğerliği incelenmiş ve dilsel eşdeğerliğe sahip olduğu görüldükten sonra geçerlik ve güvenirlik analizleri yapılmıştır. Ölçeğin iç tutarlılık katsayıları. 70 ile .78, test-tekrar test güvenirlik katsayıları ise .79 ile .89 arasında bulunmuştur. Aynı zamanda ölçeğin açımlayıcı faktör analizi ve doğrulayıcı faktör analizleri de yapılmış ve verilerin uygunluğu saptanmıştır. Bu sonuçlara göre ölçeğin geçerli ve güvenilir bir ölçme aracı olduğu söylenebilir.

Anahtar Kelimeler: Taraftar, Motivasyon, Spor, Katılma, Faktör analizi

[1] Inönü University, School of Physical Education and Sport, Malatya, TURKEY
[2] Firat University, School of Physical Education and Sport, Elazığ, TURKEY
[3] Erciyes University, Institute of Health Sciences, Kayseri, TURKEY

INTRODUCTION

Sportive activities become one of the favorite spare time activities in our society. People participate into sportive activities for many reasons. Crowd of people sacrifice their various resources for the same reason is definitely not unreturned. People participating into sportive activities expect various things from the activities they participate. Individuals may not always obtain what they expected. But, people are generally interested in sportive activities because of these expectations. "The factors affecting the fans' participation to a sportive activity include fan motivation, game's attraction, economic factors, competitive factors, demographic factors, stadium factors, sport's value to society, sport participation and fan definition" (Shank, 2001). "Fan motivation factors can be *categorized under eight categories: feeling of excitement, self esteem benefit, escape from daily life, entertainment value, economic value (betting on activities), aesthetical value, need for intimacy and family needs*"(Wann, 1995).

Game's attraction, one of the factors affecting fans' participation to sport activities, refers to perceived value and importance of the game based on participants' skill level, team record, league position or special activities, opening day or all-star. In general the more attractive the game is, the more willing the fans to participate (Zhang et al., 1995). Among the factors that affect the fans' participation, the perceived importance of sport by the general society is also attributed. Zhang, Pease and Hui (1995) found that the more importance is attributed to sports, the more likely are the people to participate. The benefits of sport for the society include public solidarity (people coming together), public behavior, business enthusiasm (entertainment), search for superiority, social equity, heath awareness, personal quality (it forms one's character) and job opportunity (Zhang et al., 1995).

Krohn et al. attempted to define the factors affecting fan participation and found the following group factors: personal aims, enthusiasm and escape, inspiring, personal boredom and fan identity (Krohn et al., 1998). Personal aims factor affects the fans that have personal aims regarding sport activities. These personal aims can include status, power and safety. At the same time, some sport fans have a tendency to participate sport activities not only to participate to an activity but also to be a part of a group and get involved into the entire atmosphere of the game (Krohn et al., 1998).

Wann (1995) developed the Sport Fans Motivation Scale (SFMS) in order to assess the motivations of fans. SFMS includes eight motivating factors discussed earlier (self stress, self esteem benefit, escaping from daily life, entertainment value, economical value, aesthetical value, need for friendship and family needs). The latest attempt to develop a scale to analyze fan motivation was done by Mahony, Nakazawa, Funk, James, and Gladden (2002). The fan motivation scale developed by Yousof Al-Thibiti (2004) can be said to the most valid and reliable scale both because it covers all the previous fan motivation scales and it is the most up-to-date scale so far (Thibiti, 2004).

METHOD

This study is general survey model according to Karasar (2000) which is one of the descriptive research methods because the current situation is with the quantitative analysis of the data obtained from FMS (Karasar, 2000).

Research group

Research group is composed of 915 students aged 17-31 494 (54.0%) female and 421 (46.0%) male studying at different departments at Education School of İnönü University. Moreover 50 students studying at English Language Teaching department

who participate a regular sport activity actively or passively were involved into linguistic equivalence of the scale. And also 100 university students participated in the test-re-test analysis. The literature analysis about the adequacy of research group revealed that sample size must be between *100 and 250 (Preacher and MacCallum, 2002), at least five-, or even ten-, fold the number of items (Tavşancıl, 2002), fivefold the number of items (*Osborne ve Costello, 2004*), or ten-fold the number of items (Nunually, 1978)* (as cited in Kafkas, 2011). In this study, the sample size is about 45 fold of number of items (22 items).

Procedure

Original developed of the FMS, Yousof Al-Thibiti (2004), was contacted via e-mail. The author was asked for permission about the adaptation of the scale and the written permission was obtained via e-mail. Because of the problem caused by intercultural differences frequently faced in scale adaptation studies, adaptation process was done meticulously. The scale was translated into Turkish by three instructors working at English department of Foreign Languages School and next the consistency between two forms of the scale was assessed by 3 instructors working at Turkish department. The same instructors also discussed the Turkish scales obtained and required reductions were done in terms of meaning and grammar.

The factor analyses used in this study are usually used to develop psychological measurement instruments or to test the structure assumed to be based by the instrument. Factor analyses is a general technique which contain many different methods in order to form hypothetic variables called factors, less in number, based on the relationships between a group of variables (Stapleton 1997; Akça and Köse, 2008). Many researchers use factor analysis techniques to develop theories Exploratory Factor Analysis (EFA) and test theories Confirmatory Factor Analysis (CFA) (Rennie, 1997). EFA aims at obtaining information about the nature of the factors being measured with the instrument instead of checking a certain assumption when nothing is known about the number of factors that the instrument measure. CFA on the other hand is used in situations when the factor structure of the factors differs or not according to various variables. CFA is used at the later stages of the study in order to test a theory about latent variables (Tabachnick & Fidell 2001; Büyüköztürk et al., 2004a; Akça and Köse, 2008).

Data collection instruments

The FMS developed by Yousof Al-Thibiti (2004) is composed of 22 items and six dimensions.

Scale domains:

1. ***Game quality domain;*** 4 items and the attractiveness of the spectacular aspects of the activity watched during the sportive activities (α = .81),
2. ***Escape domain;*** 5 items and the state of escape from problems with stress ad troublesome psychological effects in the daily lives of the people participating sports activities (α = .86),
3. ***Boredom avoidance domain;*** 5 items and sportive activity participants' state of evaluating their spare time (α = .81),
4. ***Social domain;*** 3 items and the participants' state of communication and interaction during sportive activities (α = .77),
5. ***Entertainment domain;*** 3 items and sportive activity participants' state of entertainment and pleasure (α = .76),
6. ***Sport atmosphere domain;*** 2 items and participants' state of being in an exciting and different atmosphere escaping from monotony during sportive activities (α = .48).

Data Analysis

For the validity of the scale EFA, CFA, and discriminative validity analysis were used. And for the reliability of the scale internal consistency and test-re-test coefficients were estimated. Statistical analyses were done using SPSS 17.0 and Lisrel 8.5 software program and significance level was considered 0.05.

FINDINGS

Linguistic Equivalence

Respondents with a measuring tool, the language is different from the scale that must be applied back translation technique and language adaptation. Avoid adaptation of the exact translation in your language which is of the country to be applied, should be taken into consideration regional and cultural features, and answer any educational level (Fer & Cırık, 2006). For the adaptation of the scale into Turkish first linguistic equivalence was done (Table 1).

Table 1: FMS Linguistic Equivalence Findings

Domains		Item Number	$\bar{X}$	Sd	r
Escape	English Form	5	3.16	.76	.92
	Turkish Form		3.23	.87	
Game Quality	English Form	4	3.57	.93	.86
	Turkish Form		3.25	.84	
Sport Atmosphere	English Form	5	2.95	.69	.89
	Turkish Form		3.18	.91	
Social	English Form	3	3.80	.98	.81
	Turkish Form		3.53	.77	
Boredom Avoidance	English Form	3	3.66	.58	.96
	Turkish Form		3.53	.47	
Entertainment	English Form	2	3.23	.78	.83
	Turkish Form		3.63	.84	

Exploratory Factor Analysis

In the EFA to test the construct validity of FMS, first the correlation matrix between all the items was examined to check whether there are significant correlations between items and significant correlations were found which suggests suitability for factor analysis. Next, KMO and Barlett Sphericity tests were done to determine the sampling adequacy. To detect the sampling adequacy of the data for EFA, KMO must be more than .60 and Barlett test must be significant (Büyüköztürk, 2004b). Factor analysis is used to reach significant structures from many variables, to reveal structure(s) called factors which the scale items measure. Thus, in line with the factor intercorrelated items from the factors (Balcı, 2001; Bryman & Cramer, 1997; Büyüköztürk, 2002). To test the construct validity factor analysis was used. According to Büyüköztürk (2002) the following criteria are used to discard the items not measuring the same structure in EFA and to decide the number of factors: items with eigenvalues more than 1 are taken as important factors. High variance rate explained is an indicator of better measurement of the relevant structure. For the factor to measure the item it defines, the factor loading which show its relation with the factor is preferred to be .45 or more. But, the loading for a few items can be reduced to .30. Moreover, the difference between two high factor loadings must be .10 at least. Because the item which gives more than one high factor loadings in a multifactor structure is a overlapping item and must be discarded.

In this study KMO sampling adequacy coefficient was found .88, Barlett Sphericity test ($\chi 2$) was found 4949,327 ($p< .001$).

The factor analysis was started with the 22 items in the original form of the scale. When item total correlations were analyzed no items with a value under .30 was found. In order to discard an item one can check the change in alpha coefficient and scale mean after deleting the item (Kafkas, 2011; Buluş, 2001; Dağ, 2002; Özgüven, 1994; Tekin, 1996; Turgut, 1997).

It was seen that the scale explained 57,02% of the variance and contained 22 items and 6 domains. Moreover, it was detected that the inventory accumulated at 6 factors with eigenvalues bigger than 1. Out of this 25.80% was at escape domain, 7.80% at game quality, 6.90% at sport atmosphere, 6.28% at social, 5.05% at boredom avoidance and 5.19% at entertainment domain. The findings about scale's factor loadings and the variance rates it explained are presented in Table 2.

Table 2: Findings about factor loadings and the variance rates it explained

Items	Escape	Game Quality	Sport Atmosphere	Social	Boredom Avoidance	Entertainment
19	.703					
18	.689					
27	.585					
12	.506					
13		.750				
20		.648				
25		.568				
26		.507				
5			.562			
4			.545			
8			.528			
6			.499			
16				.686		
11				.651		
7				.585		
1					.760	
2					.663	
3					.632	
24						.697
17						.695
22						.692
10						.680
%57.02	%25.80	%7.80	%6.90	%6.28	%5.05	%5.19

Confirmatory Factor Analysis

There is some goodness of fit indices commonly used for CFA. X^2 test gives the measure of the extent to which the observed correlation matrix for CFA differs from theoretical correlation matrix. Low X^2 values mean the model and the data has good fit (Akça and Köse, 2008). Another goodness of fit index commonly used for CFA is Goodness Fit Index-GFI, and it takes values between 0.00 and 1.00, for which negative values are characterized as meaningless theoretically. A GFI value over .85 is considered sufficient, but values .95 and over show optimum fit of the data to the model (Frias & Dixon, 2005). Another important goodness of fit index used for CFA is Bentler's Comparative Fit Index-CFI. CFI takes values between 0.00 and 1.00. CFI values equal to .90 and over show that model is acceptable. This means that the index can be explained at 90% with the model suggested by covariance. Other goodness of fit index used in CFA is Root Mean Square of Approximation-RMSEA. RMSEA values equal to .05 and lower is an

indicator of optimum fit. But values equal to .08 and lower are also acceptable (Baydur & Eser, 2006).

Table 3: FMS's Fitness for Six-Factor and X^2 Analyses

	Chi-Square (X^2)	p	X^2/Sd	CFI	GFI	RMSEA
6- Factor Model	2345.87	.000	2.43	.93	.86	.046

When the Table 3 is examined, it shows that the data obtained as a result of construct validity are X^2=2345.87, X^2/Sd=2.43, CFI=.93, GFI=.86 and RMSEA=.046. These findings suggest that the scale is suitable in terms of construct validity.

Reliability

The internal consistency coefficients for the FMS was found .77 for escaping domain, .77 for game quality domain, .71 for sport atmosphere domain, .70 for social domain, .78 for boredom avoidance domain, .76 for entertainment domain and .85 for the entire scale. For the test-re-test reliability study, Turkish form of FMS was applied twice in two weeks to 40 students among 915 students at Education School of İnönü University who voluntarily accepted to participate into the study. The test-retest reliability coefficients for the scale are presented in table 4.

Table 4: Test-retest reliability coefficients of the scale

Domains	Applications	X	Sd	
Escape	1st Applications	3.21	.64	
	2nd Applications	3.32	.86	.89
Game Quality	1st Applications	3.35	.59	
	2nd Applications	3.03	.78	.79
Sport Atmosphere	1st Applications	2.86	.74	
	2nd Applications	3.01	.66	.84
Social	1st Applications	3.84	.62	
	2nd Applications	3.67	.85	.87
Boredom Avoidance	1st Applications	3.75	.47	
	2. Applications	3.61	.51	.89
Entertainment	1st Applications	3.13	.71	
	2. Applications	3.27	.82	.88

It was detected that in the FMS's test-retest reliability analysis that for all domains the correlation coefficients estimated for 1st and 2nd applications were high.

CONCLUSION AND RECOMMENDATIONS

This study aimed to adapt the FMS into Turkish and to investigate the validity and reliability analysis. In the scale adaptation process, first linguistic integrity study must be done. In this context as a result of the linguistic equivalency study, the correlations between scores from FMS' Turkish and English forms were estimated and a consistency between both forms was detected to be r= .81 minimum and r= .96 maximum. These coefficients obtained are significant in terms of showing that the process of adapting original scale into Turkish language and culture was successful.

As a result of the EFA, a 6 domain structure which explains 57.02% of the variance was obtained. All of the items under each domain were not distributed according to the factors in the original form.

The high internal consistency coefficients on the scale show that scale's internal consistency is at adequate level. Scale's score stableness was analyzed with test-re-test method. Considering that the reliability level suggested for instruments to be used in researches is .70 (Tezbaşaran, 1997), the reliability levels for all the domains can be said to be adequate.

The high correlation coefficients between English and Turkish form scores show that translated items are consistent with the original ones and Turkish form of the scale is equivalent to the original form. As a result of the EFA in order to test the construct validity of the scale, total variance rate was found 57.02%. Considering that 30% and over is taken as a criterion for explained variance rate in scale development and adaptation studies it is seen that scale's construct validity is ensured. It is also seen that test-re-test reliability coefficients were high. It is also seen that in terms of CFA goodness of fit indices done for the scale's construct validity the scale has a construct suitable with the reference values obtained in examples in the literature. Considering that FMS is an instrument which is used only in researches, these coefficients can be said to be adequate.

Consequently, it is believed that the Turkish form of FMS is a valid and reliable form in determining the individuals' state of participation to sportive activities and can meet the need in this field.

REFERENCES

1. Akça F., ve Köse A., "Ölüm Kaygısı Ölçeğinin Uyarlanması: Geçerlik ve Güvenirlik Çalışması". Klinik Psikiyatri, 11: pp. 7-16, 2008.
2. Balcı. A., Sosyal bilimlerde araştırma, Pegem Yayıncılık, 3. Baskı, Ankara, 2001.
3. Baydur H., ve Eser E., "Uygulama: Yaşam Kalitesi Ölçeklerinin Psikometrik Çözümlemesi". Sağlıkta Birikim, 1(2): pp. 99-123, 2006.
4. Bryman. A., & Cramer. D., Quantitative data Analysis with SPSS for windows: A guide for social scientists, Routledge, New York, 1997.
5. Buluş M., "Kişi algı ölçeğinin öğretmen adayları için güvenirlik ve geçerlik çalışması". Eğitim araştırmaları, 5, pp. 29-35. 2001.
6. Büyüköztürk Ş., Akgün Ö., Kahveci Ö., & Demirel F., "Güdülenme ve Öğrenme Stratejileri Ölçeği'nin Türkçe formunun geçerlik ve güvenirlik çalışması" Kuram ve Uygulamada Eğitim Bilimleri, 4(2): pp. 207-239. 2004a.
7. Büyüköztürk. Ş., Sosyal bilimler için veri analizi el kitabı, Pegem A Yayıncılık, Ankara, 2002.
8. Büyüköztürk. Ş., Veri analizi el kitabı, Pegem A Yayıncılık, Ankara, 2004b.
9. Dağ İ., "Kontrol odağı ölçeği (KOÖ): Ölçek geliştirme, güvenirlik ve geçerlik çalışması". Türk Psikoloji Dergisi, 17 (49): pp. 77-90. 2002.
10. Fer S., & Cırık İ., "Öğretmenlerde ve öğrencilerde, yapılandırmacı öğrenme ortamı ölçeğinin geçerlik ve güvenirlik çalışması nedir?" Yeditepe Universitesi Eğitim Fakültesi Dergisi,, 2(1): pp. 1-27, 2006.
11. Frias C.M., Dixon R.A., "Confirmatory factor structure and measurement invariance of the memory compensation questionare". Psychol Assess, 17(2): pp. 168-178, 2005.
12. Kafkas M.E., "Çocuklar İçin Sporda Hayal Etme Ölçeğinin Türkçeye Uyarlanması: Bir Geçerlik ve Güvenirlik Çalışması". Niğde Spor Bilimleri Dergisi, 5(2): pp. 101-109, 2011.
13. Karasar. N., Bilimsel Araştırma Yöntemi, Nobel Yayın Dağıtım,10. Baskı, Ankara, 2000.
14. Krohn F.B., Clarke M., Preston E., McDonald M., & Preston B., "Psychological and sociological influences on attendance at small college sporting events" College Student Journal, 32(2): pp. 277-288. 1998.
15. Mahony D.F., Nakazawa M., Funk D.C., James J.D., & Gladden J.M., "Motivational factors influencing the behaviour of J. League Spectators" Sport Management Review, 5(1): pp. 1-24. 2002.
16. Osborne J.W., & Costello A.B., "Sample size and subject to item ratio in principal components analysis" Practical Assessment, Research & Evaluation, 9(11). 2004. (http://pareonline.net/getvn.asp?v=9&n=11 10.10.2011)
17. Özgüven. İ.E., Psikolojik testler, Yeni Doğuş Matbaası, Ankara, 1994.
18. Preacher K.J., & MacCallum R.C., "Exploratory factor analysis in behavior genetics research: Factor recovery with smallsample size" Behavior Genetics, 32(2): pp.153-161. 2002.
19. Rennie K.M., "Exploratory and confirmatory rotation strategies in exploratory factor analysis". Paper Presented at The Annual Meeting of The Southeast Education Research Association, Austin. 1997.
20. Shank. M.D., Sports marketing: A strategic perspective, Upper Saddle River, NJ: Prentice Hall, 2001.
21. Stapleton C.D., "Basic Concepts in Exploratory Factor Analysis As a Tool to Evaluate Score Validity: A Right-Brained Approach". Paper Presented at The Annual Meeting of The Southeast Education Research Association, Austin. 1997.
22. Tabachnick. G.B., Fidell. S.L., Using Multivariate Statistics, A Pearson Education Company, 4. Baskı, New York, 2001.
23. Tavşancıl. E., Tutumların Ölçülmesi ve SPSS ile Veri Analizi, Nobel Yayın Dağıtım, Ankara, 2002.
24. Tekin. H., Eğitimde ölçme ve değerlendirme, Yargı yayınları, Ankara, 1996.
25. Tezbaşaran A.A., Likert tipi ölçek geliştirme kılavuzu, Türk Psikologlar Derneği Yayınları, Ankara, 1996.
26. Thibiti A.Y., "A Scale Develepmont For Sport Fan Motivation". Yayımlanmış Doktora Tezi. Florida State University College of Education. 2004.
27. Turgut. M.F., Eğitimde ölçme ve değerlendirme metotları, Gül Yayınevi, Ankara, 1997.
28. Wann D.L., "Preliminary validation of sport fan motivation scale" Journal of Sport & Social Issues, 19(4): pp. 377-396, 1995.
29. Zhang J.J., Pease D.G., Hui S.C., & Michaud T.J., "Variables affecting the spectator decision to attend NBA games" Sports Marketing Quarterly, 4(4): pp. 29-39, 1999