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ORIGINAL ARTICLE

ASSESSING THE VALIDITY AND RELIABILITY OF THE SPORT CONSUMPTION BEHAVIOR SCALE ON TURKISH FOOTBALL SPECTATORS

Abstract

The aim of this study is to examine the psychometric properties of the Turkish version of Sport Consumption Behavior Intention Scale (SCB). The data for the study were obtained from 694 spectators of three different professional football teams. The results of confirmatory factor analysis applied to the data have revealed that the data set was in good fit with the three factor structure formed. Moreover, internal consistency coefficients calculated have shown that the sub-dimensions of attendance intention, media consumption intention and licensed merchandise consumption intention included in the scale are highly reliable. Statistical results obtained from the study show that the adapted Turkish version of the scale was a valid and reliable measurement instrument.

Keywords: Sport consumption behavior, scale adaptation, professional football, validity, reliability.

INTRODUCTION

Sports and related activities have an explicit place in individuals' lives. Today, particularly in modern societies, it is almost impossible to come across an individual who is not related to sports in some way. However, this interest is not enough for the organizations in the sports industry to continue their development and existence. Improvement of this interest and its effective management is necessary for sports organizations to sustain their competitive advantage.

For the financial success of sports organizations, spectator interest is a significant determinant (Dobie et al., 2005). In professional sports organizations, the interest of spectators and fans form their behavior towards sport consumption. Sport consumption behavior of sports fans and spectators is made up of three elements namely attendance in sports events, sports media consumption and licensed merchandise consumption (Kim and Trail, 2011).

Ensuring attendance in the relating activity is extremely important for sports organizations. Individuals attending in an activity make direct and indirect contributions to the revenues of the organization. In the 1980s, revenues of professional sports organizations used to consist mainly of gate receipts (Shank, 2005). Gate receipts highly depended on the team's success in the field. Today, similarly, success in the field is directly related to spectator attendance. The number of spectators going up with the success achieved in the field, increase concessions and merchandise incomes as well as gate receipts (De Schriver and Yensen, 2002). Moreover, the incomes of sports clubs from ticket sales are going down in the general budget while incomes of broadcast rights, sponsorship, merchandising and licensing are increasing recently (Kesenne, 2007).

Sports organizations are attaching more and more importance to media consumption behaviors of their target groups of fans and spectators. The most important reason for this is, undoubtedly, the contribution of the fans and spectators of the sports organization to the formation of broadcast revenues (Kim and Trail, 2011). Media companies arrange their broadcast stream in accordance with the interest of sport fans. In addition, sponsors of the related sports organization affect the scope of the broadcast stream. Sponsors determine the investments they make into the sports organization considering the support of fans. Sponsors, merchandising business and broadcasting organizations show higher interest in successive

clubs with more spectators (Kesenne, 2007). The more the attendance is in the event, the higher the value of sponsorship rights of the event is (Levin and Mc Donald, 2009). As the interest of advertisements in sports continues, broadcasting companies will be prepared to make more payments to obtain the broadcast rights of the events (Shank, 2005).

Besides the revenues obtained from gate receipts and media, revenues from licensed product sales have constituted a remarkable part of sports industry in a very short time (Mullin et al., 2000). Licensed products having an important share in the budgets of sports organizations (Dobie et al., 2005), attract the attention of sports organizations to increase brand awareness in the market (Carenys and Sales, 2012). Licensed products also contribute considerably to the development and sustainment of the commitment between sports organizations and spectators. The sustainability of the existence of sports organizations within the competitive sports industry is in close relation with spectators' intentions in game attendance, media consumption and licensed merchandise consumption.

The aim of this study is to adapt Sport Consumption Behavior Intention Scale (SCB) developed by Kim et al. (2011) into Turkish. SCB is originally in English. It consists of nine items under three sub-dimensions: attendance intention, sport media consumption intention and licensed merchandise consumption intention (Kim et al., 2011). In their study, Kim et al. (2011) took the related items existed in previous studies (Fink et al., 2002; Trail, et al., 2005; Kwon et al., 2007). The validity and reliability of the original scale was conducted on intercollegiate football spectators ($M_{age} = 25.49$; $SD. = 10.24$). This study will contribute to design a suitable structure for the development of goal-oriented active strategies. Especially in a highly globalized sport industry, understanding and making some comparisons of sports consumption behaviors from different cultures might be possible by using the same measurement tools.

METHOD

Participants

The data included for the analysis were obtained from the spectators of three different professional football teams 233 (33.6%) Göztepe SC, 247 (35.6%) Karşıyaka SC and 214 (30.8%) Buca SC. Spectators consisted of 514 (74.1%) males and 180 (25.9%) females. Convenience sampling method was used in the study. The average age of the spectators was 25 years old ($M_{age} = 25.27$, $SD. = 8.66$). Göztepe SC, Karşıyaka SC and Buca SC teams were

playing their games in different stadiums in different parts of the city. In line with the aim of this study, in order to strengthen the measurement tool's validity and reliability, and to examine the psychometric measurement errors of the scale resulting from team differences, the data were analyzed on the basis of the general sample and for each team separately.

Measurement tool

The SCB (Kim et al., 2011) was used in the study. The scale consists of three items for each listed under the sub-dimensions of attendance intention, sport media consumption intention and licensed merchandise consumption intention. Two of the items under the attendance intention sub-dimension were taken from the study of Trail et al. (2005) and one was taken from the study of Kwon et al. (2007) (Kim et al., 2011). Two of the items under the sport media consumption intention sub-dimension were taken from the study of Fink et al. (2002), one was taken from the study of Trail et al. (2005) and three items under licensed merchandise consumption intention sub-dimension were adapted from the study of Kwon et al. (2007) (Kim et al., 2011).

The items composing the scale were translated into Turkish by researchers. After the translations, a form was generated including the original items and their Turkish translations. This form was given to sport management professionals for expert opinion. As a result of the expert opinions, the scale was given its final form which was ready for application. The Turkish version of the SCB is assessed over a five point Likert type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The mean of item scores are used for each sub-dimension. Possible mean score from each sub-dimension changes from 1 to 5.

Procedure

A convenience sampling method was used in this study. Eight students of sport management department and the researchers were positioned in the stadium before the games started. Spectators were informed for the purpose of the study and invited to participate in the study and provide sincere responses. A total of 900 questionnaires (300 for each team) distributed and collected immediately before the games started. There were 206 questionnaires that were disqualified due to having missing values and incomplete information. A total of 694 spectators filled out the questionnaires successfully by face-to-face administration.

Data Analysis

For the descriptive analysis and internal consistency coefficient (Cronbach's Alpha) calculations SPSS 13.0 statistical package program; for the confirmatory factor analysis (CFA), LISREL 8.54 statistical package program was used. In this analysis, chi-square statistics (χ^2/df) and various fit indexes of RMSEA, SRMR, NFI, CFI, GFI were taken into consideration. Maximum likelihood estimation method was used to understand the parameters that best fit the data.

RESULTS

Table 1: Mean, standard deviation and reliability results (cronbach's alpha) of the proposed items and sub-scales for professional football teams

Dimension	Team 1 (Göztepe SC)			Team 2 (Karşıyaka SC)			Team 3 (Buca SC)			General (All Teams)		
	M	SD.	α (r_{ij})	M	SD.	α (r_{ij})	M	SD.	α (r_{ij})	M	SD.	α (r_{ij})
Attendance Intention												
I intend to attend the (Team Name)'s game(s)	4.19	1.14		4.59	.80		3.68	1.34		4.18	1.16	
The likelihood that I will attend the (Team Name)'s game(s) in the future is high	4.24	1.07	.82 (.60)	4.60	.66	.71 (.46)	3.88	1.01	.78 (.55)	2.46	.97	.81 (.60)
I will attend the (Team Name)'s game(s) in the future	4.22	1.11		4.64	.66		3.73	1.17		4.21	1.06	
Media Consumption Intention												
I will track the news on the (Team Name) through the media (e.g., TV, Internet, Radio, etc.)	3.79	1.39		4.42	.83		3.53	1.29		3.93	1.24	
I will watch or listen to the (Team Name)'s game(s) through the media (e.g., TV, Internet, Radio, etc.)	3.86	1.35	.78 (.54)	4.47	.88	.75 (.50)	3.57	1.23	.76 (.52)	3.99	1.22	.80 (.57)
I will support the (Team Name) by watching or listening to (Team Name)'s game(s) through the media (e.g., TV, Internet, Radio, etc.)	3.84	1.25		4.54	.79		3.64	1.28		4.03	1.21	
Licensed Merchandise Consumption Intention												
I am likely to purchase (Team Name)'s licensed merchandise in the future	4.09	1.18		4.62	.68		3.69	1.19		4.16	1.10	
In the future, purchasing (Team Name) licensed merchandise is something I plan to do	4.11	1.17	.93 (.81)	4.69	.64	.74 (.50)	3.81	1.08	.76 (.51)	4.22	1.05	.87 (.69)
In the future, I intend to purchase licensed merchandise representing the (Team Name)	4.12	1.23		4.75	.59		3.79	1.20		4.24	1.11	

** $p < .01$

As a result of the analyses applied on the data obtained from the general sample, internal consistency coefficients (Cronbach's alpha and mean of inter-item correlation) of the sub-dimensions forming the scale were found to be .81 for attendance intention, .80 for media consumption intention and .87 for licensed merchandise consumption intention. In addition, with the analyses carried out separately on the basis of teams, it was found that internal consistency coefficients ranged between .78 and .93 for Göztepe SC, .71 and .75 for Karşıyaka SC and .76 and .78 for Buca SC. The mean of inter-item correlations can be seen on Table 1.

Table 2: Parameters of the SCB factor correlations for each sample

	General Sample (All Teams)		Team 1 (Göztepe SC)		Team 2 (Karşıyaka SC)		Team 3 (Buca SC)	
	AI	MCI	AI	MCI	AI	MCI	AI	MCI
MCI	.588**		.502**		.481**		.582**	
LMCI	.806**	.609**	.790**	.486**	.725**	.603**	.786**	.606**

AI = Attendance Intention, MCI = Media Consumption Intention, LMCI = Licensed Merchandise Consumption Intention

** $p < .01$

The correlations among the SCB sub-dimensions ranged from .588 to .806 for the general sample. It was found that correlations among SCB sub-dimensions ranged between .486 and .790 for Göztepe SC, .481 and .725 for Karşıyaka SC and .582 and .786 for Buca SC (Table 2). All correlations were statistically significant ($p < .01$) and in the expected direction.

Table 3: Chi-square statistic and fit indexes of SCB for all groups

	Team 1 (Göztepe SC)	Team 2 (Karşıyaka SC)	Team 3 (Buca SC)	General (All Teams)
χ^2/df	1.65	1.99	2.48	1.89
RMSEA (90% CI)	.053 (.014-.085)	.063 (.026-.099)	.084 (.049-.119)	.036 (.011-.058)
SRMR	.018	.025	.032	.012
NNFI	.99	.97	.95	.99
GFI	.97	.98	.96	.99
CFI	.99	.99	.98	1.00

χ^2/df =Chi-Square/Degrees of Freedom, RMSEA=Root Mean Square Error of Approximation, CI=Confidence Interval, SRMR=Standardized Root Mean Square Residual, NNFI=Non-Normed Fit Index, CFI=Comparative Fit Index, GFI=Goodness-of-Fit Index

Fit indexes obtained from CFA were taken into consideration. The results of the chi-square/df values were calculated as 1.65 for Göztepe SC, 1.99 for Karşıyaka SC, 2.48 for Buca SC and 1.89 for the general sample. Various fit indexes for Göztepe SC, Karşıyaka SC Buca SC, and for the general sample can be seen on Table 3.

Standardized λ (Lambda) values obtained from the CFA carried out to test the fit of the data set obtained from the study with the original structure ranged between .73 and .95 for Göztepe SC, .57 and .89 for Karşıyaka SC, .69 and .82 for Buca SC and between .69 and .91

for the general sample. It was determined that R² values ranged between .53 and .90 for Göztepe SC, .29 and .80 for Karşıyaka SC, .39 and .78 for Buca SC and between .48 and .83 for the general sample. t-values of the items were found between 9.35 and 19.30 for Göztepe SC, 7.75 and 14.28 for Karşıyaka SC, 9.83 and 15.74 for Buca SC and between 18.44 and 30.62 for the general sample ($p < .01$) (Table 4).

Table 4: Standardized factor loadings (λ), r^2 and t values of the proposed items of sub-scales on confirmatory factor analysis

Dimension	Team 1 (Göztepe SC)			Team 2 (Karşıyaka SC)			Team 3 (Buca SC)			General (All Teams)		
	λ	R ²	t	λ	R ²	t	λ	R ²	t	λ	R ²	t
Attendance Intention												
Item 1	.73	.53	12.67**	.61	.39	9.85**	.82	.68	15.14**	.69	.48	18.44**
Item 4	.90	.80	17.32**	.82	.62	11.62**	.81	.67	13.90**	.81	.66	21.23**
Item 7	.88	.77	16.67**	.89	.65	12.00**	.74	.53	12.16**	.82	.67	22.11**
Media Consumption Intention												
Item 2	.74	.55	9.35**	.57	.29	7.75**	.78	.72	13.98**	.76	.57	21.00**
Item 5	.79	.63	13.09**	.77	.51	11.39**	.80	.53	12.30**	.82	.67	24.82**
Item 8	.91	.84	15.56**	.86	.80	14.28**	.73	.39	9.83**	.88	.78	26.90**
Licensed Merchandise Consumption Intention												
Item 3	.94	.88	18.98**	.74	.43	10.50**	.88	.78	15.74**	.91	.83	30.62**
Item 6	.93	.86	18.56**	.80	.61	13.26**	.69	.47	11.08**	.87	.76	28.45**
Item 9	.95	.90	19.30**	.82	.66	13.74**	.70	.49	11.61**	.88	.77	28.86**

** $p < .01$

DISCUSSION

As a result of the reliability analyses carried out separately and for the general sample, internal consistency coefficient (Cronbach's alpha) values for all sub-dimensions ranged between .71 and .93 (Table 1) has shown that the sub-dimensions of the measurement instrument used in the study are sufficiently reliable. Values of .70 and .80 internal consistency coefficients (Cronbach's Alpha) calculated for psychological tests are considered as an indicator that the measurement instrument in use is sufficiently reliable (Nunnally, 1978). Values of .80 and higher are identified as very good (Nunnally and Bernstein, 1994). These findings also support the original scale in terms of reliability (Kim et al., 2011).

It can be seen that the results of chi-square statistic, which is an extremely important test for the evaluation of the conformity of the model created and applied within the scope of CFA with the data set (Bollen, 1989), are lower than 2 for the groups of Göztepe SC, Karşıyaka SC and the general sample; and lower than 3 for Buca SC. In relation with this, Chau (1997) and Schmelleh-Engel et al. (2003) suggested that lower than 3 results of chi-square statistic show good fit while those lower than 2 were indicators of perfect fit. In conclusion, it was seen that the formed structure is at high conformity with the data set.

Furthermore, as for the other fit indexes included in the evaluation within the scope of CFA, values between .05 and .08 for RMSEA and SRMR are considered as indicators of good fit and values lower than .05 of perfect fit (Byrne, 1998; Kelloway, 1998; Hu and Bentler, 1999; Mc Donald and Moon-Ho, 2002; Schmelleh-Engel et al., 2003). The lower band of the confidence intervals (90% CI) of RMSEA should be less than .05 (Kline, 2011). In addition to these indexes, Marsh et al. (1988), Hu and Bentler (1999), Schmelleh-Engel et al., (2003) suggested that values of NNFI, CFI, and GFI between .90 and .95 were indicators of good fit and those between .95 and 1.00 were indicators of perfect fit. Considering the fit indexes calculated in the study, it has been found out that the data obtained from the groups of Buca SC, Göztepe SC, Karşıyaka SC and the general sample had good fit with the formed factor structure.

As a result of the CFA applied to the data set, it was found that t values which show the degree that items can explain the sub-dimensions, λ (Lambda) values which indicate the importance of items in terms of the sub-dimensions they are related to; and R^2 values which present how much of the change in the sub-dimensions can be explained by the items related to them were statistically significant for all groups ($p < .01$; Table 4). In terms of the conformity of the items with factor structure, λ (Lambda) values were taken as .50 and more (Bollen, 1989) and R^2 values as .20 and more (Hooper et al., 2008) as the criteria. In their studies, Kelloway (1998) and Hair et al. (2006) stated that in order for the t value to be statistically significant it had to be a minimum 1.96 at $p < .05$ level while Şimşek (2007) stated that the t value had to be 2.576 at minimum at the level of $p < .01$. All these values obtained in the study showed that the formed structure has a conceptual quality.

Considering the results obtained from this study, it has been concluded that the Turkish version of the Sport Consumption Intention Scale is a reliable and valid measurement instrument in determining consumption behaviors of professional football teams' spectators. Although our findings support the validity and reliability of the Turkish version of the SCB, it would be beneficial to consider other sport types and sport levels for future researches. The items of the SCB focused on general time frame for the purpose of the study. Items should be limited to a specific time frame (e.g., this season, next season) by the researchers and managers who wish to predict sport consumption intentions of their potential spectators.

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