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## Turkish adaptation of soccer referee decision satisfaction scale (SRDSS)

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### Abstract

The purpose of the present study is testing the validity and reliability of Turkish adaptation of Referee Decision Scale developed by Andrew et. al. (2006). Referee decision scale was developed in order to describe the accuracy-error relations between themes of opinion, concentration, and control that affect the ideal decision-making processes of referees; and crowd factor, player reaction and environmental factors; and to measure the referees' sense of satisfaction related to their decisions. The scale consists of 9 items and a single factor on a 5-level likert type grading. Each item is graded on a scale from (0)= Never to (4)=Always. The present research is conducted on 96 referees serving in various division levels in the province of Mugla. The scale's conformity to Turkish is tested via confirmatory factor analysis. Cronbach alpha value of the scale was calculated as 0.85. Findings of the present research revealed that; Turkish adaptation of the scale is able to describe the decision satisfaction levels of referees serving in Turkey.

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### 1. Introduction

Magic world of soccer attracts millions of people without making any discriminations (language, religion, race, gender, age, etc.). Each person within this attraction, can find various opportunities of satisfaction in the effects of this magic world. For this reason, people follow the game of soccer with interest and this process may produce

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socio-economic, socio-cultural, and even socio-political results. More than a 100 year-old adventure of game of soccer created a large-scale socio-economic network of relations. Sustainability of these relations is of great importance for each partner of the game of soccer. Undoubtedly, while the technical and aesthetic dimension of soccer is important for the technical elements (coach, referee, player, spectator, etc.) of soccer; maintenance of the competition environment is important for the managing shareholders of soccer. On the other hand, expectations of each shareholder of soccer from this magic world are unbelievably various. This magic attraction needs to be maintained for the occurrence of these expectations created by the magic world of soccer and the satisfaction of these expectations. In this sense, soccer refereeing constitutes the most important angle of the “golden triangle” of soccer (Kilinc, 2008 and Yilmaz, 2002).

Soccer refereeing holds the most critical positions for all shareholders of the game of soccer. Referee decisions become more important with the fact that expectations and satisfactions of every shareholder of the game soccer are dependent on these decisions. Therefore, decision-making processes of referees should be analyzed carefully. For this reason, the present study is conducted in order to adapt to Turkish the “Referee Decision Scale” developed by Andrew et al in 2006 which describes 13 different themes related to referee decision-making process that involves the sub-dimensions of accuracy-error, regulations, professionalism which analyze the decision-making processes of soccer referees. The research conducted by Andrew et al in 2006, examined the factors that influence the decision-making of referees under 13 themes classified into four higher order themes. Accuracy-error, regulations, and professionalism themes formed the “ideal decision-making” higher-order theme; opinions, concentration, and control themes formed the “individual factors” higher-order theme; experience, personality, and personal life themes formed the “experience factor” higher-order theme; and crowd factors, player reaction, environmental factors and crowd reaction formed the “situational factors” higher-order theme.

Besides, it is predicted that, how the themes used in this research were developed and how they used to describe the world of refereeing will be explained with meticulous analytical processes.

Crowd factor theme describes how crowds can influence the referee decisions directly even in cases when the referees don't intend to make decisions based on crowds. The spectators do not necessarily influence the decisions only in big games, crowd is a powerful factor in smaller scale games as well.

Accuracy theme depends on the perceptions that referees can make correct decisions objectively. Incorrect decisions are perceived as faulty and incorrect. Accuracy can be provided with technology, video-recorded matches and assistant referees. This way, incorrect decisions made within the logical reasons such as speed or optimum viewing angle can be corrected. The concept of accuracy suggests that all decisions are clear as black and white and there is no room for contradictory decisions.

Accepting the errors as the errors in the human nature indicates the existing of an efficient method of handling the pressure existing in the core of providing the continuance of “accuracy”. If referees can make mistakes as all human beings, then the incorrect decisions are unavoidable. In this case, referees can be excused of the burden of not-making-any-mistakes, to some extent (Craven, 1998, Sanabria et al., 1989).

Experience theme can actually be part of a number of other themes. This theme is clearly in interaction with many other themes; for instance, it can help to reduce mistakes when faced with difficult situations. Besides, in interaction with crowd factor theme, experience theme can help moderating the pressure of crowded spectators.

Referees want to referee games appropriately, conforming to the rules, and avoiding from errors. It can be claimed that qualitative results showing the importance of application of the rules correctly arises from the referee-training courses that emphasize learning the rules. Results also indicate the potential reasons for stress that referees face. Previous researches have emphasized that refereeing has stressful aspects (Anshel and Weinberg 1999; Kaissidis and Anshel 1993; Kaissidis-Rodafinos et al., 1997; Stewart and Ellery 1998; Taylor 1990, Tindall, 1994). Balmer et al. (2006) showed that increased anxiety along with inconsistent refereeing decisions were related with crowd noise. Therefore, it is claimed that anticipating giving incorrect decisions (according to the referees' correct decision perception) would cause anxiety and stress.

An important aspect of experimental study conducted by Balmer et al. (2006) is the concept of inconsistent decisions, in other words, participants make different decisions in the same incident. Findings of the present study that shows the importance of referees' making correct decisions, post-game performance analysis and the degree of reflecting the refereeing skills present that inconsistent performances of referees are also a great source of concern. Previous studies suggest that inconsistent refereeing decisions can be attributed to crowd noise (Balmer et al., 2006).

Nevil et al. (2002) compared the 1st group that made decisions in silence and the 2nd group that made decisions in crowd noise. Balmer et al. (2006) tried to control the within-subject variation by measuring the performances of participants in both conditions (crowd noise and silence). Apparently, the research didn't test the performance variation by comparing the two decision-making performances in the same situation (silence-silence and crowd noise-crowd noise). However, future researches should not take this limitation in to consideration.

## 2. Research method

### 2.1. Work group

96 soccer referees selected through simple sampling method among soccer referees with various division levels serving actively in 2013-2014 soccer season participated in the research. Age average of the participants is  $29\pm 6$ , and length of service average is  $5.7\pm 4.3$ .

### 2.2. Data collection tool

Referee Decision Scale; Title in Turkish adaptation; Soccer Referees Decision Satisfaction Scale (SRDSS). Referee decision scale was developed by Andrew et al. in 2006 in order to describe the accuracy-error relations between themes of opinion, concentration, and control that affect the ideal decision-making processes of referees; and crowd factor, player reaction and environmental factors; and to measure the referees' sense of satisfaction related to their decisions. The scale consists of 9 items and a single factor on a 5-level likert type grading. Each item is graded on a scale from (0)= Never to (4)=Always. Cronbach alpha value of the scale was calculated as 0.85.

### 2.3. Procedures

English form Referee Decision Scale developed by Andrew et al. in 2006 was translated to Turkish by translators that are experts in the field and Turkish form of each item that were best adapted to Turkish was adopted as the Turkish form of the scale by a work group of five people consisted of sports scientists and referees. Besides, the title of the scale was adopted as Soccer Referees Decision Satisfaction Scale in Turkish adaptation. 5 level likert type grading was kept the same in the Turkish adaptation. Finally, the original form and the Turkish form were compared and the scale was finalized with a conclusion that the scale is good enough in terms of linguistic equality. Later, data were analyzed and construct validity of the scale was tested with factor analysis.

## 3. Findings

### 3.1. Construct validity

Factor analysis is one of the methods that is applied in order to turn data structures related to each other into new independent data structures less in number; to reveal the common factors by grouping the variables that are considered to describe a formation or an event; and to group variables that affect a formation.

### 3.2. Exploratory factor analysis (EFA)

EFA was conducted in order to examine what kind of factor structure that the scale will reveal from the data obtained from the Turkish referees. Conformity of the data for the factor analysis was examined through Kaiser-Meyer-Olkin (KMO) coefficient and Barlett's test of sphericity. For chi-square value calculated with Barlett's test of sphericity is required to be statistically significant.

(KMO) Sample Conformity coefficient was calculated as 0.94 and Barlett's test of sphericity  $\chi^2$  was calculated as 2674.01 ( $p < .001$ ). These findings indicate that data are conformable to factor analysis and score are normal. As the original form of the scale consists of one single dimension, analyses were conducted with single factor limitation

method without using any rotation techniques. Analyses presented a single factor structure with 8.49 eigenvalue that explains the 53.4% of the total variance. 53.4% explained variance in a single factor is an important indicator of that it is a single factor structure. Factor loads of the scale range between 0.56 and 0.87. Detailed factor loads of the scale is presented in Table 1.

Table1.Soccer referees decision satisfaction scale: Factor loads and explained variance

Items	Factor Loads
1. I'm sure that I give the correct decision when I referee matches.	0.65
2. I'm influenced by the crowd noise when I make my decisions.	0.56
3. I'm sure that I made the correct decisions when I later reflect on my refereeing performance.	0.75
4. I'm sure that the most experienced referees would make the same decisions as myself.	0.86
5. I think my own thoughts make it difficult to make my own decisions.	0.76
6. I'm confident that I correctly apply the rules of the game.	0.68
7. I'm confident that a different referee would have interpreted the decision in the same way myself.	0.58
8. I can concentrate on ignoring crowd noise when making my decision.	0.76
9. I can feel calm when making my decision.	0.87
Explained Total Variance	53.4%
Eigenvalue	8.49

Cronbach alpha internal consistency method was used to test the reliability of Soccer Referees Decision Satisfaction Scale (SRDSS), and Cronbach alpha value of the Turkish form of the scale was calculated as 0.85. Research findings show that Turkish form of the scale can describe the decision satisfaction levels of soccer referees serving in Turkey.

### 3.3. Confirmatory factor analysis (CFA)

CFA is a validity determination method that is used to adapt measuring tools developed in especially in other cultures and samples (Dogan, 2010). According to Sumer (2000), CFA is an analysis carried to evaluate to what extent the factors constituted with many variables on a basis are conformable to the real data. Acceptable fit value for GFI, CFI, NFI, RFI, IFI and AGFI indexes is 0.90 and perfect fit value is accepted as 0.95 (Bentler and Bonett, 1980; Bentler, 1980). Acceptable fit is 0.08 and perfect fit value is 0.05 for RMSEA. Fit index values for the present study are: RMSEA=0.045, CFI=0.96, GFI=0.92

Fit index values for the model formed for the whole sample are as follows;  $\chi^2/df$  value is under 3 which indicates an acceptable fit; GFI value is 0.94 which indicates a good fit; and RMSEA value is 0.04 which also which indicates a good fit. As a result, these fit indexes show that the model has a good fit.

## 4. Conclusion

The purpose of the present study is adapting the Soccer Referee Decision Satisfaction Scale to Turkish and analyzing the validity and reliability of the scale in order to determine whether it can explain the decision satisfaction levels of Turkish referees. In accordance with this purpose, the original form was translated to Turkish, and it was examined whether linguistic equality is provided via “back translation” method. Following this step, item analysis was conducted and it was examined whether scale items can represent the scale. The conformity of the scale to Turkish was tested via confirmatory factor analysis. Cronbach alpha value of the scale was calculated as 0.85. Research findings show that Turkish form of the scale can explain the decision satisfaction levels of soccer referees serving in Turkey.

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