

The Effects of Teams, Individual Players and Spectators on Basketball Officials' Decision-making Processes

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ABSTRACT The goal of this paper is to elucidate the effects that teams, individual players, and spectators have on the bias of basketball officials. The data used in the paper was collected in surveys given to 76 basketball officials ranging from 18 to 40 years of age. The officials stated that they were affected by the players in their decisions regarding foul plays. It was also found that the degree of being affected by factors such as the players, teams and spectators varied according to the sporting experience of the basketball officials. Those who did not have a sporting background as players were found to be much more prone to being affected by spectators.

INTRODUCTION

Officiating a sport (that is, the tasks of managing, ruling, measuring, assessing, grading, penalizing and regulating a game/match), with the possibility of making mistakes, the need for social interactions with athletes, coaches and spectators, and the fear of potential aggression or even injury, may increase the stress level of sports officials (Dosseville et al. 2015).

Inaccurate decision-making by game officials can change the course of a game, and may lead to significant financial implications for clubs and hence alter the course of players' careers (Craven 1998). In a wide variety of sports, decisions also have to be made quickly, under conditions of considerable time pressure. At all levels of sport the quality of the officials' decision-making process can determine the difference between winning and losing (Hudson 2006).

Understanding the factors that have an impact upon whether officials make favorable or unfavorable decisions is thus important. Klein (1993) suggests that the process of decision-making involves first recognizing that an incident has occurred and then responding on the basis of prior knowledge and experience. In terms of Klein's "recognition-primed" decision model, a referee, in deciding to award a foul, is only

required to recognize the incident as a foul (Klein 1993). The more that rational consideration enters into decision-making, and increases the time taken, the more there is a decrease in spontaneous decision-making. Likewise, the more that officials avoid thinking about making a decision, or rely solely on their intuition to make a decision, the more spontaneous their decisions become (Lamba and Ozdasli 2015). Sports officials are required to process a large amount of information under heavy time pressure and during ambiguous situations. This inevitably makes them susceptible to some bias. Many variables are involved in judging and assessing the ongoing action within sports games/matches. Some of these variables also belong to the social domain and can sometimes lead to decision-making biases (Plessner and Haar 2006).

In fact, demands specific to officiating are often extreme since sports officials need to assess situations as rapidly and accurately as possible to manage the game successfully, maintain order and to resolve hostile interactions quickly. Moreover, sports officials will usually experience negative feedback during a sports event from athletes, coaches and spectators (Dosseville et al. 2015). Nevertheless, Lim and Rodenberg (2009) in their analysis of 80 basketball play-off games found only one example of an NBA referee having a significantly adverse effect on team performance.

Research focusing specifically upon officiating has consistently shown that errors and bias are inevitable, due to limitations in perceptual function (Sanabria et al. 1998). For example, researchers have applied Wundt's theory of prior entry (that auditory stimuli appear to occur prior

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to the time of actual occurrence) to demonstrate bias in first-base calls in baseball games. It has also been suggested that individuals may use heuristic methods of reasoning and rely on schemata when a quick decision is necessary (Larsen and Rainey 1991). Such prior knowledge has appeared to affect the number of red and yellow cards shown, but not the overall number of decisions awarded for or against a team (Jones et al. 2002).

Accordingly, it is thus possible that decisions made by sports officials will be influenced by any prior knowledge they have about the teams and players they are officiating. Plessner and Betsch (2001) also reported that decisions might also be influenced by events that occur during the game itself. They found a negative correlation between successive penalty decisions made by referees participating in their study involving the same team. That is, the participants were less likely to award a penalty to a team if they had previously awarded the same team a penalty. Nazari et al. (2014) found a negative correlation between referees' job stress and referees' mental health. Berezka and Nhopilko (2014) found that there was a noticeable trend of mistakes in decisions increasing as the physical distance of the referee from the episode in question increased.

Explaining the effects that the team, player and spectators may have on referees' behavior in team sports is thus an important factor in understanding how biased decisions may occur, regardless of whether they are a consequence of favoritism towards one team or not. The purpose of this paper is therefore to investigate bias and favoritism in basketball officials. The procedure followed was two-fold: First, the paper sought to confirm the most salient factors affecting basketball officials' decision-making processes with regard to infringements of the laws of the game. Second, and more importantly, the paper investigated the differences in the effects of the team, spectators and individual players on the decision-making of basketball officials with a strong sporting background and experience and those with less or no such history.

The initial hypothesis was that the basketball officials are meaningfully influenced by factors related to the teams involved, individual players and the game's spectators during their decision-making process. The secondary hypothesis was that basketball officials are affected differently by teams, players and spectators with

regard to infringements according to whether they have sporting experience.

METHODOLOGY

Participants and Settings

Questionnaires were given to 76 'B Category' licensed officials of the Turkish Basketball Association during basketball tournaments. Basketball officials in Turkey are classified as either International Degree Category A, National Degree Category B, or District Level C. The criteria for participation in the survey was having previously officiated for a period of at least one year. All the officials who participated in the paper were male with a mean age of 24.54 years ($SD = 4.34$, range = 18-40). The officiating experience of the basketball officials ranged from 1 to 16 years, with a mean period of 4.43 years ($SD = 2.94$ years).

Measure

According to Duda and Allison (1990), cross-cultural research should include self-report methods using standard questionnaires with scales valid and conceptually equivalent in the specific cultural context. Based on an extensive review of the literature, 3 specific domains were identified which affected the officials' decisions. 10 questionnaire items were generated to measure the effect of these domains. An initial version of the scale was administered to a sample of 7 basketball officials. After feedback from these officials, minor changes in wording were made for some of the items. This revised version of the scale was then applied in the current paper. The questionnaire formed as a result of the primary investigation was entitled "Basketball Officials' Favoritism Questionnaire" (BOFQ). Questions related to demographic information, including gender and age, and to years of officiating experience. There were also items to determine the effect of players, teams and spectators on the decision-making processes of the basketball officials participating (see Table 2).

All 10 items were finalized and the response format for the items was set as a 7-point scale ranging from "definitely not affected" (1) to "definitely affected" (7). The questionnaire included questions such as "Do objections from "star" players have any effect on your decisions?" and "Do protests by the spectator have any influence on your decisions?"

Procedure

A copy of the questionnaire was placed into an unsealed, unmarked envelope and handed to each official. A letter describing the paper accompanied the questionnaire. All participants were volunteers and were permitted to participate only once. The officials answered their questionnaires anonymously. After they had answered the questionnaire, they were asked to put the questionnaire into the same envelope, seal it and give it to the researcher.

Data Analysis

The Basketball Officials' Favoritism Questionnaire (BOFQ) had a seven point Likert-type response format. Due to the exploratory nature of the paper, a principal axis factor analysis was conducted to determine the underlying subscale structure for this particular scale. Mean and standard deviations (\pm) were calculated for all dependent variables. Factor scale reliability was determined by computing the reliability coefficient. Cronbach alpha descriptive statistics were used to summarize the data. In order to examine the differences between the sporting background of officials and their reported degree of being influenced by players, teams and spectators a one-way analysis of variance (ANOVA) was conducted. In addition, Pearson correlation

analyses were used in the case of any correlation between subscales. SPSS v.15 (SPSS Inc; Chicago, IL) was used for all statistical analyses and a significance level of $p \leq .05$ was selected.

RESULTS

Exploratory Factor Analyses

The second step of analysis was to identify the underlying factors affecting the basketball officials' in their decision-making process. Principle component analysis, with Varimax rotation and Kaiser Normalization procedures, was performed by using the responses from the 10 items from the Basketball Officials' Favoritism Questionnaire (BOFQ). Only those factors with eigenvalues of 1.0 or higher were retained for the final rotation. A minimum loading of 0.50 was used for the inclusion of an item on a particular factor. The questions in each category were combined into sub-categories. The internal consistency reliability (Cronbach's Alpha) of the whole scale was found to be 0.83, which was satisfactory. These values exceeded the minimum criterion level of 0.7, which was recommended by Nunnally (1978) for reliability. The values of the alpha for the sub-scales were acceptable as they ranged from 0.75 to 0.93.

Generally, the individual items were grouped together in logical factor patterns. Based on the

Table 1: Factor-analytic results for the basketball officials favoritism questionnaire (N=76)

<i>Sub-scales</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>
<i>Effect of Player (á= .93)</i>			
Are your decisions influenced by the attitudes of the players on the court? (e.g. aggressive, rebellious, manipulative, respecting the referee and the rules)	.85		
Do the most-skilled players influence your decisions?	.92		
Do "star" players influence your decisions?	.93		
Are your decisions influenced by the personalities of the players? (respectful, disrespectful, courteous, aggressive)	.86		
<i>Effect of Team (á= .75)</i>			
Does refereeing a team from your own region influence your decisions?		.61	
Does there being a "home" team influence your decisions?		.83	
Does a popular team influence your decisions?		.85	
Do players you sympathize with for regional, ethnic or cultural reasons influence your decisions?	.83		
<i>Effect of Spectators (á=.91)</i>			
Are your decisions influenced by a player being cheered a lot by spectators?			.95
Does there being a majority of spectators for one team influence your decisions?			.95
Eigenvalues	4.51	2.07	1.66
Percent variance	35.23	26.5	20.78

Note. Factor 1 = effect of player; Factor 2 = effect of team; Factor 3 = effect of spectator

paper, 3 factors, which accounted for 82.52 percent of the total variance, were identified. Factor 1 accounted for 35.23 percent of the variance and was labeled as “effect of player”. Factor 2 had 26.5 percent of variance and was labeled as “effect of team” whereas Factor 3 was labeled as “effect of spectators” and accounted 20.78 percent of variance (see Table 1).

Do you mean this was the *main* reason given by 73 percent? This is what the next sentence suggests. If not, you can delete ‘primarily’.

Descriptive Statistics

The data obtained from 76 basketball officials showed that 19 of them were working in a part-time job. Among their reasons for becoming basketball officials 73 percent said that they were doing it primarily to become more involved in sports. This was followed by ‘to become more known/gain a better profile’ (8.1%) and ‘to earn money’ (5.4%). 65.7 percent (*n* = 50) of the respondents stated that they regularly attended seminars and courses related to their jobs. 63.1 percent (*n* = 48) said that they were consciously trying to live a regular, well-ordered life.

Four of them reported that they had played basketball at a professional level, 15 indicated that they had played basketball at semi-professional levels, and 18 had not played basketball at any level.

The descriptive data revealed that basketball officials were partially affected by factors such as the personality of the players, *M* = 2.78, (*SD* = 2.04); players’ attitudes on the court, *M* = 2.27 (*SD* = 1.62); ‘star player’ status, *M* = 2.16

(*SD* = 1.67); players’ skills, *M* = 2.08 (*SD* = 1.67); feeling closer towards one of the teams for regional reasons, *M* = 1.89 (*SD* = 1.54); and favoring home teams, *M* = 1.27 (*SD* = 0.65) (See Table 2).

Pearson correlation analyses and descriptive data corresponding to these three scores– effect of player (*M* = 2.32, *SD* = 1.6), effect of team (*M* = 1.37, *SD* = .71), effect of spectator (*M* = 1.14, *SD* = .46) are tabulated in Table 3. When we look at questions related to the bias that the basketball officials display we see that the sub-scale “effect of player” has the highest score in a three-point sub-scale (as the mean value for this sub-scale was 2.32 on a three-point sub-scale). In addition, there were positive significant correlations of the three sub-scale with each other (*p* < .05; see Table 3).

Table 3: Sub-scales’ means and Pearson correlation analyses form the basketball officials’ favoritism questionnaire (N=76)

Sub-scales	<i>M</i> (<i>SD</i>)	<i>EP</i>	<i>ET</i>	<i>ES</i>
1. Effect of player (EP)	2.32 (1.6)	-	.308*	.243*
2. Effect of team (ET)	1.37 (.71)			.282*
3. Effect of spectators (ES)	1.14 (.47)			-

*(*p* < .05)

One-Way ANOVA

Since players, teams and spectators emerged as the three factors affecting the basketball officials’ decisions, a one-way analysis of variance

Table 2: Means of “important” ratings in the basketball officials’ favoritism questionnaire (N=76)

Reasons	<i>M</i>	(<i>SD</i>)
Are your decisions influenced by the personalities of the players? (respectful, disrespectful, courteous, aggressive) (<i>effect of player</i>)	2.78	(2.04)
Are your decisions influenced by the attitudes of the players on court? (<i>effect of player</i>) (aggressive, rebellious, manipulative, respecting the referee and the rules)	2.27	(1.62)
Do “star” players influence your decisions? (<i>effect of player</i>)	2.16	(1.67)
Do the most skilled players influence your decisions? (<i>effect of player</i>)	2.08	(1.67)
Does refereeing a team from your own region influence your decisions? (<i>effect of team</i>)	1.89	(1.54)
Does there being a “home” team influence your decisions? (<i>effect of team</i>)	1.27	(0.65)
Does a popular team influence your decisions? (<i>effect of team</i>)	1.18	(0.7)
Do players you sympathize with due to regional, ethnic or cultural reasons influence your decisions? (<i>effect of team</i>)	1.16	(0.55)
Are your decisions influenced by a player cheered a lot by spectators? (<i>effect of spectators</i>)	1.18	(0.56)
Does there being a majority of spectators for one team influence your decisions? (<i>effect of spectators</i>)	1.1	(0.39)

Note. Range: 1 to 7

(ANOVA) was only carried out using these three sub-scales. The results of the ANOVA suggested a significant mean difference between the sporting background of the officials ($F(2, 34) = 4.42, p < .05$) and the effects asserted by spectators. Tukey's HSD revealed that the officials who had never participated in any other sports activity ($M = 1.75, SD = 1.19$) were much more influenced by the spectators than the ones who had played sports both at amateur ($M = 1.1, SD = .28$) and professional ($M = 1.05, SD = .23$) levels. However, the results of the ANOVA suggested that there was no significant difference between the different sporting experience of different basketball officials and the effect players and the team had on them ($p > .05$).

DISCUSSION

The aim of this paper was the determination through the use of questionnaires of the bias/favoritism component of decisions made by basketball officials against infringements of the laws of the game. The statistical evaluations in this paper support the first hypothesis: Basketball officials stated that they were influenced by individual players, teams and spectators in their decision-making processes.

Moreover, statistical comparisons were made to test the second hypothesis and it was found to be supported: Basketball officials with no sporting background as players themselves were much more prone to be affected by spectators than those with such a background. However, there was no statistically significant difference in their degree of being influenced by players and teams. The extent of bias established by and in the present paper should thus be viewed as at the lower boundary of favoritism manifested by basketball officials.

The Basketball Officials' Favoritism Questionnaire (BOFQ) was prepared for the determination of the bias of the officials. As a result of principle component analysis, the questions in each category were combined into subcategories. Based on the paper, three factors were identified: "effect of player", "effect of team", and "effect of spectator" (see Table 1). When we look at the average scores of the items in the scale, the basketball officials were influenced by the personalities of the players, the attitudes of the players on the court and the presence of well-known/star players. In previous research on bas-

ketball, it has been found that fewer fouls were given against "star" players at home, though this was not the case with "non-stars" (Lehman and Reifman 1987). Glamser (1990:48) reached a similar conclusion, claiming that "the hostile atmosphere of an away game where such (social) support is lacking can clearly produce a dysfunctional aggressive response on the part of the visiting player and a less-than-objective view on the part of officials."

Research to date suggests that although sport officials may strive for fairness and impartiality, favoritism towards one team may occur (Mohr and Larsen 1998). In addition, researchers have found that more personal fouls are awarded against players when they are officiated by an "opposite-race officiating crew" than when they are officiated by an "own-race refereeing crew" (Price and Wolfers 2010). Greer (1983) demonstrated that spectator booing induces referee bias since most booing is directed at the officials. These studies provide some evidence that the spectator factor influences the degree of the officiating bias. An analysis of thousands of regular-season NBA games found evidence that "shorter referee crews call more personal fouls than their taller counterparts" and for the so-called "Napoleon Complex" (Gift and Rodenberg 2014). Anderson and Pierce (2009) examined the pattern of foul calls exhibited during 365 NCAA basketball games during the 2004-2005 season. Results of their analysis indicated that officials are more likely to call fouls on the team with the fewest fouls, making it likely that the number of fouls will tend to even out during the game.

In many professional team sports, referees have to consider numerous sources of information and make rapid decisions (Mascarenhas et al. 2005). Kaissidis and Anshel (1993) found that young basketball officials were significantly more stressed than older officials. Gencay (2009) examined the magnitude of psychological stress reported by soccer referees and assistant referees (linesman). The research indicated that soccer referees and assistant referees reported only very little to moderate stress.

Many studies indicate that basketball officials are influenced by a range of factors related both to the players and the spectators. From our study it can be concluded that spectator, team, and players play a highly significant role in influencing basketball officials' decision-making processes.

CONCLUSION

The low-level mean scale values for referee favoritism may stem from the fact the officials were not totally biased or that they refrained from giving crucial decisions that may have affected the outcome of the match. The present paper has also revealed that basketball officials with positive sporting backgrounds (experience as players at professional or amateur level) are less affected by spectators. There were, however, no correlations found between the years of officiating experience and the factor of influence of individual players, teams and spectators. More research is needed to test the validity of these findings.

Nevertheless, the survey method has never previously been employed in the literature, and this study marks the first time this method was used in order to determine the degrees of bias of referees. The application of surveys to the officials does involve certain difficulties: Officials are seldom found alone, and are generally reluctant to participate in any form of survey. In this case, the surveys were only given to 76 officials at a national level due to certain limitations.

RECOMMENDATIONS

It is recommended that future research should be conducted investigating refereeing bias and its effect on match results. There are several conditions that can contribute to an environment where officials are more likely to be influenced by external factors. This paper examines only one sport, but the underlying phenomenon is generalizable not only to most sporting situations involving officials, but to other fields as well. It is hoped that the data obtained in this paper will be useful for future studies. In addition, the Basketball Officials' Favoritism Questionnaire (BOFQ) can also be used for measuring the effects of the team, spectator and player on officiating behavior in future sporting events.

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