

## Research article

# SOCCKER REFEREE DECISION-MAKING: 'SHALL I BLOW THE WHISTLE?'

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### ABSTRACT

Evidence points to the existence of a home advantage effect in soccer with referees giving more decisions to the home team being a plausible explanation for this effect. The purpose of the present study was to use qualitative methods to explore the factors that influence experienced referees when making decisions. Five experienced referees volunteered to participate in semi-structured interviews of 30-40 minutes duration. Examples of questions/probes included 'Are there times when it is difficult to make a decision on whether there was a foul or not? When? Why?' and 'Do you worry about making the wrong / unpopular decision? What affect does this have on you?' Content analysis identified 13 inter-related themes that describe four higher-order themes. The themes 'accuracy-error', 'regulations', and 'professionalism' form a higher-order theme labeled 'ideal-decision making'. The themes 'opinion', 'concentration', and 'control' represent a higher-order theme labeled 'individual factors'; 'experience', 'personality', and 'personal life' represent a higher-order factor labeled 'experience factors', and crowd factors, player reaction, environmental factors, and crowd interaction represent a higher-order factor labeled 'situational factors'. Findings from the present study offer some insight into difficulties and coping strategies used by referees to perform consistently in professional soccer. Future research could use quantitative methods to test the relative contribution of themes identified above to the decision-making process in referees. At an applied level, practitioners should develop strategies that accelerate the process of learning to cope with performance-related stressors such as the crowd noise.

**KEY WORDS:** Soccer, bias, home-advantage, stress, and performance.

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### INTRODUCTION

Imagine a scenario of 70,000 supporters watching a soccer game; the home team defender lunges into the path of a shooting forward; the forward falls down, the ball bobbles away, and the crowd raw 'dive'. Does the referee blow the whistle and give a penalty, or does he waive play on and so avoid giving a contentious decision, or does he penalize the forward for simulation? Would the referee give the same decision if the home team forward fell and the crowd called for a penalty? A wealth of anecdotal evidence suggests referees give decisions in favor of the home team. Statistical examination of game records indicates home teams win more

often than away teams; home teams are awarded more penalties and receive less bookings (Nevill et al., 1996). A great deal of research has investigated the home advantage phenomena. Research has typically involved examination of the type of sports in which it occurs (see Balmer et al., 2001; Nevill et al., 1996; 1997; 2002; Nevill and Holder, 1999). A summary of the findings from these studies indicates that home advantage can be found in sports where the referees' decisions can influence the result, such as soccer and boxing. For example, in a study of the number of penalties awarded to home teams in the English and Scottish Leagues, results showed clear evidence that home teams with large crowds receive more penalties, and away

teams are penalized with more players being sent off, etc (Nevill et al., 1996). In a quest to identify factors associated with crowd noise, Nevill and colleagues (2002) conducted experimental research in which participants are asked to give decisions in the presence and absence of a vociferous crowd. It should be explained that participants do not actually interact with the crowd, but are asked to give decisions to incidents on a video-taped game. Nevill et al. (2002) used forty qualified referees who viewed an edited videotaped game between Liverpool v Leicester City, played at Liverpool in the season 1999-2000. Immediately after one of 47 challenges, the presentation was stopped for six seconds. In this time, the referees were asked to adjudicate whether the challenge was a foul or not, and if a foul, to which team the decision should be awarded. Half the referees watched the videotape with crowd noise audible and the other half in silence. Results showed that the referees who watched the game with audible crowd noise gave significantly fewer decisions against the home team, hence supporting the notion that referees consistently give decisions in favor of the home team (Nevill et al., 1999; 2002).

Although focus of interest was how referees are pressurized by crowd noise in a real soccer match, these studies were conducted in a laboratory rather than a real-life setting (Balmer et al., 2006; Nevill et al., 2002). While this line of research is commendable in terms of attempting to control potentially confounding variables, it lacks ecological validity, which represents a serious limitation to the applicability of the findings to practice. Investigating the influence of crowd noise on referees' decision-making in ecological valid settings is difficult. As soccer is an open sport, it is extremely difficult to effectively compare decisions made in one game to decisions made in a different game. Balmer et al. (2006) suggested that the process of decision-making under crowd pressure might be explored further through a qualitative research design, so as not to overlook key issues that may be missed in a quantitative experiment. Furthermore, the importance of subjective decision-making to the home advantage, which previous quantitative research has uncovered (Balmer et al., 2001; Nevill et al., 1997; 2002), may be more readily explored through qualitative methods which can account for such subjectivities.

It is also important to explain the value of conducting ecologically valid research in the home advantage. Sport psychology is about real-life applied settings, and is well suited to qualitative research that relies on data from referees themselves within a real-life context. Tindall (1994)

suggested how qualitative research encourages participants to speak for themselves and allows for valid theory development. Tindall (1994, p 142) suggested:

*Developing theory is thus firmly and richly grounded in personal experiences rather than a reflection of the researcher's a priori frameworks.*

Marshall and Rossman (1999) discuss how qualitative researchers can account for possible weaknesses in terms of lack of external validity, by stating the theoretical parameters of research, and thus tying the methods used into theory. Hence, there may be transferability of findings (and therefore external validity) to other research and policy making within these same theoretical parameters. As much as qualitative research is rigorous, it also acknowledges the influence of the researcher, for scientific research is intimately involved with researcher subjectivity (Ratner, 2002). This is largely overlooked within quantitative methods even though these too are intertwined with researcher subjectivity. Indeed the very decision to choose one method over another is highly subjective (Salmon, 2003). Another point that lessens the divide between qualitative and quantitative methods is that made by Marshall and Rossman (1999), who proposed that *all* research is difficult to replicate because the context of research, 'real life' is forever changing.

Interviewing techniques can be used to identify themes (or constructs) that referees utilize to construe the world of soccer refereeing. With the use of rigorous analytical procedures, the themes identified can be explained in terms of how they have been developed, and how they are used to structure the world of referees. Interview transcripts were analyzed by drawing out the themes associated with referee decision-making. The main decision of interest is whether to blow the whistle or not in order to determine whether a foul has been committed. The process that governs this decision is the object of interest for this paper, for it is up until this point that referees are operating in a subjective manner, hence open to referee interpretation. After this point, the referee will attempt to apply the letter of the law.

The purpose of the present study was to explore themes that referees perceive to influence decision-making in soccer using qualitative methods.

## **METHODS**

### ***Participants***

Participants were five male referees (Age:  $M = 43.60$ ,  $SD = 11.19$ ; Age ranged from 28-55 yrs) with an average refereeing experience of 21.6 years ( $SD = 7.89$ ). The time elapsed since last refereeing a match ranging from 1 day to five years. Four of the five participants had some experience of professional refereeing, with one participant being a full-time professional referee.

### **Interview schedule**

An interview schedule was developed and piloted on a retired referee with over 20 years of experience of refereeing in the Football League. The resultant interview schedule comprised questions and probes such as:

*Do you think there is much variation in the standard of refereeing across soccer matches?*

*Do the differences in crowd size make for a different experience?*

*Do these differences affect the experiences of referees in any way?*

*Would such differences affect the experiences or feelings of referees whilst making a decision, for example when deciding when a foul has been committed?*

*Have you ever encountered crowd displeasure when making a decision, like awarding a penalty? Why? How did this make you feel? Were you able to overcome your feelings? How? Did this experience impact on future matches you refereed at? How did it inform your future practice?*

*Are there times when it is difficult to make a decision on whether there was a foul or not? When? Why?*

*Do you worry about making the wrong / unpopular decision? What affect does this have on you?*

*Do you ever doubt your decision or have second thoughts? Why?*

*Is there any room for gut reactions / instincts when making a decision?*

*Is it difficult sometimes to apply the rulebook to real soccer in practice? What makes it difficult? For example the rules about fouling, are they quite clear to follow when you're out there watching real football?*

*Is it difficult to make decisions based purely on the rulebook in the face of crowd noise or player reaction?*

*Is it human nature or bad practice to stray from the rules under certain pressures?*

*Can you give me some qualities of what distinguishes a good referee from a bad one?*

*Any examples?*

*The ability to ignore the crowd / other players is a good skill, how did you develop this coping skill? Can it be learned?*

*What factors influence the decisions you make which haven't been covered already?*

*Is there such thing as a home advantage?*

*Is there such thing as referee bias?*

*Anything else?*

Content analysis procedures were based on recommendations by Krippendorff (1980). Data analysis steps included unitizing, sampling, recording, data reduction, inference, and analysis. A thematic content analysis was conducted to identify themes related to decision-making processes of referees. The process was repeated by a second researcher, before consistent themes were identified and agreed.

## **RESULTS**

Interview data produced a great deal of information. To effectively present the experiences of participants, a considerable amount of the data will be reported in the form of direct quotations. Table 1 presents the number of referees who described each theme, the number of comments made, and the percentage of units that describe each theme. As Table 1 indicates, 13 themes were identified with six themes being identified by all referees (crowd factors, accuracy/error, experience, regulations, opinion, and concentration/avoidance) and three themes being identified by 4/5 referees (player reaction, control, and Professionalism). A further four themes (personality; personal life; environmental factors and crowd interaction), were identified by either two or three of the five referees. The following sections describe each of the 13 themes shown in Table 1 in detail.

### **Theme 1 - Crowd factors**

The theme crowd factors describe how crowds may influence decisions in an indirect manner, in cases where referees do not intend to make decisions based on crowd factors. This can be illustrated by the following quotes:

*I wouldn't say well I'm going to give this decision this way because that crowd shouted at me or I'm going to stick with this one because they're the home crowd. I don't think that consciously, I think that whatever happens, a lot of it is sub-conscious, and we can all be affected sub-consciously can't we.*

The crowd may not necessarily impact on decisions at larger matches, but may be just as powerful, if not more so, at smaller matches:

**Table 1.** Themes identified by soccer referees during interviews.

Themes	Consensus	Number of units	% of units
Crowd factors	5/5	37	20.3
Accuracy/Error	5/5	27	14.8
Experience	5/5	21	11.5
Regulations	5/5	18	9.9
Opinion	5/5	16	8.8
Concentration/Avoidance	5/5	9	4.9
Player reaction	4/5	13	7.1
Control	4/5	13	7.1
Professionalism	4/5	8	4.4
Personality	3/5	8	4.4
Personal life	3/5	6	3.3
Environmental factors	3/5	5	2.8
Crowd interaction	2/5	3	1.6

*But what you do with a big crowd, a big crowd, is a buzz, you probably wouldn't notice an individual comment, but whereas a smaller crowd, it's the individual comments. If you go to Old Trafford, basically it's bzzzzzzzz. I think possibly the occasion can have a bearing on it.*

*Well I've always said you see the thing is, that whatever level of football you're at, you're only going to please 50% of the people, not the rest, because typically you're gonna upset one of the players, you can't upset nobody*

*I wouldn't say well I'm going to give this decision this way because that crowd shouted at me or I'm going to stick with this one because they're the home crowd. I don't think that consciously, I think that whatever happens, a lot of it is sub-conscious, and we can all be affected sub-consciously can't we. I can't speak for, I cannot say that people cannot be affected, but I can't say -.*

*Not really no. You get hairs on the back of your neck stand up when a goal's scored, if you're close to the crowd. If you're on the line and you've got all the fans behind you and the goal is scored then yeah. It doesn't impact your decision or anything. But the experience is heightened. You appreciate that when you blow the whistle you'll get a reaction, and when there's a score that's an obvious reaction.*

### **Theme 2 - Accuracy / error**

The theme accuracy derives from perceptions that referees can give an objectively correct decision. Incorrect decisions are perceived as inaccurate and errors. Referees discussed the nature of accuracy and error at some length, explaining the nature of the theme.

*Probably out of ten decisions, you think every seven or eight I can think back and say they were alright, maybe the other two weren't, OK there maybe reasons like positioning, had your attention been*

*drawn somewhere else in the incident, or had you not done something or done something that may have caused that incident and things like that.*

Accuracy could be verified through the aid of technology, video-recorded matches, and assistant referees. A wrong decision can thus be traced to logical reasons such as speed or not being in the 'optimum viewing angle'. The perception of accuracy in decision-making suggests that all decisions are black and white, and that there is little room for discrepancy:

*Black and white...It either is or it isn't. It's either one or the other.*

However, inaccuracy may not always be traceable to logical reasons:

*Erm, saying that there's been times when I've been in the best position to see something and I've still made a mistake. Er, don't know, sometimes, you just have a mental block sometimes. Erm, twenty seconds later you think why didn't I give that. It's something there, obviously you would probably be able to tell me why I haven't done (laughs). Er, I don't know sometimes, it's like sometimes crossing the road, there's a car coming and sometimes you still step out. It's, sometimes it, you can't actually put your finger on why, why I didn't give that penalty, and like I say twenty seconds later I'm thinking that's a penalty, and I can't go back because the laws don't allow me to go back that far. It, it's strange that, I don't know. It's one of those things where you've made a decision, as soon as you made it, you think it was wrong... Like if somebody catches somebody, it might just be a little tap, and the next minute somebody's pulled somebody. And not being mentally tuned in, that could happen.*

Perhaps in times like this, where reasons unknown to the referee cause inaccuracies, other

pressures may become prevalent in influencing decision-making:

*If you used to make a bad decision against one team, it wasn't necessarily putting it right, but I think it might just have played, in the next 50-50 situation, just to say right...Where perhaps it could have been one throw in the other way, but you've given the throw in to the team that you just upset. Just to try and calm things down...nothing massive you know...it's the little decisions in a way.*

Acknowledging bad decisions or mistakes is done through equating error to 'human' tendencies:

*Er, I just think that at the end of the day we're human, and we make mistakes. We probably don't make as many mistakes as the players do, but unfortunately all our mistakes are highlighted. So nobody wants to make mistakes, but we're human so we make mistakes.*

Accepting mistakes as human error shows an effective method of coping with the pressure that is inherent in trying to maintain accuracy; if referees like all humans make errors of judgment then wrong decisions are inevitable, and therefore to some degree, referees are excused of the responsibility of error. Another coping mechanism is maintaining honesty in the face of inaccurate decisions:

*Yeah, we all make mistakes, but it's not a mistake when you've given it a 100%, decisions might become obvious after, that yeah you did make a mistake. Erm on the TV with action replay, but you can't see everything all the time. So if you make an honest 100% decision then yeah sometimes we get it wrong. It's all part of human error.*

### **Theme 3 - Experience**

The theme experience could be a part of a number of other themes. It clearly interacts with many other themes, for example, experience can help to reduce inaccuracies in the face of difficult situations.

*So again we go back to experience, the more experience you got the better your decisions were.*

*I'm very experienced. I don't mean to sound, you know, but that is a simple fact... I can get away with a lot more than any referee. That's why I won't caution so much.*

Also interacting with crowd themes, experience can help moderate the pressure of larger crowds:

*You can only learn through experience, the more experiences you get the better. It's a big jump from going from five people on a park to sixty thousand at*

*Old Trafford. It just comes through learning, and you gotta learn it, it should be done gradually I think. What we have in England is the pyramid system where you do work your way up gradually. It all helps. Experience as a coping mechanism in this way, can be learnt from others in the profession:*

*And just seeing how other people cope with stress, well pressure. I mean I ran the line in foreign countries, and there's no bigger games than you know international matches, between countries, not just court matches but international matches. And just seeing how referees can cope with stress and pressure when you think how many people are watching that game. And you, if you can't learn from people who are higher up than you'll never learn.*

### **Theme 4 - Regulations**

The theme titled regulations describes attempts to provide greater consistency in football and have impacted greatly on how referees make decisions:

*Also, there are things that I must do. There are things by law, in association football, that I must do. And I can't not send them off, it goes against the law. There are things that are opinion on the day. That one man can say to that well I don't agree with that, and that's opinion, but there are things that are fact of the law. Which you have to send off for.*

The greater stringency of regulations in the game is not universally celebrated:

*But there are certain things that we're asked to do over the years that really we don't like to do. Er, one of the things at the moment is we're now being asked, if, if a player is injured we cannot treat them after the change, no treatment. Once he's had the treatment he, I then have to say to him you've got to leave the field of play. He then leaves the field of play, and I then have to wave him back on, after, within whatever. OK, now on local football you can get away with it, but I just think it's a non-entity. It really is, but I have to do it. Now that's something I don't like doing, but I have to do it.*

This often results in conflict between the themes of 'regulations' and 'opinion':

*Yeah because a lot of people are looking for common sense, and unfortunately common sense isn't in the rules of the game. We can only referee to them laws, you know we've got certain mandatory instructions that we must carry out. And unfortunately the mandatory ones are the ones that people want us to show common sense. Now if I have to yellow card somebody for deliberately kicking the ball, they just want me to manage the situation. Whereas unfortunately it's mandatory. If you were driving up the motorway at ninety miles an hour and the police*

*stopped you, or if you were doing seventy one miles an hour and he stopped you, you were speeding because it's mandatory seventy miles an hour. So would you want him to use common sense, if you were concerned, but if somebody else caused an accident by going seventy-one miles an hour then, could be prosecuted. So you know, I would use that scenario in football.*

### **Theme 5 - Opinion**

There is interplay between the themes of opinion and regulations, as individual situations, contexts and referees require a unique balance between the two:

*I think sometimes you can get away with erm, tackles. Possibly one time you caution for, another referee might in a similar situation, don't caution, you talk to the player. And you get away with it. And as I say, sometimes you talk to a player instead of, and find that that's the way, instead of sending off.*

Whilst there is a certain level of subjectivity within each of the themes, this is most noticeable in the factor of 'opinion'. Although regulations are continually becoming more stringent, there is always room for opinion, and the subjectivity that this brings with it:

*It's whatever your opinion is on the day. I think that refereeing now, at the top level, is, there's a lot more control now, where a lot more cautions, basically to pull people in, that are premier league, er bad tempers...But I still think there's a role for man management, of the players.*

'Man management' which denotes 'common sense' is the epitome of referee opinion, where it is viewed as one end of a continuum, with 'regulations' as the other end. Referee style can be at either of these extremes, or at any point between the two, and it is this that defines individual differences between referees:

Everybody's got different styles. And there are guys that use a lot of man management skills and there's some that are just to the letter of the law. Some might have six, seven yellow cards in the game, others might have two. But at the end of the day. It's in the opinion of the referee.

The 'opinion' factor also encompasses guessed or instinctual decisions, which are aided by how experienced a referee is:

*Sometimes you might, you do go by gut instincts, you haven't seen the actual push in the back, but because through experience you know how a player falls or reacts when he has been then yeah, you might go with*

*gut rather than what your eyes have actually seen...there is a subtle difference between how someone falls when they're tripped by foot or when they're tripped by insinuation. I think only through experience and being in those situations you'd be able to go with a gut reaction.*

As well as interacting with experience, opinion may interact with crowd pressure, where larger crowd sizes and television coverage may influence a greater reliance on opinion as opposed to the regulations:

*You want the game to go for 90 minutes, preferably keep the eleven on the pitch, and sometimes you've gotta use common sense in these sorts of situations, use a bit of common sense, you might say it's straying away from the rules of the game, well I just say it's bending them slightly, to suit yourself, which we do in all walks of life, it's just that with football it's in the public eye, it's on TV, so there's a lot more pressure there...somebody goes into a challenge, that could be a yellow card, you think to yourself this is the first minute of a game, do I need this yellow card in the first minute, was it really that serious? You think to yourself no...you might let them get away with one more challenge, where it's borderline... you wanna make sure if you're sending somebody off, it's, nobody's gonna argue with you, or say anything to you.*

### **Theme 6 - Concentration/ Avoidance**

Another coping strategy which is used in the face of crowd pressure, is avoiding its existence through concentration on the match:

*As I said you don't actually hear it, you turn it off. You're so, you're so, you're concentrating on the game itself but you don't, it's there, it's in the background, but you not listening for it. What you're listening for is what players are saying to each other, if something's building up between some players, so anything else is around the periphery, around the edge isn't it. It's not in your little world. You just don't hear it.*

### **Theme 7 - Player reaction**

Player reaction can act as a factor in influencing decisions directly:

*My initial reaction was to send him off, but then for some reason I stopped and thought about the consequences and issued a yellow card. And that's the only time it's ever happened. Due to insecure feelings about my safety at that point. And that's the only time it's ever happened...Knowing that this player, only six months ago assaulted a referee. I was expecting that that day. So it was only through his reputation that I thought about what I was doing. Otherwise normally I'd have just gone in and issued a red card.*

Players can also be an important influencing factor in admitting inaccuracies after a decision has been made:

*Well, in saying that players probably will accept it more, if I've obviously given a throw in the wrong way and somebody's really getting up their nose about it, sometimes I'd say I've made a mistake. Forget it, I've made a mistake. Players will accept that because they're thinking this guy's human. He's admitted that he's made a mistake on a throw in.*

### **Theme 8 - Control**

The influence on decisions may be a direct result of how threatened the referee's control of the game is:

*But what's, but what decides it now, what's more deciding, is whether my control is threatened. As a referee, if my control is threatened as a referee, I will caution and send off.*

Control in the form of self-composure also interacts with crowd themes in the form of a coping strategy:

*Just stayed calm. When everybody else is losing their head just make sure you don't lose yours. And you can't afford to be seen to be ruffled or showing signs of pressure because people will see that as a sign of weakness. You can't allow yourself to give out that image that this guy isn't in full control. If the referee isn't in full control, what chance has anybody else got.*

Ultimately, referee confidence is indicative of competence and accuracy:

*I think if you are confident, the players also pick up on that, they tend to confirm, because they start to doubt themselves.*

This extract shows how players can doubt their own beliefs when faced with a confident referee who is opposing their beliefs.

### **Theme 9 - Professionalism**

A coping strategy which is particularly used in the face of inaccuracies, is the strategy of remaining professional through perseverance:

*But I think it's how you react to them mistakes sometimes. You can either crumble and just you know wanna crawl up and want the ground to swallow you or you just react and you know, get on with it.*

### **Theme 10 - Personality**

Personality was perceived to be a factor which affects the way that decisions are made:

*I mean everybody's different. I mean I'm quite aggressive in the way that I referee. I shout a lot, I talk a lot. Other referees are laid back, quiet. Personality may also impact on how referees react to pressures:*

*I just think it depends on you personally. Whether you are erm of a nervous disposition. I never thought that I was, and looking back I don't think I was affected. But maybe other people can be.*

### **Theme 11 - Personal life**

The personal life of referees may at some unconscious level impact upon how a referee makes decisions:

*So, a lot of them might throw the book at you for even moving, I might have had a row with the wife you know hard day at work you know, or might be by the book anyway, you things like that. There's a lot of things that can affect you, which probably you're not aware of. #*

### **Theme 12 - Environmental factors**

These include external themes such as weather or difficulties traveling to a game:

*I mean traveling to games, you've given yourself plenty of time and you get stuck on the M6, oh no, then you're on edge aren't you, you've probably give yourself all the time in the world, you've probably given yourself six hours for a three hour journey, but you're stuck there, and then you have to speed to make up time, you probably get to the game on time, but you're on edge now. My preparation isn't what it should be.*

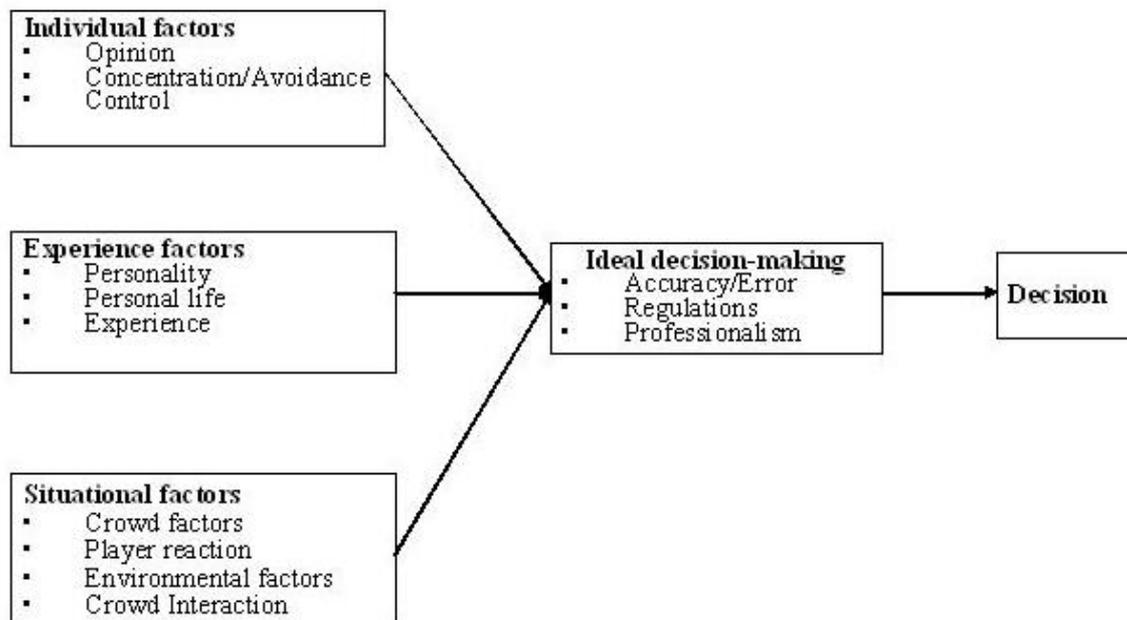
### **Theme 13 - Crowd Interaction**

In coping with crowd pressures, referees may adopt strategies of winning the crowd over, either through humor or through making the reasons for the decision explicit:

*I'm a little bit more, over the years I've tried to sell decisions you see. Especially on local games. And, and what I do, I try and, and tell people why I'm doing what I'm doing. I don't mean go over to them and draw them a diagram, but why I'm telling a player a decision, and try to let people on the side know why I'm doing it. But that's me.*

## **DISCUSSION**

The aim of the present study was to explore referee's perceptions of referring professional soccer. Qualitative techniques were employed to allow for full exploration of the issue, although it could be argued that the research question derives from findings from quantitative research (Nevill et al.,



**Figure 1.** Conceptual framework for factors influencing referee decision-making in soccer.

1996; 1997; 2002; Nevill and Holder, 1999). The interview schedule was developed to explore decision-making in soccer refereeing with a particular focus on crowd noise. The proposal that crowd noise is an explanation for home advantage has been forwarded based on correlational evidence from official statistics (see Nevill et al., 1996). Experimental tests of home advantage have lent support to the notion that referees tend to favor the home team, as a possible explanation for the influence of crowd noise (Nevill et al., 1999; 2002)

Qualitative data yielded 13 themes relevant to decision-making in soccer. We have developed a theoretical framework to explain how these themes interrelate in Figure 1. We suggest that three themes (accuracy-error, regulations, and professionalism) are central to the mindset of referees, and these themes form a higher-order theme, labeled ideal-decision making. The desire to give the correct decision, which is the correct interpretation of the rules (correct being an unquestionable or a decision on a which a consensus of referees would give the same decision), was expressed strongly by all referees. Further, although referees acknowledged the potential for other themes, such as crowd noise, or concentration, to influence decision-making, the weight of qualitative evidence suggests that the dominant themes were based on giving the ideal decision.

We suggest that opinion, concentration, and control represent a higher-order theme labeled individual themes, experience, personality, and personality life represent a higher order factor labeled experience themes. Crowd themes, player

reaction, environmental themes, and crowd interaction represent a higher order factor labeled situational themes. It is argued that these sources provide additional information to ideal-decision making. If a referee has to process information from 13 different themes simultaneously before making a decision, this increases the likelihood of some decisions being inappropriately biased by situational themes or individual themes. However, it should be emphasized that whilst referees acknowledged errors due to human error, which is a legitimate concern given the limitations of our perceptual systems (Craven, 1998, Sanabria et al., 1998). They explained methods through which they learn to combat inaccurate decisions.

Results of the present study indicate that referees reported a strong desire to referee games appropriately, strictly performing to the rules and regulations and being free from error. It could be argued that qualitative results showing the dominance of correct application of the rules derive reflect referee-training courses that emphasize learning the rules. Results also show the number of potential stressors faced by referees. Previous research has emphasized that aspects of refereeing is stressful (Anshel and Weinberg 1999; Kaissidis and Anshel, 1993; Kaissidis-Rodafinos et al., 1997; Stewart and Ellery, 1998; Taylor, 1990). Balmer et al. (2006) went on to demonstrate that increased anxiety associated with crowd noise was associated with inconsistent decisions. Therefore, it is argued that anticipating giving incorrect decisions (according to the referee's perception of a correct decision) would lead to anxiety and stress. We

suggest that referees should also be taught coping strategies to deal with crowd noise and internal distracters such as concentration.

An important aspect of experimental work by Balmer et al. (2006) is the notion of inconsistent decisions, that is, participants gave different decisions to the *same* incident. Findings from the present study showing the importance referees place on giving the correct decision, and the degree of reflection and analysis of performance that occurs post-game, suggest that inconsistency in performance is an equal concern for referees. Previous work has suggested that inconsistent decision-making is attributed to crowd noise (Balmer et al., 2006). A limitation of previous research is that it has not identified the typical within-subject variation in the same conditions. Nevill et al. (2002) compared two groups in which group 1 gave decisions in silence and group 2 gave decisions with crowd noise. Balmer et al. (2006) attempted to control for within-subject variation by having participants perform in both conditions (crowd noise and silence). Evidently, research has not tested the variation in performance by comparing two decision-making performance in the same condition (silence vs silence and crowd noise vs crowd noise), and future research should account for this limitation.

It is suggested that future research should test the influence of themes identified in the present study using quantitative methods. It is of course possible to use findings from the present study as the basis for more quantitatively based research. An interesting approach extending this line of research would be to explore referee reasons for giving each decision on a decision-by-decision basis, following a similar methodology used by Nevill et al. (2002). It is suggested that referees watch a videotaped game in two experimental conditions: One experimental condition involves referees watching a match with crowd noise, and the other condition involves watching a match in silence. We suggest that themes identified as relevant for referee decisions making should be used to develop a short self-report measure for use in experimental work. To facilitate such a line of investigation, we have proposed the Referee Performance Scale (RPS: see Appendix 1), which is a 9-item scale principally designed to assess individual themes and ideal-decision making themes (see Figure 1). We suggest that comparing referee decisions between crowd noise and silent conditions on scores on the RPS might highlight the nature of agreement and disagreement associated with refereeing the same game in different conditions. It is suggested that research of this nature

could cast light on reasons for home advantage in soccer.

## CONCLUSION

In conclusion, interview results provide insight into the thought processes and associated themes related to decision-making in soccer. We suggest that future research tests the extent to which these findings hold using a quantitative methodology. It is argued that confirming findings identified by qualitative research in quantitative studies would provide a strong foundation for developing education programs designed to teach referees to cope with situational stressors such as crowd noise.

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### KEY POINTS

- Five experienced described factors associated with decision making in soccer leading to the identification of 13 inter-related themes that describe four higher-order themes.
- Higher order themes include ideal-decision making', 'individual factors', 'experience factors', and 'situational factors'.
- Findings from the present study offer some insight into difficulties and coping strategies used by referees to perform consistently in professional soccer.
- Practitioners should develop strategies that accelerate the process of learning to cope with performance-related stressors.

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**APPENDIX 1****Referee Decision Scale**

**What is your decision? Please circle one of the three decisions below.**

A foul committed by a Liverpool player?

A foul committed by a Leicester player?

To waive play on?

	<b>Not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Somewhat</b>	<b>Very much so</b>
How sure are you that you gave the correct decision?	0	1	2	3	4
Were you aware of crowd noise when making your decision?	0	1	2	3	4
Is this a decision you might wish you had changed when later reflecting on your performance?	0	1	2	3	4
How sure are you that the most experienced referees would have given the same decision as yourself?	0	1	2	3	4
How much did your own thoughts make it difficult to make your decision?	0	1	2	3	4
How confident are you that you have correctly applied the rules of the game?	0	1	2	3	4
How confident are you that a different referee would have interpreted the decision in the same way as yourself?	0	1	2	3	4
Were you concentrating on ignoring crowd noise when making your decision?	0	1	2	3	4
How calm did you feel when making the decision?	0	1	2	3	4