

## CHAPTER II

### REVIEW OF RELATED LITERATURE

A literature review is a body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. Its ultimate goal is to bring the reader up to date with current literature on a topic and forms the basis for another goal, such as future research that may be needed in the area. It gives an overview of what has been said, who the key writers are, what are the prevailing theories and hypotheses, what questions are being asked, & what methods and methodologies are appropriate and useful. As such, it is not in itself primary research, but rather it reports on other findings.

The present reviews are based upon the available literature in respect to the study under investigation and therefore confined to the studies to which the investigator has accessed. All the relevant literature thus obtained by the researcher has been presented in this chapter to furnish necessary background material to evaluate the significance of the study.

The research scholar has made every possible effort to go through the literatures related to the problem in the influential factors on Decision Making during national and international tournament among the technical officials wherever available. The scholar has gleaned through almost every source like research quarterly, journals of various kinds, periodicals, encyclopedias, relevant book and e-resources. However, the scholar has also gone through the literatures of allied studies to collect the necessary information for making a proper shape of the study.

## 2.1 STUDIES ON OFFICIATING

**Mallo, et al., (2012)** examine the effect of positioning on the correctness of Decision Making of top-class referees and assistant referees during international games. Match analyses were carried out during the Federation International de Football Association (FIFA) Confederations Cup 2009 and 380 foul play incidents and 165 offside situations were examined. The error percentage for the referees when indicating the incidents averaged 14%. The lowest error percentage occurred in the central area of the field, where the collaboration of the assistant referee is limited, and was achieved when indicating the incidents from a distance of 11–15 m, whereas this percentage peaked (23%) in the last 15-min match period. The error rate for the assistant referees was 13%. Distance of the assistant referee to the offside line did not have an impact on the quality of the offside decision. The risk of making incorrect decisions was reduced when the assistant referees viewed the offside situations from an angle between 46 and 60°. Incorrect offside decisions occurred twice as often in the second as in the first half of the games. Perceptual-cognitive training sessions specific to the requirements of the game should be implemented in the weekly schedule of football officials to reduce the overall error rate.

**Dawson, & Dobson, (2010)** conducted a study to considers the influences on referees' decisions in an international context. Using data from five seasons of European cup football matches it is found that referees favour home teams when awarding yellow and red cards. Previous research on referee decisions in national leagues has identified social pressure as a key reason for favouritism. While social pressure is also found to be an important influence in this study, the international setting shows that nationality is another important influence on the Decision

Making of referees. In considering principal-agent relationships account needs to be taken not only of how agents (referees) decide under social pressure but also of how national identity shapes agents' decision making.

**Souchon, et al., (2010)** examined in 30 handball matches played at the highest regional level. The results indicated that referees make more lenient decisions toward male players when administering sporting sanctions, but more severe decisions toward male players when administering disciplinary sanctions, depending on and not the players were able to succeed in their action despite the foul. The findings are congruent with the hypothesis that referees use player gender as a judgmental heuristic. They suggest that further experimental studies examining the effects of referee gender and level of expertise, and of level of competition are needed to better understand the extent and limits of referees' use of player gender as a decision-making heuristic.

**Mascarenhas, et al., (2009)** investigated the physical and decision-making (DM) demands experienced by sports officials, the combined impact of locomotion and physiological factors upon DM have received little attention. Using an innovative combination of video and Global Positioning System (GPS) technology this study explored the movement, heart rate (HR) and DM of experienced football referees in their natural performance environment. A panel of independent referees analysed incidents (n = 144) taken from five referees in seven games in the New Zealand Football Championship (2005/06). The match-day referees made accurate decisions on 64% of the incidents, although their accuracy levels were not related to variables such as movement speed, HR, and cumulative distance covered. Interestingly, referees were on average only 51% accurate in the opening fifteen

minutes of each half compared to 70% accuracy at all other times. This study demonstrated that it is possible to combine new emerging technologies to conduct a comprehensive study of naturalistic decision-making in sport.

**Plessner, et al., (2009)** conducted a study for the referee decisions during a soccer match are about fouls and misconduct. We argue that most of these decisions can be considered as a perceptual-categorization task in which the referee has to categorize a set of features into two discrete classes (foul/no-foul). Due to the dynamic nature of tackling situations in football, these features share a probabilistic rather than a deterministic relationship with the decision criteria. Accordingly, these processes can be studied on the basis of a multiple-cue learning framework as proposed by Brunswick (1955), which focuses among others on how people learn from repeated exposure to probabilistic information. Such learning processes have been studied on a wide range of tasks, but until now not (to our knowledge) in the area of judging sport performance. They suggest that decision accuracy of referees can be improved by creating a learning environment that fits the requirements of this theoretical perspective.

**Catteeuw, et al., (2009)** investigated with a foul play assessment task and an offside decision-making task. Deliberate practice was investigated to account for role-specific differences. First, role specificity was clearly observed. Second, years of officiating, hours of practice per week, and number of matches officiated were each positively correlated with skill. The results support role specificity in association football refereeing. Further research should help to create role-specific perception and decision-making training programmes both for referees and assistant referees.

**Souchon, et al., (2009)** founded that referees are harsher toward sporting offenses in regional-level matches between women than in regional-level matches between men. We tested this bias also occurs at a higher, national level of competition, despite the greater pressures for objectivity and fairness at this level. Referees' decisions were examined in 15 national-level handball matches between women and 15 national-level handball matches between men after transgressions that varied in severity. The results suggest that referees made harsher decisions in female than in male matches. Although more research is needed, this study supported the hypothesis that referees may use the gender of players as a powerful judgmental heuristic for deciding how to respond to aggression.

**MacMahons & Starkes, (2008)** analyzed Baseball umpires, players, and control participants with no baseball experience were asked to call balls and strikes for video clips. In a basic judgement task, umpires and players were significantly better at calling pitches than controls. In a direct information task, borderline pitches were presented following clips of definite balls and definite strikes. Participants called target pitches closer to the strike end of the scale when viewed after definite balls than when they followed definite strikes. Similarly, when borderline pitches were shown in different pitch counts, participants called pitches more towards the strike end of the scale when there were three balls in the count (3–0, 3–2). These findings indicate that the standard for evaluation changes based on the context in which stimuli are processed. Moreover, the strength of the contextual factors is illustrated in that the effects were shown in observers with and without experience in the task. Overall, however, umpires had a greater tendency to call strikes, indicating that they may use a norm of “hastening the game”.

**MacMahon, et al., (2007)** addressed the factors that influence referee Decision Making in basketball. Four different groups of basketball officials were shown video clips testing their ability to detect fouls and violations (infractions). In a knowledge-priming condition, referees were given a rules test before infraction detection. In an infraction-priming condition, referees were instructed to focus on defensive fouls. The results did not show clear effects of knowledge and infraction priming. This implies that neither a pre-game review of the rules and league recommendation, nor the common coach behaviour of asking a referee to focus on a particular infraction influence performance in the calls that are made. Rather, the results indicate that detecting infractions in video clips may be influenced by features of the video tool. Performance is influenced by the specific clips and their format sequencing. These findings illustrate the complexity of referee decision-making, and provide guidance for designing coaching tools for this skill. In particular, this research suggests that referee decision-making tools progress in perceptual difficulty (e.g., on-the-ball to off-the-ball infractions).

**MacMahon, et al., (2007)** examined sport expertise as a function of role. In study 1, referees were better than players in a video-based decision-making task. This provides evidence that there are role-specific skills within one domain and sport. In study 2, They examined the training activities that could be influential in the development of skills in sports officials. Elite association football (soccer) referees retrospectively reported time spent in and perceptions of training activities for three periods: their first year of formal refereeing, 1998 (before formal training programmes were available), and the current year (2003). This allowed us to examine an area of skill with a limited culture of practice, where performance simulations with direct

feedback are usually not feasible. The results showed that referees specialize early and, as they develop, they engage in greater volumes and types of training. Competitive match refereeing is considered a relevant activity for skill acquisition that does not fit Ericsson and colleagues' Our findings indicate that actual performance is a significant activity for skill acquisition and refinement.

**Lane, et al (2006)** conducted a study 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 there was a foul and 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 labelled 'ideal-decision making'. The themes 'opinion', 'concentration', and 'control' represent a higher- order theme labelled 'individual factors'; 'experience', 'personality', and 'personal life' represent a higher-order factor labelled 'experience factors', and crowd factors, player reaction, environmental factors, and crowd interaction represent a higher-order factor labelled '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.

**Mascarenhas, et al., (2005)** examined the use of a video-based training program designed to develop referees' shared mental models. A group of English Rugby Football Union (RFU) national referees, divided into a control group (n = 15) and experimental group (n = 41) made their immediate decisions on pre and post-tests of 10 video recordings taken from real game scenarios. Over a six-week period the experimental group studied training tapes consisting of 5 sets of 5 tackles, in each case with an expert providing his interpretation of the correct decision. Each clip was filmed from the referee's perspective and taken from real game situations in order to maintain high ecological validity in accordance with naturalistic decision-making theory. The lowest ranked referees on the national panel significantly improved their percentage of correct decisions, becoming 17.43% more accurate in their decisions at the post-test. These results suggest that such shared mental model training is an appropriate method for improving referee decision making.

**Sutter, & Kocher, (2004)** studied the behaviour of football (soccer) referees in the German Bundesliga. Referees are requested to act as impartial agents. However, they may allocate benefits and rewards in a biased way. Agency theory has long neglected this possible form of malfeasance of economic agents, but has rather concentrated on agents exerting suboptimal effort levels. Favouritism or biased behaviour of referees can be investigated by examining their decisions on awarding penalties or extra time at the end of a football match. They can confirm a systematic home bias of referees.

**Sutter, & Kocher, (2004)** analysed the neutrality of referees during 12 German premier league (1. Bundesliga) soccer seasons, this paper documents evidence that social forces influence agents' decisions. Referees, who are appointed to



be impartial, tend to favour the home team by systematically awarding more stoppage time in close matches in which the home team is behind. They also favour the home team in decisions to award goals and penalty kicks. Crowd composition affects the size and the direction of the bias, and the crowd's proximity to the field is related to the quality of refereeing.

**Souchon, (2004)** examined gender's effect on transgressive behaviours and referees' decisions during handball games (Study 1) and the potential influence of gender stereotypes about players on referees' decisions as regards these transgressive behaviours (Study 2). In Study 1, 20 games (10 women's games and 10 men's games) were videotaped and observed. The findings indicated that men displayed transgressive behaviours more than women and that referees penalized women more than men. In Study 2, 30 referees answered a set of questions after they watched an edited video showing similar situations of female and male players. The findings showed that the similar situations in the video were judged in a different way by the referees. Thus, female players were granted more penalties than were male players. Gender stereotypes could effectively influence decision making.

**Fuller, Junge, & Dvorak, (2004)** assessed match injuries to footballers occurred as a result of players' noncompliance with the rules of the game, match referees could reliably identify the legality of incidents leading to injury, and the rules of football were adequate to protect players from injury. Video recordings of incidents leading to injury in 12 FIFA tournaments were used to identify parameters. Team physicians reported the details of match injuries. Two panels of FIFA referees reassessed the legality of incidents from these tournaments that resulted in injuries. In total, 148 general injuries and 84 head/neck injuries were

assessed. For the general injuries, the match referees identified 47% and the referees' panel identified 69% as fouls. For head injuries, the match referees identified 40% and the referees' panel identified 49% as fouls. Decisions made on the legality of tackles leading to injury indicated that the current rules of football were adequate for the majority of tackle situations, although the reliability with which referees could identify fouls during some match conditions was low. For incidents leading to head/neck injuries, the match referees and the referees' panel both identified a smaller proportion of injury situations as fouls.

**Nevill, (2002)** investigated the presence absence of crowd noise might influence qualified referees when assessing various tackles/challenges recorded on videotape. Binary logistic regression was used to assess the effect of crowd noise and years of experience on referees' decisions. The presence of crowd noise had a dramatic effect on the decisions made by referees. Those viewing the challenges with background crowd noise were more uncertain in their Decision Making and awarded significantly fewer fouls (15.5%) against the home team, compared with those watching in silence. The noise of the crowd influenced referees' decisions to favour the home team. It is suggested that referees' decisions are influenced by the salient nature of crowd noise, the potential use of heuristic strategies, and the need to avoid potential crowd displeasure by making a decision in favour of the home team.

**Reddi, & Carpenter, (2000)** founded that fruitful quantitative approach to understanding how the brain makes decisions has been to look at the time needed to make a decision, and how it is affected by factors such as the supply of information, and an individual's expectations. This approach has led to a model of decision-making, consistent with recent neuro physiological data that explains the observed

variability of reaction times and correctly predicts the effects of altered expectations. It also predict what happens when the urgency of making the response changes. We asked subjects to make eye movements to low-visibility targets either as fast or as accurately as possible and found that the model does indeed predict the timing of their responses: the degree of urgency seems to influence the criterion level at which a decision signal triggers a response.

## **2.2 SUMMARY OF LITERATURE**

The review of literature helped the investigator to spot out relevant topics and variables. Further the literature helped the investigator to frame the hypothesis in a correct way of the findings. The latest literature also helped the investigator to support his finding with regard to the problem. Further the literature collected in the study also helped the research scholar to summarize his study. The researcher has presented the reviews in the related subjects by depending upon the highly authentic sources. Each review has been written in details in related to the subjects. Finally the researcher puts to an end to this chapter after giving all relevant details to each reviews of this chapter.

The reviews were presented under the sections such as national and international Badminton tournament among the technical officials. The research studies reviewed were collected from journals available in the websites and some university libraries.

Based on the experience gained through review of the studies, the investigator formulated suitable methodology to be followed in this research, which is presented in Chapter III.