



Development and Validation of Match Analysis System of Playing Ability on Women Soccer Teams

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Abstract

The purpose of the study was to develop and validate a match analysis system of playing ability on women soccer teams. To achieve the purpose of the study the top four teams those who participated in the Bharathidasan University Inter-Collegiate Soccer Tournament 2014-15 for Women held at Bishop Heber College, Tiruchirappalli, Tamilnadu were only selected. The teams were Bishop Heber College, Tiruchirappalli, Government Arts College for Women, Kumbakonam, Shrimati Indira Gandhi College, Tiruchirappalli and H.H. The Rajah's College, Pudukkottai. The age of the women soccer players were ranged from 18 to 25 years. In this study Software was developed by the investigator with the help of computer experts for analyzing the Soccer matches. The entire process of designing and developing digital match analysis system was done with the help of Microsoft .Net 3.5 (C#). Front end .Net 3.5 (C#) and backend Microsoft SQL Server 2005. A pilot work was done during practice match to see its effectiveness. The data was collected during the real time match. The shortcomings in the software were corrected during the stage of pilot work. The Match reports were circulated among the coaches of both team and media person for their analysis. It was concluded that the digital match analysing system would be very much helpful to the Coaches, Players, media persons and Physical Educationists in enhancing the performance level of the Soccer players. The outcome of the study might act as a tool to analyse the team & individual performance in the game of Soccer. At the end it was concluded with possible enhancements in the project, it would take us to the next level in digital match analysis system in Soccer.

Keywords: Match Analysis, Development, Soccer.

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Introduction

In professional sports, notational analysis is the study of movement patterns, strategy and tactics in team sports. Successful patterns of play can be identified and used in subsequent matches. Notational analysis has a history in dance and music notation. Notational analysis is a way that critical events in a performance can be quantified in a consistent and reliable manner. In notational analysis, no change in performance of any kind will take place without feedback. The role of feedback is central in the performance improvement process, and by inference, so is the need for accuracy and precision of such feedback. The provision of this accurate and precise feedback can only be facilitated if performance and practice is subjected to a vigorous process of analysis (Gillet, et al. 2009).

Football, as it is seen today, has undergone a tremendous improvement since its birth. Of all the events in human history the one to attract the largest audience was neither a great political occasion nor a special

celebration of some complex achievements in the art or science, but simple ball game a Football match. If it is examined more carefully one would soon realize, that each Football match is a symbolic event of some complexity. One of the greatest strength of the game is its simplicity. At its crudest level all that are needed is a ball and an open space with something to act as a goal post. No other sport is so easily available and so immediately inspiring (Carling, 2005).

Methodology

The purpose of the study was to develop and validate a match analysis system of playing ability on women soccer teams. To achieve the purpose of the study the top four teams those who participated in the Bharathidasan University Inter-Collegiate Soccer Tournament 2014-15 for Women held at Bishop Heber College, Tiruchirappalli, Tamilnadu were only selected. The teams were Bishop Heber College, Tiruchirappalli, Government Arts College for Women, Kumbakonam, Shrimati Indira Gandhi College, Tiruchirappalli and H.H. The Rajah's College, Pudukkottai. The age of the women soccer players ranged from 18 to 25 years. Totally the 18 following match analysing factors which is expected to give the

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complete performance of the team & individual and 8 factors were finalized.

1. Total goals scored by each team
2. Total Number of shot at goal by each team
3. Total Number of passes by each team
4. Total Number of off side
5. Total Number of cards received by each team
6. Total Number of goal kick by each team
7. Total Number of corner kicks by each team
8. Ball Possession

A panel of experts consisting of coaches, Players and experts as well as fellow researchers aided in the development and ranking of performance scores for the effects of each skill as it is performed during the game. Each shot was also recorded according to whether the shot was off-target, on-target, or resulted in a goal. The pass was evaluated according to the result, such as if the other team intercepted the pass or it resulted in a scoring opportunity. Off sides, cards received by the players, goal kicks and corner kicks were carefully noted. Ball possession was carefully noted by two experts. In this study Software was developed by the investigator with the help of computer experts for analyzing the Soccer matches. The entire process of designing and developing digital match analysis system was done with the help of Microsoft .Net 3.5 (C#). Front end .Net 3.5 (C#) and backend Microsoft SQL Server 2005. A pilot work was done during practice match to see its effectiveness. The data was collected during the real time match. The shortcomings in the software were corrected during the stage of pilot work.

A match in the above said tournament between Bishop Heber College, Tiruchirappalli and H.H. The Rajahs College, Pudukkottai was digitally analysed. Initially team and players names of either team were registered in the digital system. Similarly details about the tournament, its format, venue and toss were entered in the system. Bishop Heber College, Tiruchirappalli won the toss and chosen the side. By clicking the START MATCH button it will reach the match analysis part in the screen. From start of the match time the investigator with help of computer expert enter appropriate column throughout the match. Match analysis is highly technical, so it needs thorough understanding and fast entering in the computer. At the end of the first half, the data was saved and first half report I & II of both the teams was generated and circulated among the coaches of either team. Similarly second half of the match was also digitally analysed and both report were generated and circulated among the coaches of both team and media person for their analysis. The investigator got written feedback from 28 coaches and 13 media person regarding the digital match analysing system. The coaches and media persons were asked to rate the digital match analysis system in hundred point scale in the feedback form. The range of the scale shall be between 0 and 10 points. 0 stands for poor and 10 stands for excellent. The filled in feedback form were collected and analysed statistically using mean and standard deviation. The mean and standard deviation of the data was presented in the table I.

Table I. Descriptive Analysis of Feedback Providers

Feedback providers	Mean	Standard deviation (±)
Coaches	8.45	1.45
Media Persons	8.29	1.34
Overall	8.37	139

The feedback results reveal that 8.45 and 8.29 points were rating by the coaches and media persons respectively. The rating of the coaches and

media persons on digital match analysis system developed in the study was diagrammatically presented in the following bar diagram.

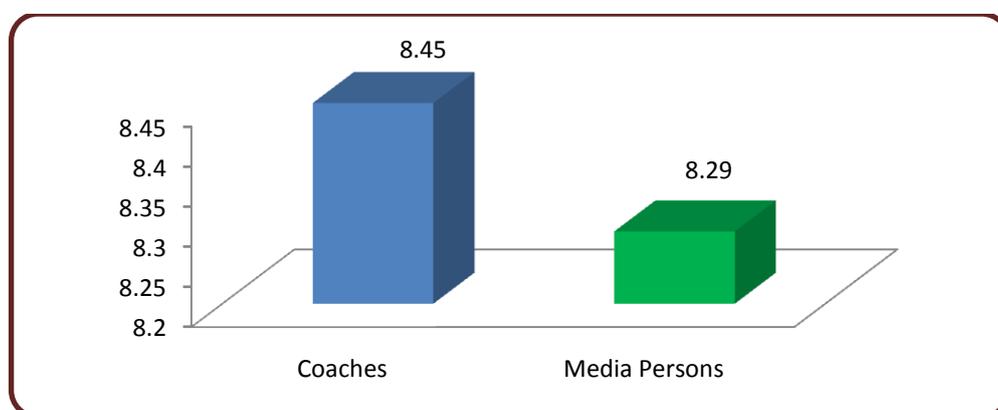


Figure I. Mean values of coaches and media persons feedbacks

The feedback of all forty one experts were diagrammatically presented in the following bar diagram.

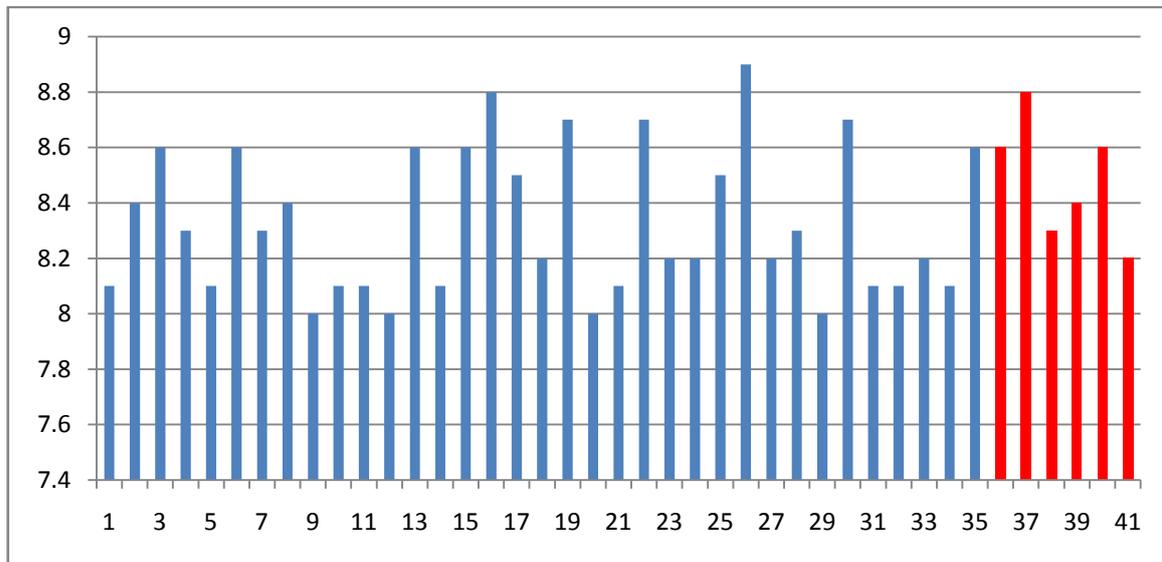


Figure II. The feedback of all forty one experts

Conclusion

1. It was concluded that the digital match analysing system would be very much helpful to the Coaches, Players, media persons and Physical Educationists in enhancing the performance level of the Soccer players.
2. The outcome of the study might act as a tool to analyse the team & individual performance in the game of Soccer.
3. At the end it was concluded with possible enhancements in the project, it would take us to the next level in digital match analysis system in Soccer.

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