DIFFERENCES IN INDICATORS OF SITUATIONAL EFFECTIVENESS BETWEEN TEAMS THAT COMPETE IN DIFFERENT COMPETITIONS RANKS

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Abstract
The main goal of this study is to identify the differences in some variables of situational effectiveness for the national soccer teams participating at the Euro 2008 Soccer Championship and the teams that took part in the BiH (Bosnia and Herzegovina) Premier League season 2008/2009. The obtained results indicate that the Premier League team had organized a larger number of attacks per game. Also on this level of competition the team had more shots blocked inside the penalty area and a larger number of shots defended by the goalkeeper. It tells us that the Premier League teams are technically inferior, and do not have rational tactical procedures at the stage of defense in relation to the participants of the European Soccer Championship. Also, we can see that the effective duration of games in the Premier League is shorter in relation to the European Championships because at this level of competition teams have more interruptions during the game. The results show that the BiH Premier League teams should improve all technical – tactical procedures, with emphasis on bigger situational variability, and work on rationalization of the tactical procedures within individual and group tactics in both, offense and defence, in order to increase the level of technical preparedness of the players to create conditions for more efficient final and finding of adequate responses for unforeseen situations.

Key words*: median test, technique, tactics, rationalization, effectiveness.*

INTRODUCTION

Based on the games analysis, the overview of certain situations occurring during the soccer game may be obtained consequently identifying advantages of the own team which could be maintained and developed further. The games analysis could as well identify disadvantages that would be areas requiring improvement (Lago-Penas, Lago-Ballestros, Dellal & Gomez, 2010). For many years, teams which take part in the Premier League of Bosnia and Herzegovina impossible to qualify for a better competition. In this study, we compare the teams Premier League with teams that compete on qualitative level of competition. Based on this modeling, we can accurately detect defects in order to adapt training process to achieve top results.

Although the research pertaining to technical – tactical expressions are not standardized, the research still provides very important information for the soccer game, especially because that information is obtained is in situational terms (Rowlinson & O'Donoghue, 2007). Detecting technical - tactical procedures and their frequencies may contribute to identification of technical – tactical elements of the game, which are important for improving the soccer game's quality (Grant, Williams & Reilly, 2009). We must emphasize that the data obtained in this study can be used in training with the younger age categories. Methods of teaching technical and tactical procedures should be adapted to the demands of top sport, to make it easier and faster to achieve top results. This way we are trying to quantify the soccer game, but we still can not talk about one realistic picture that will reflect, for a longer period of time, the application of technical – tactical effects, because the soccer game develops rapidly. Some of the researches assessing the differences in kicking at goal frequency contribute to that. In some cases, the authors have found statistically significant differences, while this was not case with the others (Kapidžić, Mejremić, Bilalić & Bečirović, 2010; Lago-Penas et al. 2010; Hughes & Franks, 2005). Also the research (Lago-Penas & Lago-Ballestros, 2011) where authors concluded that the place of the game (guest, host) and the team quality are very important for identification of technical – tactical variations in matches. Tactical procedures in offense are more efficient when you play against the defense which does not have rational tactical procedures (unbalanced defense), than against the teams with balanced defense (Tenga, Holme, Ronglan & Bahr, 2010). However, individual tactics significantly affect the efficiency of group tactical procedures. At the same time, to ensure that individual tactics contributes to the success of the game, the differences must be expressed. Premier League teams are less effective individual

tactics in relation to the representation of the European Soccer Championship. Premier League teams have a very small percentage realized attacks, which is associated with the implementation of individual and group tactics.

The researches identifying differences in technical - tactical procedures between the teams that are ranked at the bottom, middle and top of the table (Janković, Leontijević, Jelušić, Pašić & Mičović, 2011; Lago-Ballesteros & Lago-Penas, 2010) show the presence of statistically significant differences between bottom and top ranked teams, while the middle ranked teams do not significantly differ from the other two groups. That way, the teams with rational tactical procedures in the offense have numerous options available in the offense, as well as in finding the most adequate solution in the defense. It means that particular attention should be paid to technical – tactical procedures within the individual and group tactics, because it is a group of tactical requirements that have enormous role in achievement of the efficiency within the soccer game (Memmert, D. 2010). Precisely in this study we want to obtain information in which segments of the BiH soccer games there are weaknesses in relation to European and world competitions. These information would improve the soccer game in Bosnia, and finally helped to get some of our teams qualified to a high level of competition.

Soccer players work in time and space in an unpredictable environment, which frequently complicates the teamwork. This means that the main task of the team is to provide coordinated actions within the game where all the players try to achieve their individual actions as well. Structural analysis of soccer game can give us information about the parts of the field where the teams are the most active, which helps the coaches adjust the tactical options in defense and offense, towards the opposite team (Merce, et al 2007). In the research (Seabra & Dantas, 2006; Taylor, Mallalieu, James, 2005; Cotuk & Yavuz, 2007) the authors clearly define the team which achieved a major part of the game through the central zone, and smaller part through the peripheral zones.

The first condition for the rational use of tactical procedures is the technical perfection of the players. Just accomplishment of this condition has created preconditions for coordinated action within the game. The analysis of the BiH Premier League matches, evident is the lack of technical preparedness of the players. Information obtained in this study may help in the efficient planning and programming work in the schools football in Bosnia and Herzegovina. The data obtained in this study, will help to determine specifically the deficiencies in BiH soccer, in order to make the eventual corrections aimed at improvement of our soccer game, in fact to develop a more efficient model of the game.

In comparison with the previous period, soccer games became more dynamic, while the application of technical – tactical elements by all players became more frequent (Janković, A. 2004). Also in comparison with the previous period to achieve a scoring goal and to defend their own goal, all members of a team require more cooperation.

The main aim of this study is to determine the differences between the teams that competed in BIH Premier League in the season 2008/2009 and the national teams participating in the European Soccer Championship 2008 in Austria and Switzerland. The research of this type will indicate the frequency in use of technical – tactical elements, assessing the offense and defense elements of the soccer game, based on which the information may be obtained on whether the premier league teams were weaker in use of these technical – tactical elements of the soccer game in relation to the national teams participating at the European Soccer Championship 2008.

METHODS

Entity Sample

For the purpose of this study, the games of the national teams participating in European Soccer Championship 2008 in Austria and Switzerland were analyzed, as well as the teams that participated in 2008/2009 BiH Premier League. The entities are represented by national teams and teams competing at both competition levels within each of the analyzed games, so essentially there are two entities in one game. So for this study, there are 62 entities which represent national teams analyzed in thirty one games and 60 entities representing thirty BiH Premier League games. During the data entry, the national teams participating at the European Soccer Championship were marked as the entities of the "Euro 2008" group and the teams participating in the BiH Premier League as the entities of the "Premier League" group.

Data collection methods

The data about situational efficiency of the national teams participating at the European Soccer Championship 2008 were obtained from the web site www.euro2008.com, which shows the official statistics of the European Soccer Championship. The data about situational efficiency of the teams participating in BiH Premier League in 2008/2009 season were obtained in a way that the testers analyzed the recorded games and entered the data on situational efficiency of the teams into a specially designed form. Prior to the start of the analysis of the recorded games and data entry, the tester group conducted test measuring of certain technical – tactical elements of the situational efficiency which equate to variables chosen for this research. This way, testers were introduced with variables to be monitored and entered into the form, and were explained the criteria for all variables to be monitored, so the possibility of errors during the analysis of the games would be reduced. Tester teams included five gym and sport professors and five soccer coaches of "Eurosoccer" soccer school.

After the preliminary test, measuring testers were divided into two groups and each group analyzed all of the games. After completing the analyses, results of both tester groups were summarized and compared in order to obtain as objective an indicator as possible. Comparing obtained data, no discrepancies between these two tester groups were found which demonstrates that the criteria of the two tester groups were balanced.

Variables Sample

Variables in this research include the features of game elements applied by the teams during the game. These statistic indicators are promoted by FIFA for all the games organised under its authority. For the needs of this study, the variables sample included sixteen (16) variables, assessing technical – tactical elements applied during the game.

To assess the structural components of the game, the following variables were used:

- LSO – left side offense
- MO – midfield offense
- RSO – right side offense

To assess technical – tactical kicking elements from different distances, the following variables were used:

- KGIPA – kick on goal inside the penalty area
- KWIPA – kick wide inside the penalty area
- KGOPA – kick on goal outside the penalty area
- KWOPA – kick wide outside the penalty area

To assess technical – tactical goal defence elements, the following variables were used:

- KBIPA – kick blocked inside the penalty area
- KBOPA – kick blocked outside the penalty area
- TNSG – total number of saves by the goalkeeper

To assess technical-tactical elements of kicking the ball into the game, the following variables were used:

- NFS – number of fouls sustained
- NTCK – number of taken corner kicks
- NT-I – number of throw-ins

To assess technical-tactical elements of goal scoring, the following variables were used:

- TNGCM – total number of goals scored in a match
- NGSIPA – number of goals scored inside the penalty area
- NGSOPA – number of goals scored outside the penalty area

Statistical procedures

To determine differences between the teams that competed in the BiH Premier League in the 2008/2009 season and the national teams that participated in the European Soccer Championship 2008 in Austria and Switzerland, a Median Test had to be utilized.

RESULTS

Differences in some indicators of the situational effectiveness between the national teams participating at the European Soccer Championship 2008 and the BiH Premier League teams

Results obtained by the Median Test (Table 2) as well as Frequencies (Table 1) show which variables had statistically significant differences between the groups in situational efficiency indicators. Looking at the frequency of organized left and right side offenses as well as the midfield offenses, it is noticed that BiH Premier League teams and national teams participating at the European Soccer Championship primarily differ in all three applied variables (left side offense, midfield offense, right side offense). No statistically significant differences have been

found in Table 2 between the groups at these two competition levels in the variables for the assessment of technical – tactical element of kicking from different distances. The variables for the assessment of technical – tactical elements of own goal defence showed statistically significant difference in the variables of kick blocking within the penalty area and in the total number of saves by the goalkeeper. The noticed discrepancies are in favour of the assessees from the "Premier League" group. In the variables applied for the assessment of technical-tactical elements of goal scoring, no statistically significant differences were found in the number of suffered faults and the number of out kicks, while in the corner kick variables, no statistically significant difference was found between the groups. The differences found were also in favor of the "Premier League" group.

Table 1. Frequencies

Index symbol	Technical and tactical actions		GRUPA	
			Euro 2008	Premier league
LSO	Left side offense	> Median	*13*	*41*
		<= Median	*49*	*19*
MO	Midfield offense	> Median	*13*	*48*
		<= Median	*49*	*12*
RSO	Right side offense	> Median	*9*	*40*
		<= Median	*53*	*20*
KGIPA	Kick on goal inside the penalty area	> Median	*28*	*25*
		<= Median	*34*	*35*
KWIPA	Kick wide inside the penalty area	> Median	*26*	*26*
		<= Median	*36*	*34*
KGOPA	Kick on goal outside the penalty area	> Median	*20*	*24*
		<= Median	*42*	*36*
KWOPA	Kick wide outside the penalty area	> Median	*32*	*25*
		<= Median	*30*	*35*
KBIPA	Kick blocked inside the penalty area	> Median	*9*	*42*
		<= Median	*53*	*18*
KBOPA	Kick blocked outside the penalty area	> Median	*15*	*12*
		<= Median	*47*	*48*
TNSG	Total number of saves by the goalkeeper	> Median	*10*	*39*
		<= Median	*52*	*21*
NFS	Number of fouls sustained	> Median	*19*	*36*
		<= Median	*43*	*24*
NTCK	Number of taken corner kicks	> Median	*35*	*26*
		<= Median	*27*	*34*
NT-I	Number of throw-ins	> Median	*23*	*38*
		<= Median	*39*	*22*
TNGCM	Total number of goals scored in a match	> Median	*23*	*25*
		<= Median	*39*	*35*
NGSIPA	Number of goals scored inside the penalty area	> Median	*16*	*19*
		<= Median	*46*	*41*
NGSOPA	Number of goals scored outside the penalty area	> Median	*15*	*15*
		<= Median	*47*	*45*

Table 2. Significance of differences between groups

Index symbol	Technical and tactical actions	N	Median	Chi-Square	df	Asymp. Sig.	Yates' Continuity Correction		
							Chi-Square	df	Asymp. Sig.
LSO	Left side offense	*122*	*7.00*	*27.728*	*1*	*.000*	*25.842*	*1*	*.000*
MO	Midfield offense	*122*	*5.50*	*42.503*	*1*	*.000*	*40.175*	*1*	*.000*
RSO	Right side offense	*122*	*7.00*	*34.507*	*1*	*.000*	*32.371*	*1*	*.000*
KGIPA	Kick on goal inside the penalty area	*122*	*2.00*	*.152*	*1*	*.697*	*.043*	*1*	*.836*
KWIPA	Kick wide inside the penalty area	*122*	*2.00*	*.024*	*1*	*.876*	*.001*	*1*	*.978*
KGOPA	Kick on goal outside the penalty area	*122*	*3.00*	*.793*	*1*	*.373*	*.492*	*1*	*.483*
KWOPA	Kick wide outside the penalty area	*122*	*3.00*	*1.212*	*1*	*.271*	*.845*	*1*	*.358*
KBIPA	Kick blocked inside the penalty area	*122*	*1.00*	*38.584*	*1*	*.000*	*36.337*	*1*	*.000*
KBOPA	Kick blocked outside the penalty area	*122*	*2.00*	*.311*	*1*	*.577*	*.115*	*1*	*734*
TNSG	Total number of saves by the goalkeeper	*122*	*6.00*	*30.303*	*1*	*.000*	*28.304*	*1*	*.000*
NFS	Number of fouls sustained	*122*	*19.00*	*10.613*	*1*	*.001*	*9.460*	*1*	*.002*
NTCK	Number of taken corner kicks	*122*	*4.50*	*2.099*	*1*	*.147*	*1.607*	*1*	*.205*
NT-I	Number of throw-ins	*122*	*24.50*	*8.396*	*1*	*.004*	*7.379*	*1*	*.007*
TNGCM	Total number of goals scored in a match	*122*	*1.00*	*.267*	*1*	*.605*	*.110*	*1*	*.740*
NGSIPA	Number of goals scored inside the penalty area	*122*	*1.00*	*.512*	*1*	*.474*	*.265*	*1*	*.606*
NGSOPA	Number of goals scored outside the penalty area	*122*	*.00*	*.011*	*1*	*.918*	*011*	*1*	*.915*

DISCUSSION AND CONCLUSIONS

Results in this study show statistically significant differences in the variables assessing the structural component of the soccer game. In the variables of left and right side offense as well as midfield offense, significant differences were found in favour of the teams that competed in BiH Premier League. BiH Premier League teams had much higher frequency of organized offenses per game than the national teams that participated in the European Soccer Championship. The authors that analyze the games share the same view that success was achieved through central versus through peripheral zones of the pitch (Seabra & Dantas, 2006). One study determined that during the World Soccer Championship in 2002, the Brazil National Team achieved success in the majority of the game through the midfield and only a minor share through the peripheral zones in comparison with the German National Team. It must be noted however that the efficiency of organised offenses in soccer partially depends on tactical behaviour of individual as well as the strategy of a team (Taylor et al., 2005).

Efficiency of organized offenses and achieved scores depends on efficiency and types of passes (Hughes & Franks, 2005; Luhtanen, Belinskij, Hayrinen & Vanttinen, 2001). It has to be emphasized (considering the competition level, rank position, etc) that the team quality depends on the efficiency of organized offenses at the game, as demonstrated by some researches conducted so far (Hughes & Franks, 2005; Hughes & Churchill, 2005).

Differences in the variables for assessment of technical – tactical element of goal scoring have not been noticed. In the frequency of a shot at the opponent's goal, there are no differences between BiH Premier League teams and National Teams participating in the European Soccer Championship in 2008. If we look at the differences between the winning and defeated teams at one competition level, it is interesting to note that kicking at a goal is a variable differentiating the winning from the defeated teams, which is confirmed by some present researches (Zubillaga, Gorospe, Mendo & Vilasenor, 2007; Kapidžić et al, 2010; Szwarc, 2008).

It can thus be easily concluded that the National Teams competing at the better quality level of competition have higher efficiency in organized offenses because the quality of a team significantly determines the quality of technical-tactical variations during the game (Lago-Penas & Lago-Ballesteros, 2011, Janković, et al. 2011; Szwarc, 2004; Luhtanen, et al. 2001; Moura, et al. 2007; Tenga, et al 2010). The higher efficiency of organized offenses of the teams that participate at better quality level game is reflected in faster offenses compared to teams that play at lower level, and through some researches information

was obtained that from faster offense (fast offense) there are more scores in relation to slower offense and with the participation of a higher number of players (Tenga, A. et al. 2010).

The obtained results indicate that there are no statistically significant differences between teams at these two levels of competition in the variables assessing technical – tactical elements of kicking at goal. Suppose that with the same number of organized offense results in these variables would be different, we can assume that the teams from the lower competition levels are weaker in performance of individual and group tactical variants (Janković et al., 2011, Szwarc, 2004), which affect shot in terms of creating an open space. Hereby, the teams playing in BiH Premier League, from the higher number of organized offenses, created the same number of kick at goal opportunities as well as national representations but latter ones achieved it with much less frequency of organized offenses. In present researches authors stated that the difference between the winning and the defeated teams is in total shot numbers and shot inside the goal numbers (Lago-Penas, et al., 2010; Erdil, Bozkurt & Isleyen 2010; Armatas et al., 2009). Shot is the final element in the game and its aim is to achieve the score, while shooting itself is related to the player's intellect there are numerous factors that influence the arrival to the shooting position starting from individual and group tactics to the experience of the player (Duch, Waitzman & Nunes - Amaral, 2010).

Statistically significant differences in the variables assessing technical-tactical elements of the own goal's defense were found, blocked shot inside the penalty area and number of saves by the goalkeeper. The obtained results indicate that the noticed differences were in favour of BiH Premier League teams. Present researches have shown that the defeated teams were much weaker in the variables assessing the defense aspect of the soccer game. So (Szwarc, 2004) it was determined that the defeated teams were much weaker in technical – tactical elements of the game such as All balls taken from the opponent; balls taken from the opponent after interception; blocked balls; and goalkeeper's saves. It may be assumed that the teams at lower competition levels had an easier time in reaching the opponent's goal and made the space for kick at goal much easier than the National Teams at the European Championship. This tells us that BiH Premier League teams had irrational and inefficient technical – tactical procedures in their defense strategy pertaining to taking of the tactical variants to prevent the good kicking position. Certainly more rational technique and tactics affect the efficiency of the game (Janković et al. 2011; Szwarc, 2004), and that ball kick is the most frequent technical element used in the soccer game (Jankovic & Leontijevic, 2008).

In the variables assessing technical-tactical element of kicking the ball into the game, statistically significant differences were found in the number of sustained fouls and the number of throw-ins. These differences are in favour of BiH Premier League teams, which tell that the effective playing time is much shorter than in higher ranked competitions. However the main question is what leads to higher frequency of fouls and throw-outs? By monitoring the BiH Premier League matches, it is clearly seen that the teams in defense use throw-outs often without any particular reason. Higher frequency of game breaks may be related to tactical behaviour of the player during the game (cooperation), weaker interaction of the player after taken ball, as well as general game strategy (Memmert, 2011; Memmert, 2010; Bate, 1998). Higher frequency of fouls per game may be due to the consequences of irrational tactical procedures which would enable stopping of the opponent on time, then due to the lack of technical preparation as inadequate response to the given situation. Of course for proper response to a given situation, players' creativity is very important which needs to be systematically developed in a long term players' building process (Hughes & Franks, 2005; Hughes & Churchill, 2005; Memmert, 2011).

Based on the obtained results from this research, it may be easily concluded that BiH Premier League teams are weaker in some of the assessed parameters of the situational efficiency in comparison to the national teams participating at the European Soccer Championship. The national teams that participated at the European Soccer Championship 2008 may be considered a model of soccer game that one should definitely strive to, if we wish to raise the quality of soccer in BiH.

In each match the number of possible situations is almost infinite, due to which understanding of the structure and the logics behind the resolution of the situations in the game, as well as understanding of the phases and sub-phases in the game flow, become a crucial issue and condition for continuous improvement of overall actual play quality, as well as establishment of a

team. So based on the obtained results, some of the main guidelines may be proposed.

Premier League teams should improve technical – tactical elements applied in the game with emphasis on bigger situational variations of the same. This should reduce the possibilities for tactical surprise at the match because the team is being introduced with more problematic situations of the game itself. This statement is directly related to an increase of the efficiency of organized offenses. Considering numerous organized offenses among the lower ranked competition teams, the teams should develop more rationalized tactical procedures within individual and group defense tactics. That way the frequency of organised offenses would be decreased as well as making the open space for a shot at goal and reducing the risky situations such as blocking a shot toward their own goal within one's own penalty area. Preventing opponents from obtaining numerous shot opportunities would reduce shots frequency which would in turn isolate the goalkeeper and he would thus have a lower frequency of saves per match. It is evident that the effective playing time of teams competing at lower ranked competitions is shorter. This statement does not have to be a disadvantage but the teams at lower ranked competitions should pay more attention to the tactics of standard situations especially after the breaks due to opponent's faults and throw-ins. By achieving a high level of technical preparedness, currently where BiH Premier League teams are inferior to Euro 2008 national teams and considering the inefficiency in the finals of organized offenses, more favourable conditions for raising the quality and more rational tactical variants are created which is surely a precondition for high quality soccer.

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RAZLIKE U INDIKATORIMA SITUACIONE EFIKASNOSTI IZMEĐU TIMOVA KOJI SE TAKMIČE U RAZLIČITIM RANGOVIMA TAKMIČENJA

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Sažetak

Glavni cilj ovog istraživanja je identifikacija razlika u nekim varijablama situacione efikasnosti nacionalnih fudbalskih timova koji su učestvovali na evropskom fudpalskom prvenstvu 2008 i timova koji su učestvovali u bosanskoj nogometnoj Premijer ligi u sezoni 2008/2009. Dobiveni rezultati pokazuju da su timovi iz Premijer lige organizovali više napada po utakmici. Također, na ovom nivou takmičenja timovi su imali više blokiranih šuteva u kaznenom prostoru i veći broj šuteva koji su golmani uspješno odbranili. To nam govori das u timovi iz Premijer lige tehnički inferiorniji i da nemaju racionalne taktičke odluke u odbrani u odnosu na timove koji su igrali na Euru 2008. Dodatno, možemo vidjeti da efikasnost tokom utakmice u Premijer ligi je kraća u odnosu na Euro 2008 jer na ovom nivou takmičenja timovi imaju više prekida tokom utakmice. Rezultati pokazuju da timovi iz bosanske Premijer lige trebaju poboljšati tehničko-taktičke akcije, sa naglaskom na veću situacionu varijabilnost i rad na realizaciji individualnih i grupnih taktičkih zadataka, kako u odbrani tako i u napadu, a sa ciljem da se poveća nivo tehničke pripremljenosti igrača te tako stvorili uslovi za efikasniju završnicu i bolje pronalaženje adekvatnih rješenja u neočekivanim situacijama.

Ključne riječi: *medijan test, tehnika, taktika, realizacija, efikasnost*

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