

DIFFERENTIATED ANALYSIS OF OFFENSIVE ACTIONS BY FOOTBALL PLAYERS IN SELECTED MATCHES FROM THE EURO 2008

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Abstract

Introduction. Football training should be organized in view of the requirements of contemporary sports and should be analyzed based on data obtained by observing the best teams in action. The goal of this study was to compare the frequency and effectiveness of selected tactical and technical actions performed by footballers from winning and losing teams in selected matches from the Euro 2008. **Material and methods.** The study involved close observation of performances by 166 players from 11 countries in 8 matches (Turkey-Czech Republic 3:2; Turkey-Switzerland 2:1; Italy-France 2:0; Holland-France 4:1; Sweden-Greece 2:0; Spain-Sweden 2:1; Germany-Portugal 3:2; Spain-Germany 1:0). The total amount of game observation time equaled 720 minutes. Analysis was conducted by repeatedly viewing DVDs of matches and coding the results on a detailed observational spreadsheet containing a detailed breakdown of offensive actions such as attempting goals, passing the ball or 1v1 attacking. **Results and conclusions.** Analysis showed that winning teams were more effective in seven out of eight indexes, i.e.: overall effectiveness in offense, effectiveness in attempting goals, overall effectiveness in passing, effectiveness in passing in easy situations, and effectiveness in 1v1 attacking. Losing teams were more effective solely in the index for passing in difficult situations.

Key words: football, soccer, Euro, European Football Championship, observation, winners, losers

Introduction

The contemporary game of football is characterized by the dominance of offensive actions based on rapid playmaking without receiving the ball, “full force” play connected with variable positions and tasks, and preventing the opponent from influencing the course of the game through “ball play”. However, once possession of the ball has been lost, the players immediately seek to “rebuild” defensively and perform coordinated group actions aimed at recovering the ball from the rival [1].

The goal in observing how teams and players from the best clubs play football is to determine their underlying tactical and technical characteristics. These observations lead to important practical results: they show which elements are the most important in training footballers. The scope of the observations was both international [including 2, 3, 4, 5] and national [including 6, 7, 8, 9, 10].

In light of the above, there is no doubt that football training should be organized in view of the requirements of contemporary sports and should be analyzed based on data obtained by observing the best teams in action.

This study presents aspects of offensive play connected with kicking goals, passing the ball and 1v1 attacking as performed by the best teams playing during the 12th European Football Championship in 2008.

The goal of the study was to compare the frequency and effectiveness of selected tactical and technical actions performed by footballers from winning and losing teams in selected

matches from the Euro 2008. The questions to be investigated are as follows:

1. Do winning teams employ tactical and technical offensive actions more or less often than losing teams?
2. What levels of effectiveness in which offensive actions involving ball play influence winning a match?

Material and methods

The study examined footballers participating in the 12th European Football Championship held in Austria and Switzerland in 2008. It involved close observation of performances by 166 players from 11 countries at 8 matches (Turkey-Czech Republic 3:2; Turkey-Switzerland 2:1; Italy-France 2:0; Holland-France 4:1; Sweden-Greece 2:0; Spain-Sweden 2:1; Germany-Portugal 3:2; Spain-Germany 1:0). The total amount of game observation time equaled 720 minutes.

The study method consisted of systematic, external observation categorized using a standardized study tool: the observation spreadsheets proposed by Szwarc [10]. Observation was conducted by watching DVDs of football matches on TV. Analysis was conducted of the following tactical and technical actions: goal attempts, passes and 1v1 attacks, which were coded in light of 3 playing field zones (Fig. 1): **A** – defense (from the team’s own goal line to around 35 meters), **B** – midfield (around 35-70 meters from their own goal line), **C** – attack (around 70 to 105 meters from their own goal line).

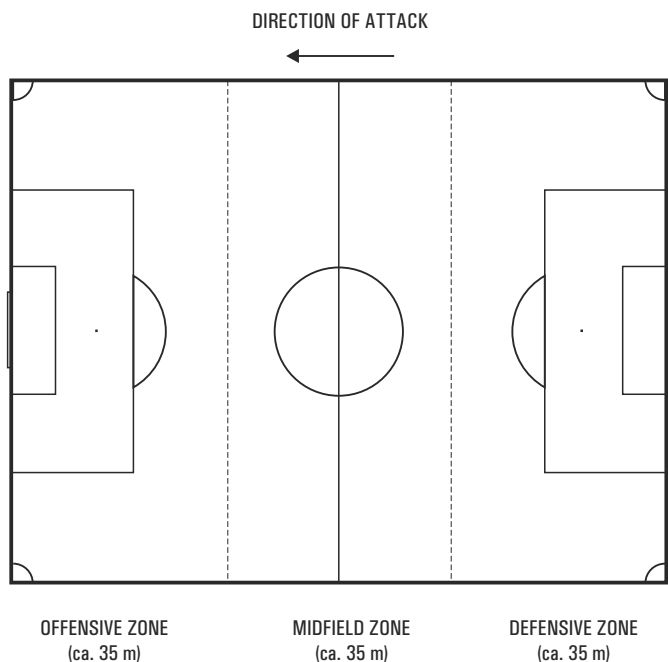


Figure 1. Division of field into zones

Goal attempts

Records were kept of goal attempts made by striking the ball with the foot or head in easy or difficult situations as follows: attempt using right foot, left foot and head. The quality of the attempts were also recorded: accurate attempt, goal scored; accurate attempt blocked by goalie; goal blocked by defender; inaccurate attempt.

Records were also kept of attempts involving direct and indirect free kicks, penalty kicks and corner kicks.

Passing the ball

Records were made of successful passes to teammates in easy¹ and difficult² situations and in reference to the zone where the attempt took place (A, B, C). Goalies were also observed for accurate and inaccurate passes:

- by kicking the ball after receiving it from a teammate,
- by kicking it while in possession of the ball,
- by throwing it any number of ways,
- by drop kicking the ball from the goal for "accuracy".

1v1 attacking

1v1 attacking is the sum total of the reactions and actions of a player who possess the ball and whose goal is to evade his rival and realize the principles of the game unhindered. 1v1 attacking was coded based on the zone where the action took place (A, B, C).

Statistical analysis was conducted using the program *Statistica 6.0*. The following descriptive statistics were used: arithmetic average, minimum value, maximum value, standard deviation, and Student's *t* test for independent groups.

Results

Analysis of the data showed that losing teams made more goal attempts than winning teams: 117 vs. 112 attempts, respectively. Winning teams made an average of 14 attempts per game, while losing ones averaged 14.6 attempts. It can be assumed that this is a result of the winning team's controlling the course of the match and defending their "lead" (Tab. 1).

The players under observation scored 26 goals, of which 19 were by players on winning teams and 7 by those on losing teams, yielding an average of 2.37 goals per match for winners and only 0.87 for losers. Significant differences were detected here among groups of teams ($p < 0.05$). Szwarc [12] and Buraczewski [13] noted similar results; both found that winning teams were more effective in making goal attempts.

There were 18 goal attempts made during set plays (11 times by winners, 7 by losers) leading to a single goal (Tab. 1). No significant statistical differences were detected here between winning and losing teams.

In analyzing unsuccessful goal attempts, it was noted that winning teams made 43 such attempts (5.4 times per match), while their opponents made 50 (6.2 times per match). Goalies prevented goal attempts by rivals 62 times; 30 of these were by goalies from winning teams and 32 from losing teams.

The analysis further shows that players from winning teams passed the ball more often than those from losing ones. The difference in the number of passes averaged 37.75 per match – a relatively small difference. Analysis of passes made in zones A and B also failed to reveal any large differences. However, attention should be drawn to the large disparities in zone C, where fluctuations averaged around 15 passes per match in the winning teams' favor. In both cases, no significant statistical differences were detected (Tab. 2).

Observation and analysis of successful and unsuccessful passes revealed that both kinds of passes were made more frequently by players from winning teams. From this it follows that winning players were in possession of the ball more often and therefore passed the ball to fellow players more frequently, although these pass attempts were not always successful. Examining successful pass attempts for each of the three zones reveals fundamental differences. Losing teams predominate in zone A; however, the number of passes made by winning teams increases as the distance to the opponent's goal decreases (an average difference of 25 passes in zone B and over 16 in zone C). No major disparities were noted for unsuccessful pass attempts. Both groups of teams made similar numbers of unsuccessful pass attempts.

Analysis of pass attempts in easy situations shows that the results closely approximate those of accurate pass attempts. Winning teams dominate here as well. This was particularly evident in zones B and C, where the difference per match amounted to an average of 31 and 17 passes, respectively. Losing teams led the way in zone A by a small margin – nearly 5 passes more. Furthermore, analysis of successful pass attempts in easy situations revealed the following: in zone A losing teams had a slight lead, while in B and C there were major differences, with the winners leading by 30 and 16.5 passes, respectively. Only minimal differences were detected for unsuccessful pass attempts in easy situations (Tab. 3).

¹ An **easy situation** is one in which the player does not come into direct contact with his opponent, is not attacked by him for the purpose of stealing the ball and is not forced to perform disadvantageous actions; he has the possibility to prepare to perform a given action; he is located in a convenient part of the field favorable to him; he can choose how to resolve the game situation.

² A **difficult situation** arises when the player with the ball finds himself in direct contact with his rival, is attacked by him for the purpose of delaying his actions or stealing the ball, is in a situation with limited time and space or one directly involving a chance of losing the ball or scoring a goal.

Table 1. Goal attempts made by players from “winning” and “losing” teams

Statistical indexes	Game element	Goal attempts by body part used							
		Total		Foot		Head			
Total		112	117	90	108	22	9		
Min-Max		10-17	5-24	8-14	5-22	1-5	0-2		
x-SD		14.00±2.83	14.63±6.00	11.25±2.12	13.50±5.32	2.75±1.39	1.13±0.99		
Test t		0.852		2.173*		2.694*			
Statistical indexes	Game element	Attempts during regular play				Attempts during set play			
		Total		Successful (goals)		Total		Successful (goals)	
Total		101	110	18	7	11	7	1	0
Min-Max		9-16	4-23	1-4	0-2	0-2	0-3	0-1	0-0
x-SD		12.62±2.88	13.75±5.90	2.38±0.92	0.88±0.83	1.38±0.74	0.88±0.99	0.13±0.35	0±0
Test t		0.485		3.424*		1.141		1.000	
Statistical indexes	Game element	Attempts by effectiveness							
		Successful (goals)		Defended by goalie		Blocked by defender		Missed	
Total		19	7	32	30	19	7	32	30
Min-Max		1-4	0-2	1-8	1-6	1-4	0-2	1-8	1-6
x-SD		2.38±0.92	0.88±0.83	4±2.92	3.75±2.19	2.38±0.92	0.88±0.83	4-2.92	3.75±2.19
Test t		3.424**		0.193		2.725*		1.026	

* indicates statistical significance p<0.05; ** p<0.01

successful unsuccessful

Table 2. Pass attempts made by players from “winning” and “losing” teams

Statistical indexes	Game element	Total for all pass attempts							
		Total		Zone A		Zone B		Zone C	
Total		3586*	3284*	597	667	2112	1891	730	611
Min-Max		314-645	289-521	34-107	49-119	160-439	155-308	51-132	38-114
x-SD		448.25±100.12	410.5±84.95	74.63±22.24	83.38±27.36	264±90.94	236.38±56.63	91.25±26.72	76.38±27.60
Test t		0.813		0.702		0.729		1.095	
Statistical indexes	Game element	Total for all successful pass attempts							
		Total		Zone A		Zone B		Zone C	
Total		2876*	2591*	499	581	1790	1589	526	395
Min-Max		208-573	184-421	21-100	38-108	114-392	110-268	41-92	27-76
x-SD		359.5±107.04	323.88±88.98	62.38±23.16	72.63±25.96	223.75±86.82	198.63±59.44	65.75±16.14	49.38±20.46
Test t		0.724		0.833		0.675		2.212*	
Statistical indexes	Game element	Total for all unsuccessful pass attempts							
		Total		Zone A		Zone B		Zone C	
Total		722*	682*	97	91	307	310	222	190
Min-Max		67-116	72-105	7-21	2-21	21-49	30-45	10-40	9-34
x-SD		90.25±16.71	85.25±11.36	12.13±4.49	11.38±5.63	38.38±12.32	38.75±4.53	27.75±11.04	23.75±9.30
Test t		0.700		0.295		0.081		0.922	

* indicates statistical significance p<0.05

• Total includes numbers for all passes in zones A, B and C and goalie kicks

successful unsuccessful

Table 3. Pass attempts made in easy situations by players from “winning” and “losing” teams

Statistical indexes	Game element	Total for all pass attempts in easy situations							
		Total		Zone A		Zone B		Zone C	
Total		3067*	2709*	448	495	1854	1606	615	479
Min-Max		241-569	225-458	23-91	24-96	120-403	125-281	44-115	18-98
x-SD		383.38±96.25	338.63±98.19	56±19.89	61.88±27.28	231.75±89.32	200.75±63.64	76.88±21.85	59.88±27.86
Test t		0.921		0.492		0.800		2.169*	
Statistical indexes	Game element	Total for all successful pass attempts in easy situations							
		Total		Zone A		Zone B		Zone C	
Total		2570*	2230*	400	454	1645	1405	467	335
Min-Max		180-510	152-393	13-86	19-88	97-369	97-253	36-82	15-71
x-SD		321.25±97.65	278.75±100.47	50±21.17	56.75±27.41	205.63±85.53	175.63±65.85	58.38±13.49	41.88±21.38
Test t		0.858		0.551		0.786		2.199*	
Statistical indexes	Game element	Total for all unsuccessful pass attempts in easy situations							
		Total		Zone A		Zone B		Zone C	
Total		504*	479*	48	41	209	201	148	153
Min-Max		51-87	46-73	2-12	0-10	19-34	12-31	8-33	3-30
x-SD		63±12.55	59.88±9.14	6±3.55	5.13±3.40	26.13±5.54	25.13±6.15	18.5±8.62	19.13±9.13
Test t		12.55		9.14		3.55		3.40	

* indicates statistical significance p<0.05

• Total includes numbers for all passes in zones A, B and C and goalie kicks

successful unsuccessful

Table 4. Pass attempts made in difficult situations by players from “winning” and “losing” teams

Statistical indexes	Game element	Total for all pass attempts in difficult situations							
		Total		Zone A		Zone B		Zone C	
Total		513*	574*	149	176	257	295	115	123
Min-Max		39-76	46-110	11-24	10-34	10-43	12-63	3-38	9-24
x-SD		64.13±11.98	71.75±21.10	18.63±4.34	22±7.93	32.13±10.22	36.88±17.10	14.38±10.78	15.38±5.04
Test t		1.266		2.152*		0.848		0.238	
Statistical indexes	Game element	Total for all successful pass attempts in difficult situations							
		Total		Zone A		Zone B		Zone C	
Total		303*	370*	99	127	145	184	59	60
Min-Max		28-63	32-83	8-15	8-27	7-23	9-43	1-26	3-14
x-SD		37.88±12.46	46.25±19.49	12.38±2.67	15.88±6.45	18.13±4.91	23±12.38	7.38±8.12	7.5±4.14
Test t		2.221*		2.271*		2.172*		0.039	
Statistical indexes	Game element	Total for all unsuccessful pass attempts in difficult situations							
		Total		Zone A		Zone B		Zone C	
Total		218*	203*	50	49	112	91	56	63
Min-Max		16-39	17-32	2-9	2-11	3-26	3-17	2-12	4-11
x-SD		27.25±6.92	25.38±5.07	6.25±2.55	6.13±2.80	14±7.62	11.38±4.81	7±3.82	7.88±2.80
Test t		0.618		0.093		0.853		0.523	

* indicates statistical significance p<0.05

• Total includes numbers for all passes in zones A, B and C and goalie kicks

successful unsuccessful

Analysis of pass attempts in difficult situations, i.e. those involving active interference on the part of an opponent, reveals no significant differences between groups. Players from losing teams led the way both in the total number of pass attempts and the number of attempts per zone (A, B, C).

Analysis of successful pass attempts in difficult situations reveals that players from losing teams led the way here as well for all three zones. The largest difference was detected in zone B (a difference of nearly 5 passes per match). Players from winning teams made more unsuccessful pass attempts in difficult situations, although they did make a smaller number of unsuccessful passes to players in zone C (Tab. 4).

In summing up the analysis of the results of pass attempts in various situations, it can be shown that players from winning teams passed to their teammates more often. However, differences in this area were insignificant and should not be assumed to have had a decisive influence on the outcome of the match.

passes per zone. On average, winning players won 13.25 duels, as opposed to 14.75 for losing ones. The number of 1v1 duels conducted differed depending on the zone and the position and skills of players engaged in the duel (Tab. 5).

Discussion

Table 6 lists effectiveness indexes for offensive play by winning and losing teams. Analysis of the data shows that winning teams scored higher in seven of the eight indexes, i.e.: overall effectiveness in offense (A), effectiveness in attempting goals (S_s, S_c, S_{SFG}), overall effectiveness in passing (P_o), effectiveness in passing in easy situations (P_e), and effectiveness in 1v1 attacking. Losing teams were more effective solely in the index for passing in difficult situations (P_T).

In analyzing the results obtained in studying overall offen-

Table 5. 1v1 attacking by players from “winning” and “losing” teams included in the study

Statistical indexes	Game element	1v1 attacking duels won							
		Total		Zone A		Zone B		Zone C	
Total		106	118	6	4	63	69	46	45
Min-Max		3-31	10-26	0-2	0-2	3-13	6-17	2-16	1-9
x-SD		13.25±8.58	14.75±5.04	0.75±1.04	0.5±0.76	7.88±3.72	8.63±3.58	5.75±4.38	5.63±2.72
Test t		0.426		0.552		0.411		0.069	

successful
unsuccessful

Losing players made more successful pass attempts, but they also led the way in unsuccessful ones. In simple situations, the winners were also shown to have led by a small margin, while falling behind in number and quality of passes in difficult situations. This may be due to the fierce, neck-and-neck competition that characterized the Euro 2008 finals.

Buraczewski [9] obtained different results indicating that the team representing Poland in the 2002 World Cup finals led the way in pass frequency and accuracy.

Analysis of 1v1 attacking showed that the balance of winning duels favored losing teams. However, the differences were slight, both with regard to the total number and the number of

sive effectiveness, it should be pointed out that nearly identical results were obtained by Szwarc [14] in his study of winning players from selected games from the 1998 World Cup, the 2000 Africa Cup of Nations, the Euro 2000, the 2001 Copa América and the 2002 World Cup, which also showed that winning teams were more effective in offense, leading by nearly 3%. He obtained similar results for comparisons of overall effectiveness in goal attempts, passing and 1v1 attacking.

Conclusions

1. No significant deviations were detected in the frequency with which winning and losing teams employ technical and tactical actions.
2. Players from winning teams were more effective at almost every aspect of offensive play included in the study. The largest differences concerned the effectiveness of goal attempts made during regular play and set play.

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Table 6. Gameplay effectiveness indexes for “winning” and “losing” teams included in the study

Gameplay effectiveness indexes			
Type	Symbol	Value (%)	
		Winners N=8	Losers N=8
Overall effectiveness in offense	A	79.31	76.53
Overall effectiveness in goal attempts	S _s	16.96	5.98
Overall effectiveness in attempting goals during regular play	S _c	17.82	6.36
Overall effectiveness in attempting goals during set play	S _{SFG}	9.09	0
Overall effectiveness in passing the ball	P _o	80.2	78.9
Passing effectiveness in easy situations	P _e	83.8	82.3
Passing effectiveness in difficult situations	P _T	59.06	64.46
Effectiveness in 1v1 attacking	D _{1v1}	52.74	52.68

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Submitted: July 26, 2013

Accepted: August 23, 2013