

CHARACTERISTICS OF GOALS AND GAME AT THE TOP CHAMPIONSHIPS IN FUTSALDjordje Cuzovic¹
Zdravko Šolak¹**ABSTRACT**

As characteristics of the goals scored in the futsal, the following are taken into account: the part of the goal that is successfully hit, the part of the field from which the ball was shot, the time that passed from the beginning to the goal scored and the changes of the result during the match. These qualities have been brought into connection with the qualities of the game taking into account the games in the group stage of the competition and the games in the playoffs. The characteristics of the goals are also linked with the results of the matches in which they were achieved and with the result changes during the match. The research was conducted at a set of matches from the futsal competitions played in 2016, at the European Championship and the World Cup. In these competitions, the bottom half of the goal was hit 330 times (68.6%) and the top one 151 times (31.4%). The right side of the goal was hit 249 times (51.8%) and the left one 232 times (48.2%). From penalty area teams scored 39.1% goals and 54.3% out of it. The proportion of goals that the winning teams scored from outside the penalty area is higher in the group stage than in the playoffs. Especially significant was the goal by which one team comes to the lead of two goals advantage. In European Championship and the World Cup, a team was leading by two or more goals during 34% and 38% of the total time, respectively.

Key words: Futsal. Goals. Match Result.

1-Novi Sad School of Business, Novi Sad, Serbia.

E-mails:
cuzovic@gmail.comCorresponding author:
Djordje Cuzovic, address: Vladimira Perica
Valtera 4, 21000 Novi Sad, Serbia;**RESUMO**

Características dos gols e do jogo no top campeonato em Futsal

Como características dos gols marcados no futsal, são levados em conta os seguintes: a parte do gol que é acertada com sucesso, a parte do campo de onde a bola foi chutada, o tempo que passou desde o início até o gol marcado e as mudanças do resultado durante a partida. Estas qualidades foram colocadas em conexão com as qualidades do jogo, tendo em conta os jogos na fase de grupos da competição e os jogos nos playoffs. As características dos gols também estão ligadas aos resultados dos jogos em que foram realizados e com as mudanças de resultado durante a partida. A pesquisa foi realizada em um conjunto de partidas das competições de futsal disputadas em 2016, no Campeonato Europeu e na Copa do Mundo. Nestas competições, a metade inferior do gol foi atingida 330 vezes (68,6%) e a superior 151 vezes (31,4%). O lado direito do gol foi atingido 249 vezes (51,8%) e o esquerdo, 232 vezes (48,2%). Por pênalti as equipes marcaram 39,1% das metas e 54,3% delas. A proporção de gols que as equipes vencedoras marcaram de fora da área de penalidade é maior na fase de grupos do que nos playoffs. Especialmente significativo foi o gol pelo qual uma equipe chega à vantagem de dois gols. No Campeonato Europeu e na Copa do Mundo, uma equipe liderava por dois ou mais gols em 34% e 38% do tempo total, respectivamente.

Palavras-chave: Futsal. Gols. Resultado da partida.

INTRODUCTION

In this work, the characteristics of the goals scored in the futsal were brought in connection with the quality of the game itself. We had in mind the results of individual matches and the stage of the competition in which the games were played. We took into account the goals scored in the top competitions in 2016, the European Championship and the World Cup. The European Championship was played in Serbia with the participation of 12 teams, 20 matches were played with 129 goals scored. The World Cup was played in Colombia with the participation of 24 teams, 52 games were played with 352 goals scored. At the European Championship in Serbia, the average number of goals per match (rounded to the full number) was 6, and at the World Cup 7. At the World Cup in Colombia, some teams were the same that participated in the European Championships in Belgrade (Serbia). National teams of Spain, Russia, Italy, Portugal, Ukraine and Kazakhstan took part in both competitions.

Analysis method

The data has been collected from the Fédération Internationale de Football Association - FIFA (www.fifa.com) and the Union of European Football Associations - UEFA (www.uefa.com). Video reports from the matches of the European Championships and the World Cup in 2016 were viewed, for duration of 2 to 3 minutes, showing the goals and the most important details of each game. By observing the available reports, the characteristics of the goals were recorded.

In the classification of the goal set, four criteria were applied: a) according to the goal area, b) according to the place from which the goal was scored, c) according to the time, d) in relation to the result status. A set of matches was classified in a) games played in a group and b) games played in the playoffs. Two more sets were formed, taking into account the outcome of the matches: a) a set of teams that won in some matches, b) a set of teams that were defeated in some matches. We also defined several conditions having in mind the course of the game: a) the draw result 0: 0, b) the other draw result, c) the lead by one goal, d) the lead by two goals e) the lead by three

and more goals. The goals characteristics were compared taking into account the stage of the competition, the outcome of individual matches and the result state.

In the analysis of the goals regarding part of the goal that was hit and in relation to the place on the field from which the kick was sent, the field and the goal frame were divided as shown in Figure 1.

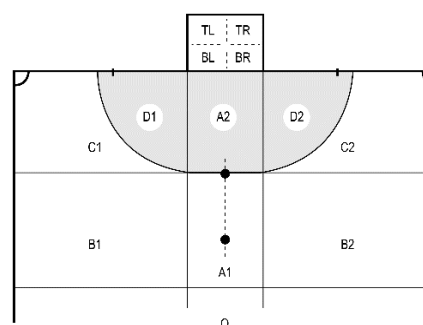


Figure 1 - Parts of the field and parts of the goal.

The goal area was divided to T (top part) and B (bottom part), and to L (left) and R (right), resulting in four equal surfaces TR, TL, BR and BL. The field was divided into 9 parts (A1, A2, B1, B2, C1, D1, D2 and O). Parts A2, D1, D2 belong to the penalty area. A1 and A2 are directly in front of the goal (frontal area). B1, C1, D1 are at the left part of the field and B2, C2, D2 are at the right part of the field. Part O is the rest of the field (long distance goals).¹

Scores according to the part of the goal

The goals achieved at the European Championship and the World Cup 2016 were similarly distributed regarding of the part of the goal that was successfully hit (Table 1). Observing the results as a whole, it is noted that the bottom part of the goal (BR + BL) is more often successfully hit than the top one (TR + TL). The bottom half was hit 330 times (68.6%) and the top one 151 times (31.4%). The difference is smaller when considering the right and the left half of the goal. The right side of the goal (TR + BR) was hit 249 times

¹ Field and goal parts may also be shown in other ways, see (Gómez and collaborators, 2015; Lapresaa and collaborators, 2013; Sarmiento and collaborators, 2016).

Revista Brasileira de Futsal e Futebol

ISSN 1984-4956 *versão eletrônica*

Periódico do Instituto Brasileiro de Pesquisa e Ensino em Fisiologia do Exercício

www.ibpex.com.br / www.rbff.com.br

(51.8%) and the left one (TL + BL) 232 times (48.2%).

The scores structure according to the part of the goal, in particular stages of

competition, is given in Table 2. The structure is also given regarding the goals scored by the teams that won or lost in particular matches.

Table 1 - Scores according to parts of the goal at the championships in 2016.

	European Championship		World Cup		total	
	n	%	n	%	n	%
TR	22	17.0	60	17.0	82	17.1
TL	12	9.3	57	16.2	69	14.3
BR	46	35.7	121	34.4	167	34.7
BL	49	38.0	114	32.4	163	33.9

Table 2 - Scores according to parts of the goal at the European Championship 2016 and World Cup 2016 - winners and defeated teams (%).

Part of the goal	total		goals scored by winning teams		goals scored by defeated teams	
	group	playoff	group	playoff	group	playoff
T: (TR + TL)	31.1	31.9	32.9	30.8	28.4	32.4
B: (BR + BL)	68.9	68.1	67.1	69.2	71.6	67.6
R: (BR + TR)	52.5	50.3	54.8	53.8	53.3	48.6
L: (TL + BL)	47.5	49.7	45.2	46.2	46.7	51.4

Bearing in mind all the goals from the European Championship and the World Cup, there were 31% scores at the top part of the goal (T) and remaining 69% were scored at the bottom part. There was no large difference in relation to this structure regarding the set of goals scored in the group stage of the competition or in the playoffs. Earlier research also showed that the bottom part of the goal was more often hit. At the 2012 World Cup, held in Thailand, teams scored 76% of the goals in the bottom part and 24% in the top part of the goal (Abdel-Hakim, 2014).

Goals according to part of the field and the stage of the competition

Distribution of goals scored according to the part of the field and the stage of the competition is given in Table 3. In these competitions, 39.1% goals were scored from inside the penalty area, and 54.3% outside of it. Position A2 is a part of the field from which the highest number of goals has been

achieved, having in mind both competitions in 2016. In other works that were analyzing the position from which the goal was scored in the futsal, the part in front of the goal is the position from which the goal is most often scored. This was the case with the team of the Spanish Primera Division de Sala (Sarmiento and collaborators, 2016). A similar conclusion was drawn on a large set of goals in the Spanish Futsal League (Álvarez and collaborators, 2004) and the UEFA 2010 Futsal Championship (Lapresa and collaborators, 2013).

The ratio of the goals scored from the "left side" (field parts B1, C1 and D1) and the number of goals scored from the "right side" (field parts B2, C2 and D2) is shown in Table 4. For goals scored in the playoff stage this ratio is closer to one than at the group stage at both the European Championship and the World Cup. This is especially pronounced regarding the shorter distance from the goal, i.e. ratio $(C1 + D1) / (C2 + D2)$.

Table 3 - Distribution of goals scored according to the part of the field and the stage of the competition at the championships in 2016.

part of the field	European Championship				World Cup			
	group stage	playoff	total	(%)	group stage	playoff	total	(%)
A1	7	5	12	9.3	43	14	57	16.2
A2	14	15	29	22.5	58	35	93	26.4
B1	5	6	11	8.5	34	10	44	12.5
B2	20	5	25	19.4	32	13	45	12.8
C1	6	4	10	7.7	9	2	11	3.2
C2	2	6	8	6.2	13	2	15	4.3
D1	3	5	8	6.2	22	9	31	8.8
D2	7	3	10	7.8	8	9	17	4.8
O	5	6	11	8.5	6	6	12	3.4
AccF	1	0	1	0.8	5	5	10	2.8
Own goal	3	0	3	2.3	8	2	10	2.8
Penalty kick	0	1	1	0.8	7	0	7	2.0

Table 4 - Goal scoring for the "left" and "right" sides at the championships in 2016.

	European Championship		World Cup	
	group stage	playoff	group stage	playoff
C1+D1	9	9	31	11
C2+D2	9	9	21	11
„left“: B1+C1+D1	14	15	65	21
„right“: B2+D2+C2	29	14	53	24
(C1+D1)/(C2+D2)	1.00	1.00	1.48	1.00
(B1+C1+D1)/(B2+C2+D2)	0.48	1.07	1.23	0.88

Goals received from a long distance (position O) more often appeared on the European Championships than at the World Cup. Goals received from a free kick after five accumulated fouls (category AccF) and after penalty kicks were more common in the World Cup, where such hits were more often in the group stage of the competition than in the playoffs.

Goals and outcome of the game

In the official result of a futsal match that ended with the victory of one team, the goals scored by the winning team and the goals scored by the defeated team are listed.

Bearing in mind all the matches in the competition it is possible to form a set of goals by the winning teams and a set of goals by the defeated teams. In Table 5, the goals by the winning and defeated teams at the European Championship and the World Cup in 2016 are ranked according to the field area (within/outside penalty area) from which a kick was shot that ended with the goal. The goals by the winning teams include the goals by the team that won after the extra time or penalties. The goals scored are divided into two groups. The first group consists of goals scored from the penalty area, while the second group consists of goals scored from outside the penalty area.

Table 5 - Goal scoring according to the part of the field and the stage of the competition at the championships in 2016.

	European Championship		World Cup		total		total (%)	total (%)
	penalty area	outside	penalty area	outside	penalty area	outside		
	group stage							
winning teams	15	33	55	105	70	138	33.7	66.3
defeated teams	8	10	23	24	31	34	47.7	52.3
	playoff							
winning teams	13	25	33	34	46	59	43.8	56.2
defeated teams	10	7	20	13	30	20	60.0	40.0
	total							
winning teams	28	58	86	139	114	197	37.7	63.3
defeated teams	18	17	43	37	61	54	53.0	47.0

The winning teams were more successful than the defeated ones in achieving the goal from a greater distance – from the field parts outside the penalty area – both in the group stage of the competition and in the playoffs. The proportion of goals that the winning teams scored from outside the penalty area is higher in the group stage than in the playoffs, which suggests that they had not only the skills to lead the attack but also the skill of the defense.

Goals distribution in time

The total number of goals scored at the European Championship and the World Cup 2016 was as follows (Table 6): first half

222 goals (46.2%), second half 246 goals (51.1%), 13 goals in extra time (2.7%). At the European Championship, teams which led at the half-time, eventually won in 75% of the games, and the team that scored the first goal in the match had the same percentage of success. At the World Cup the teams that led at the half-time managed to win in 71.2% matches, while the teams that scored the first goal won 76.5% of the matches played. At the seven previous World Cups organized by FIFA between 1989 and 2012 (World Cup 1989, World Cup 1992, World Cup 1996, World Cup 2000, World Cup 2004, World Cup 2008 and World Cup 2012), the average wins of the team that scored the first goal was 73.66% (Leite, 2013).

Table 6 - Goals distribution in time at the championships in 2016.

Time intervals (minutes)	European Championship	World Cup	Total
1- 5	7	35	42
6-10	15	32	47
11-15	14	41	55
16-20	18	60	78
first half	54	168	222
21-25	18	37	55
26-30	15	44	59
31-35	16	43	59
36-40	25	48	73
second half	74	172	246
first extra time	1	4	5
second extra time	0	8	8
Total	129	352	481

By the division of the total time of the game into intervals of five minutes, "end effect" is quite visible. In the last five minutes of the first half, a lot more goals have been scored than in other parts of the game. At the European Championship 2016, there were significantly more goals scored in the last five minutes of the game than in the other five-minute intervals. At the 2012 Futsal World Cup in Thailand, the most goals were scored in the final part of the game: 32.95% in the last ten minutes of the game (Abdel-Hakim, 2014).

Goals and result

The starting result of 0: 0 changes as teams achieve scores. In total time played, there are periods with draw result (0: 0, 1: 1, 2: 2, ...), periods during which one of the teams led with one goal advantage, and the time

during which one of the teams led with two or more goals advantage (Figure 2).

At both tournaments, European Championship and World Cup 2016, there is a considerable significance of a goal by which one team increased the lead to two-goal advantage. At the European Championship, such a situation was achieved 17 times (11 times in group stage and 6 times in playoff stage). All matches ended with the win of the team that achieved such advantage. The losing teams did not manage to equalize the result. Also at the World Cup in Colombia, the lead by two goals advantage has often led to victory in the match. Such a situation has been achieved 48 times. The match ended 31 times with the victory of the team that led by two goals advantage. Twice, the losing teams managed to equalize the score to the end of the match and reach the draw outcome, and

Revista Brasileira de Futsal e Futebol

ISSN 1984-4956 *versão eletrônica*

Periódico do Instituto Brasileiro de Pesquisa e Ensino em Fisiologia do Exercício

www.ibpex.com.br / www.rbff.com.br

five times after the equalization they took the lead and won the match. Only in the game between Thailand and Cuba, Thailand national

team, which was at one point losing by three goals difference, managed to win in the end.

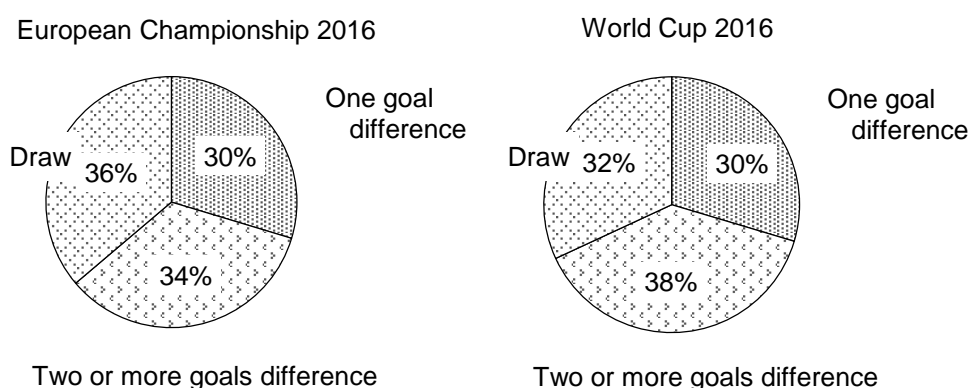


Figure 2 - Total time played at the tournament according to the result state.

CONCLUSION

In top-level futsal competitions, at the European Championship and the World Cup in 2016, some characteristics of the goals found in previous competitions have come to light: the goals were scored by the successful hits more often at the bottom half of the goal than the upper one, and are sent from the frontal part of the court. It was also confirmed that the first goal in the match was often scored by the team that eventually won the match. At the set of goals from the observed competitions in 2016, other characteristics of the goals were also noticed. Bearing in mind the goals scored by the teams that won in the certain games and the goals scored by the teams that lost, the difference in the goals characteristics were more pronounced regarding the part of the field from which the successful hit was sent, than regarding the part of the goal that was hit. The difference between the number of goals scored from the left and right sides of field in the playoff stage of the competition is considerably lower than in the group stage. A significant part of the time at both the European Championship and the World Cup in 2016 went to the game in which the leading team was in the advantage by two goals. A losing team rarely managed to reverse the result to their advantage or to equalize and achieve a draw outcome.

REFERENCES

- 1-Abdel-Hakim, H.H. Quantitative Analysis of Performance Indicators of Goals Scored in the Futsal World Cup Thailand 2012. *Pamukkale Journal of Sport Sciences*. Vol. 5. Num. 1. p. 113-127. 2014.
- 2-Álvarez, J.; Manero, J.; Manonelles, P.; Puente, J. Analysis of the offensive actions resulting in goal of professional league of Spanish futsal. *Revista de entrenamiento deportivo*. Vol. 23. Num. 4. p. 27-32. 2004.
- 3-Gómez, M.A.; Moral, J.; Lago-Peñas, C. Multivariate analysis of ball possessions effectiveness in elite futsal. *Journal of Sports Sciences*. Vol. 33. Num. 20. pp. 2173-2181. 2015.
- 4-Leite, W. The impact of the first goal in the final result of the futsal match. *Annals of Applied Sport Science*. Vol. 1. Num. 3., pp. 1-8. 2013.
- 5-Lapresa, D.; Álvarez, L.; Arana, J.; Garzón, B.; Caballero, V. Observational analysis of the offensive sequences that ended in a shot by the winning team of the 2010 UEFA Futsal Championship. *Journal of Sports Sciences*. Vol. 31. Num. 15. p. 1731-1739. 2013.

Revista Brasileira de Futsal e Futebol

ISSN 1984-4956 *versão eletrônica*

Periódico do Instituto Brasileiro de Pesquisa e Ensino em Fisiologia do Exercício

www.ibpex.com.br / www.rbff.com.br

6-Sarmiento, H.; Bradley, P.; Anguera, T.; Polido, T.; Resende, R.; Campaniço, J. Quantifying the Offensive Sequences that Result in Goals in Elite Futsal Matches. *Journal of Sports Sciences*. Vol. 34. Num. 7. p. 621-629. 2016.

Received for publication in 10/29/2017

Accept in 01/01/2018