



THE IMPORTANCE OF CORNERS IN THE TACTICAL PREPARATION OF PROFESSIONAL FOOTBALLERS

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Abstract:

Corners are a segment of the game from which goals are not often scored, but they may be a decisive factor in the outcome of the match between the two teams. The aim of this research is to determine the characteristics of performing a corner kick and to examine whether there are differences between different competitions of professional football players. The sample of respondents represents the matches of the International Champions Cup in the 2018 season and the matches of the Spanish league (La Liga) in the 2017/2018 season. A total of 23 matches (13 matches of the International Champions Cup and 10 matches of the Spanish league) were analyzed. To describe the tactics of corner kicks, variables were observed that indicate the way the kicks are performed from the corner. The methodology of observing several teams, monitoring all matches and monitoring both teams in each match with the analysis of given variables was used. Corner kicks that had more than three passes, which means starting a new, organized attack, were excluded from the analysis. A total of 209 of the 253 corners were included. The results show that there is no statistically significant difference in most of the observed

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parameters, but in the type of defense that the teams apply, play and lateral performance, there are statistically significant differences. Zone defense (.012) is used more by teams that competed in the International Champions Cup and combined (.036) by teams in the Spanish league. There are also differences in the playoffs (.047) in favor of the International Champions Cup. Corners from the same side (.031) were used more in the International Champions Cup than in the Spanish league. These results show that the teams do not differ much in the way they set up in the defensive phase and the attack phase, but that there are certain common criteria.

Keywords: scoring, notation analysis, match analysis, performance indicators

1. Introduction

A top result in football requires and implies that the player has: a technical, tactical, theoretical, physical and psychological preparation. Each of these components of preparation inseparably constitutes the integral preparation of football players. In its evolution, football has gone through various periods dominated by various forms of preparation. In modern football, a high level of preparation is expected and implied from a player in all aspects, especially from the aspect of tactical skill of both the player and the team (Janković et al., 2016). Football, as one of the most popular sports today, has been mostly studied from different perspectives, especially from the aspect of physiological parameters. However, in recent years, more and more research has appeared that includes a tactical analysis of the game itself. Notational analysis is a topic that is crucial for the improvement of tactical and theoretical knowledge (De Baranda, & Lopez-Riquelme, 2012). Statistical analysis of the game, considering the individual, group and team technical-tactical elements, is certainly a way that can be used to describe and monitor the tactical manifestations and results of the competition. However, more detailed analyzes of matches are a more objective way of looking at tactical activities during matches (Carling et al., 2005).

Game interruptions are a significant factor in a game between two teams. A well-designed, conceived and well-coordinated interruption can significantly affect the end result. Also, it is an indispensable part of the game, there are a number of interruptions in every football match and as such it is necessary to pay a special attention. Interruptions can also be characterized as a "game in a short space", because in a certain space, mostly a shortened space, the action itself takes place. It is also one of the ways for an opponent of lower quality to beat a stronger one. A large percentage of goals are scored from the break (Casal et al., 2015). All these are important factors, the reasons why it is necessary to take the time and special approach to train a team. The very fact is that today in modern football there is no club that does not have an analyst in its professional staff, speaks of the seriousness and importance of the tactical preparation for the match and its contribution to the final result. Research that deals with this form of analysis, over a long period of time, aims to discover on the one hand those technical and tactical parameters of the game that are related to success, and on the other hand to predict new directions,

primarily in tactics of a football game (McGarry et al., 2002). The results of such research and their interpretation have the function of defining new standards of both technical-tactical and theoretical postulates in the development of football. (Leontijević et al., 2017). Numerous studies have shown that between 30% and 40% of goals result from game interruptions (Casal et al., 2015). Simiyu's (2013) research shows that just over 24% of goals were scored at the 2010 World Cup in South Africa. Of the average 30% of interceptions from which goals are scored, the most dominant type of interruption is free kicks 17%, followed by corner kicks (corners) with 7% (Wright et al., 2011). The average number of corners during one game is 10, while the efficiency from which goals are scored varies depending on the type of competition (Casal et al., 2015). By analyzing the competitive activity in football, at the individual or team level, it is possible to identify those moments of the game that to a greater or lesser extent affect the final result (Castelo et al., 2013; Liu et al., 2015). Corner kicks as an integral part of the interruptions are an important factor in the preparation of a team or individual for a competition and forms one part of the integral preparation of an athlete. The aim of this research is to determine the characteristics of performing a corner kick and to examine whether there are differences between different types of competition in professional football players. The mentioned research speaks about the justified importance of the analysis of the corner game, which is why we paid attention to the research and the description of the way the corners are performed. Corners are a segment of the game from which goals are not often scored, but they can be a decisive factor in the outcome of a match between two teams (Castelo, 2009).

2. Material and methods

The sample of respondents represents the matches of the International Champions Cup in the 2018 season and the matches of the Spanish league (La Liga) in the 2017/2018 season. A total of 23 matches were analyzed (13 matches of the International Champions Cup and 10 matches of the Spanish league). All shots from the corner were analyzed during the regular 90 minutes of the game and only those shots preceded by a maximum of three passes or that were centered in a space of sixteen meters were included. A total of 209 of 253 executed corners were included. Corner shots that had more than three passes, which means starting a new, organized attack and shots that ended off the field, without the players having contact with the ball after the throw-in, were excluded from the analysis. When collecting data, the methodology of observing teams, monitoring of all matches and monitoring of both teams in each match with the analysis of given variables was used. To describe the tactics of corner kicks, variables were observed that indicate the way the kicks are performed from the corner. The variables examined are shown in Table 1. Data was processed by standard descriptive statistics (total and mean, as well as standard deviation). The Mann - Whitney U test was used to examine the differences between two independent competitions in individual variables. The level of statistical significance was at $p < 0.05$. In addition to examining the differences, the effect size was also examined to determine how accurate the differences in certain variables

were (Koenov, 1988). All statistical tests were processed using the SPSS 17.0 program (SPSS INCChicago, IL).

Table 1: Overview of observed variables (Retrieved and modified from Casal et al. 2015)

Criterion	Categories
Time	0'-30'
	31'-60'
	61'-90'
Position of corner	Right
	Left
Laterally of corner	Natural: Right-foot kick from right wing of left-foot kick from left wing
	Switched: Right-foot kick from left wing of left-foot kick from right wing
Number of defenders	(4-5) players who are in the defense phase
	(6) or more players who are in the defense phase
Numbers of attackers	(2-3) attackers who attack and are in position give a goal
	(4-5) attackers who attack
	(6) or more attackers who attack
Type of marking	Man-to-man
	Zone
	Combined
Type of shot	Head
	Leg
Final blow	In the goal frame
	Out of the goal frame
Delivery of ball	A corner kick is taken by adding and starting a new attack

3. Results

Based on the performed statistical data processing, Table 2 shows the central and dispersion parameters of the basic statistics of the matches of the International Champions Cup in the 2018 season and the matches of the Spanish league (La Liga) of the 2017/2018 season. Descriptive statistics were obtained by data processing. The results of this research were processed in such a way as to obtain information on the central and dispersion parameters for all manifest variables, namely: arithmetic mean (MEAN), standard deviation (St. Dev.), Number of analyzed matches (N) and total value (Sum).

The results of the descriptive statistics in Table 2 show that most corners occur in the last third of the game, in the time interval from 61 'to 90'. This is shown by the fact that an average of 3.48 shots from the corner were performed in this period of the game. Observing the parameter that shows from which position the corners are taken, we see that there were slightly more corner kicks from the right side, a total of 113, compared to the left side 96. In the lateral corner, which means that the right foot is taken from the right side, the results show that this type of cornering is not very influential. The category of opposite laterality has a higher mean value of 3.48, which means that the so-called "entrance balls" are used.

Table 2: Descriptive statistics (N = 23)

Criterion	Categories	95% CI		Sum	Mean	Std. Dev.
		Lower	Upper			
Time	0'-30'	1.79	3.08	56	2.43	1.502
	31'-60'	2.17	4.18	73	3.17	2.329
	61'-90'	2.77	4.19	80	3.48	1.648
				209	9.087	3.32
Position of corner	Right	3.94	5.89	113	4.91	2.255
	Left	3.05	5.29	96	4.17	2.588
Lateraly of corner	Same	.45	1.29	20	0.87	0.968
	Opposite	2.60	4.36	80	3.48	2.042
Number of defenders	4-5	.03	.58	7	0.3	0.635
	6 or more	7.25	10.32	202	8.78	3.554
Number of attackers	2-3	.62	1.47	24	1.04	0.976
	4-5	5.54	8.37	160	6.96	3.268
	6 or more	.36	8.37	24	1.04	1.581
Type of marking	Man-to-man	.62	2.25	33	1.43	1.879
	Zone	1.85	4.41	72	3.13	2.959
	Combined	3.12	5.83	103	4.48	3.132
Type of shot	Head	1.23	2.42	42	1.83	1.37
	Leg	.50	1.32	21	0.91	0.949
Final blow	In the goal frame	.32	.99	15	0.65	0.775
	Out of the goal frame	1.31	2.6	45	1.96	1.492
Delivery of ball	Starting a new attack	1.74	2.86	53	2.3	1.295

The criterion of the number of defensive players is significantly higher in category 6 or more players who are in the defense phase when taking corners. The average value of this category is 8.78 compared to 0.3, which shows the average value of category 4 or 5 players on defense. Teams that are in the attack phase and players who participate in the offensive, usually decide on 4 to 5 attackers. This type of attack organization has the highest total value in both competitions 160. The organization and type of defense used by the teams analyzed is mostly combined with a 4.48 mean value. The kick that is most often used when sending the ball towards the goal is a header. The ratio between a header and a kick is 42 to 21 of the total number of balls sent to the goal. Also, we see that mostly the balls that are sent towards the goal, either with the head or the foot, end up outside the goal frame. An average of 1.96 balls ended up outside the goal. The average value of passing the ball after a corner, which means starting a new attack and organizing the game, is 2.3. The results of the applied nonparametric statistics for the differences between the groups (Man - Whitney U test) are shown in Table 3,4,5. This type of data analysis tells us whether there are statistically significant differences in the variables examined.

Table 3: Results of The Mann - Whitney U test effect size

Criterion	Type of competition	Mean Rank	Z	Sig.	r – effect size
Time: 0'-30'	Inter.Champ.Cup	11.50	-.411	.681	-.086
	La Liga	12.65			
Time: 31'-60'	Inter.Champ.Cup	12.65	-.535	.592	-.112
	La Liga	11.15			
Time: 61'-90'	Inter.Champ.Cup	11.58	-.347	.729	-.072
	La Liga	12.55			
Position of corner: Right	Inter.Champ.Cup	12.31	-.252	.801	-.053
	La Liga	11.60			
Position of corner: Left	Inter.Champ.Cup	12.19	-.158	.874	-.033
	La Liga	11.75			
Laterally of corner: Same	Inter.Champ.Cup	14.50	-2.155	.031	-.449
	La Liga	8.75			
Laterally of corner: Opposite	Inter.Champ.Cup	10.58	-1.171	.241	-.244
	La Liga	13.85			
Number of defenders: 4-5	Inter.Champ.Cup	12.12	-.129	.897	-.027
	La Liga	11.85			
Number of defenders: 6 or more	Inter.Champ.Cup	11.77	-.189	.850	-.039
	La Liga	12.30			
Number of attackers: 2-3	Inter.Champ.Cup	11.69	-.261	.794	-.054
	La Liga	12.40			
Number of attackers: 4-5	Inter.Champ.Cup	13.54	-1.249	.212	-.260
	La Liga	10.00			
Number of attackers: 6 or more	Inter.Champ.Cup	10.38	-1.413	.158	-.295
	La Liga	14.10			
Type of marking: Man-to-man	Inter.Champ.Cup	11.46	-.471	.638	-.098
	La Liga	12.70			
Type of marking: Zone	Inter.Champ.Cup	15.08	-2.580	.012	-.538
	La Liga	8.00			
Type of marking: Combined	Inter.Champ.Cup	9.42	-2.093	.036	-.436
	La Liga	15.35			
Type of shot: Head	Inter.Champ.Cup	13.38	-1.155	.248	-.241
	La Liga	10.20			
Type of shot: Leg	Inter.Champ.Cup	12.12	-.099	.921	-.111
	La Liga	11.85			
Final blow: In the goal frame	Inter.Champ.Cup	12.15	-.136	.891	-.021
	La Liga	11.80			
Final blow: Out of the goal frame	Inter.Champ.Cup	13.04	-.857	.392	-.018
	La Liga	10.65			
Delivery of ball	Inter.Champ.Cup	14.35	-1.989	.047	-.415
	La Liga	8.95			

When it comes to the time criterion (Table 3), the results show that there is no statistically significant difference between the International Champions Cup and the Champions League. There is a small difference in the mean rank values (Mean Rank) which shows the value (Sig.) which is in the category 0'-30' (.681), in the category 31'-60' (.592) and in the category of 61'-90' (.729). The variable position of the corners also does not show statistically significant differences between groups. The laterality of the corner is in the

category of the same side of the performance of the same leg, it shows that there are statistically significant differences in the competitions of the International Champions Cup and the Champions League (.031). From the mean rank, it can be seen that in the competition of the International Champions Cup, there were several corners that corresponded to laterality.

Table 3 shows the criterion the number of defensive players does not show differences in the category of 4-5 players (.897), nor in the category of 6 or more defensive players (.850). Also, the number of attackers does not show the differences between the competitions in any of the categories. The type of zone defense was used more in the competition of the International Champions Cup (Mean rank 15.08), while in the Spanish league it was significantly less (Mean rank 8.00). There is a statistically significant difference in the type of defense between the two competitions in the parameters Zone (.012) and Combined (.036). Using the effect size, we can see that the difference in Zone defense is large (.538), while in Combined defense this difference is slightly smaller, has a medium strength of impact (.436). In the type of shoots and the final shoot criterion (Table 3), there is no statistical difference between the two competitions in either category. Passing the ball is a criterion that showed the differences between the two competitions (.047), and the magnitude of the impact is (.415). In the International Champions Cup competition, there were more passes (Mean rank 14.35) compared to the Spanish league (Mean rank 8.95).

4. Discussion

Based on the obtained results, the average number of corners per game is 9,087, which mostly agrees with the results of the research they conducted (Pulling et al., 2013; Ensum et al., 2000; Hill, & Hughes, 2001; Acar et al., 2009). A number of authors agree that less than 30% of goals are scored from interruptions (Casal et al., 2015; Simiyu, 2013; Wright et al., 2011). The analysis of goals from the European Championship in 2012, conducted by Mitrotasios, & Armatas (2014), shows that 27.6% of goals were scored from interruptions, mostly from free kicks and corners. In a study by Casalet et al., (2015) concluded that the time of the game in which the corners are taken, and the number of attackers have a significant connection with scoring a goal. They also concluded that the participation of at least four strikers increases the chances of scoring a goal. The research we conducted shows that in both the International Champions Cup competition and the Spanish league, teams usually attack with 4-5 players at the time of the performance. Maneiro et al., (2019) confirm the fact that the probability of scoring increases when at least 3-4 offensive players in both men and women participate in the attack phase. The results of our research show that corners are most often taken in the last third of the game (61'-90 '). Simiyu, (2013) concludes that more goals are scored in the last 15 minutes, as well as that a larger number of interceptions are performed in this period of the game, which includes shots from the corner. The authors Yiannakos, & Armatas (2006) agree with these results, claiming that there were more goals and interruptions in the second half. The results of the research show that a large number of teams defend with six or

more players with a combined defense. Pulling, (2015) In an analysis of the English Premier League, considering the defensive line-up of players during the tactic, they found that a number of teams were defending "man on man". Wilkinson's research (1996) shows that teams in the defense phase defend with a larger number of players, about six defenders participate in the defense of their goal when taking a corner. Group of authors Casalet et al., (2015) stated that the number of participating attackers and the number of defenders, as well as the type of defense they use in the corner defense phase, absolutely correspond to the results we obtained. The way in which the ball is delivered to the penalty area can be of great importance for scoring a goal or for the intervention of defensive players (Pulling, 2015). This author also concludes that a larger number of balls are sent to the field 6 meters from the goal, which belongs to the opposite laterality or "entry balls".

The competitions we researched also show a larger number of "entry balls". In the criteria of passes (Table 3), we see that the teams that participated in the preparatory competition of the International Champions Cup entered the game more often through combinations than by direct throwing into the space of sixteen meters. The results of the differences between the two competitions in most of the examined variables there is no statistically significant difference, which shows that the results of the teams of different competitions are mostly close in terms of mean values, as in the research of Casalet et al., (2015). Most of the corners that were included in our research ended up as a pass or a shot outside the box. The variable passing and creating a new attack showed statistically significant differences between the two competitions (.047). There were more passes in the International Champions Cup than in the Spanish "La Liga". These results can be explained by the fact that the competition is the International Champions Cup of a competitive nature, but in the preparation period, where the coaches combine a lot of both the players themselves and the way of playing. In a study by Maneiro et al., (2019) in which they examined the differences between the 2014 World Cup for men and the 2015 World Cup for women, they concluded that 72% of balls thrown from the corner did not end with a shot on goal but with the intervention of defensive players or a pass, while 28% of balls ended by a shoot into the goal frame or a shoot outside the goal frame. The authors concluded that there was no statistically significant difference between men and women in the examined variables because they both showed similar values. Corner laterality variables on the same side, zone defense and combined defense, as well as passes, show that there is a difference in competitions.

5. Conclusion

In this research, some of the basic data on how corner kicks are organized were obtained. This research confirms certain criteria that can help in the tactical preparation of individuals and teams. Most corners take place in the last third of the time. The number of attackers participating in the offensive part is mostly 4-5 attackers. Combined defense is mostly used with 6 or more defensive players. The so-called "Entrance balls" (opposite laterality) when throwing from the corner. Almost every fourth corner is used to create a

new attack and pass. Corners are not the deciding factor in the game, but they can be very important for the final result of the match. The differences between the two groups, competitions, are generally not statistically significant. These results show that the teams do not differ much in the way they are set up in the defense phase and the attack phase, but that there are certain common criteria. In some further research, a larger number of matches should be considered and several different competitions should be taken for analysis. A large number of variables that can affect the realization and efficiency of the corner should be analyzed, and the importance of the competition itself and the period in which the competition takes place should be taken into account. This approach will certainly lead to more relevant data. The positive value of this type of research and analysis from the population is the tactics that show clear guidelines when it comes to preparing a football match and a team that wants to win. From the aspect of the theoretical value of this analysis, the advantage is in defining the current tactical requirements and predicting possible directions of development in interruptions or corners.

Conflict of interest

Authors declare no conflict of interest.

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