

Analysis of corner kicks in FIFA 2018 World Cup

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ABSTRACT

The aim of this study is to analyse the corner kicks taken in the matches played in the FIFA 2018 World Cup. A total of 606 corner kicks that were used in 64 matches in the competitions were analysed. The data were analysed in terms of the parameters of the direction in which the corner kick is taken (right, left), the time interval in which the corner kick is taken (1-15, 16-30, 31-45, 46-60, 61-75, 76-90), the region where the ball falls in the penalty area (1st, 2nd, 3rd, 4th, 5th, 6th), the player whom the ball meets in the penalty area (goalkeeper, defender, striker), the body part which contacts the ball (head, foot, hand), attack result (goal, out, corner kick, clearing the ball, goalkeeping) and the body part with which the goals are scored (head, foot). The results indicated that in FIFA 2018 World Cup competitions, the right and left corner kicks were almost evenly distributed, but unlike previous matches, the corner kicks were taken from the left between the 16th and the 30th minutes, and from the right between the 61st and the 75th minutes. Contrary to the previous World Cups, it was found that fewer corner kicks were taken by spreading the game to both wings, the time interval changed in the search for goals from corner kicks, the target area was used predominantly, and the attacking players stood out compared to the defence players, and an equal number of goals were scored with the head and foot.

Keywords: Football; Match analysis; Set play.

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INTRODUCTION

Football is the world's favourite sport played by more than 240 million players in 1.4 million teams registered in 300,000 sports clubs. Every four years, billions of people in more than 200 countries watch the FIFA World Cup, which is the biggest tournament in football and lasts about a month. The World Cup is the biggest achievement in football, and thus offers the opportunity to be examined for the best national teams in the world and their players (Acar et al., 2009).

Football competitions are the activities where trainers and players practice their techniques and tactics (Njororai, 2013). Today, success in football has become more important than ever. With the help of technological developments, the studies carried out to achieve sportive success have taken football even further (İmamoğlu et al., 2015). In addition to anthropometric, psychological and physiological research, the analysis of football players' performance on the pitch has become popular (Acar et al., 2009).

One of the most important components of coaching is the match analysis (Allman, 2002). Match analysis is the objective recording and analysis of behavioural events that occur during the competition. Carling (et al., 2009) asserts that "*the main purpose of the match analysis is to reveal the strengths and weaknesses of our own team and the opposing team*". Performance indicators uncovered by competition analysis and done with the correct data according to certain criteria may also contribute to the trainers' correct decision making processes (Göral & Saygın, 2012).

When we look at the balls thrown to the goal in football, the most dangerous shoots, apart from the ones taken from the front, are the corner kicks. Considering the number of players in the penalty area during the corner kick or even the goalkeepers attacking in the last minute corner kicks, it is easy to understand how important the corner kick is. Similarly, while waiting for the support of the opponent's team-mate in the opponent's field, attacking player with the ball goes to the corner to hide the ball, or when he lands in the corner due to position, he wants to win a corner kick by hitting the ball against the opposing defender, and all of which prove the importance of corner kick (Zileli et al., 2017).

The ball area is important to create goal-scoring opportunities. However, further research is necessary to prove this hypothesis. To turn this chance by the forward players into a goal depends on their abilities (skills) (Strafford et al., 2019). On the other hand, in the studies conducted with logistic regression analysis, creating tactics and short throws based on the intervention of 3-4 players is suggested as the best way to reach the target (Arda et al., 2014; Casal et al., 2015). Successful teams use the line with the front of the goal or goalpost (a predominantly effective area) (Strafford et al., 2019; Pulling, 2015; Schmicker, 2013). Corner kicks are often a determining factor in a match between two teams of similar rank. More successful results are obtained when corner players are dynamic rather than static (Casal et al., 2015).

If a defensive team cannot manage a corner kick sufficiently, the attacking team will be more effective in terms of the targeted shots. It has been postulated that if the attacking team is more dominant in corner kicks, they develop better tactics than defence. In 2006 FIFA World Cup, mixed marking (96.5%) was used more than field marking (3.5%). The teams found more goals in the field branding system (6%) than the mixed marking system (3.4%) (Baranda & Riquelme, 2012). This may be attributed to the confusion of defensive players when the ball falls between two areas, which also may lead to confusion about who is responsible for defending the ball. In addition, the field marking system may cause defenders to remain more immobile than offensive players and emphasizes that it is difficult for defenders to compete against an attacking player who runs to possess the ball (Hughes, 1996; Pulling et al., 2018).

For this reason, some researchers have analysed corner kicks in detail so as to collect more data to plan better training. Researchers have examined the frequency of corner kicks (Taylor et al., 2004), style of corner kicks (Carling et al., 2005; Page and Robins, 2012), score field (Poon, Douglas, & Hopkins, 2012; Sainz de Baranda & Lopez Riquelme, 2012) their defensive tactics (Pulling, Robins, & Rixon, 2013; Kubayi & Larkin., 2019), and different success models (Maneiro et al., 2019). The current study approaches the issue from a different perspective and the difference of the present study from the others is that it focuses on the first contact with the corner kicks taken. The data obtained are about the area of the first contact in the penalty area, and the player who touches the ball first. Based on this data, the purpose of the study is to analyse the corner kicks taken in the matches played in the FIFA 2018 World Cup.

MATERIALS AND METHODS

Design of the study

This research used the general screening model and the focus of investigation was 606 corner kicks taken in 64 matches played in the FIFA 2018 World Cup. The data were analysed regarding the following parameters; the direction in which the corner kick is taken (right, left), the time interval in which the corner kick is taken (1-15.', 16-30.', 31-45.', 46-60.', 61-75.', 76-90+'.), the region where the ball falls in the penalty area (1st, 2nd, 3rd, 4th, 5th, 6th.), the player who meets the ball in the penalty area (goalkeeper, defender, striker), the body part which contacts the ball (head, foot, hand), the result of the attack (goal, out, corner kick, clearing the ball, goalkeeping) and the body part with which the goals are scored (head, foot). The markings made in the second period of the match in the penalty area were made in the form of a projection of the penalty area in the first period.

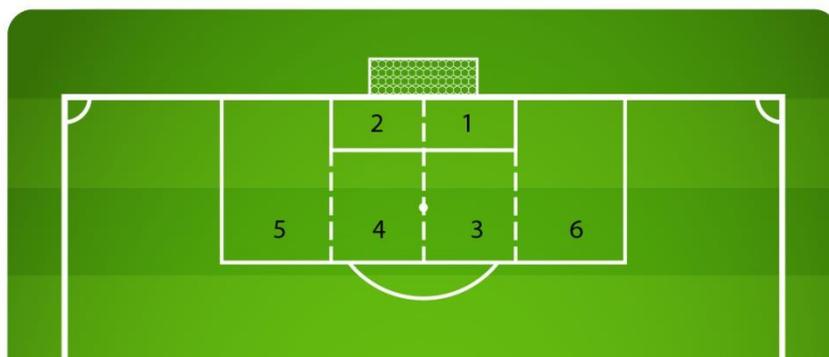


Figure 1. Separation of the penalty area by region.

The penalty area consists of six regions as seen in the above figure.

Data collection

The data used in this research were obtained by watching the matches played in the FIFA 2018 World Cup (64 games) live or from the record by the same researcher with a hand tally. After the corner kick was taken, the first contact with the ball was evaluated. This study was approved by the Ethics Committee of Bilecik Şeyh Edebali University (2018 / 43-4).

Statistical analysis

SPSS 21.0 package program was used for the statistical analysis of the data. In the current study, obtained frequency and percentage values of the data are presented.

RESULTS

The general findings obtained from the corner kicks are presented in Table 1, the findings obtained from the right and left corner kick cases are presented in Table 2, the distribution of the goals achieved by the body part (head and foot) is presented in Table 3.

Table 1. General use cases of corner kicks.

Variables		n	f	%
Corner	Right Corner	64	301	49.7
	Left Corner	64	305	50.3
Time interval	1-15. min.	64	73	12.0
	16-30. min.	64	107	17.7
	31-45. min.	64	85	14.0
	46-60. min.	64	100	16.5
	61-75. min.	64	126	20.8
	76-90+. min.	64	115	19.0
	Region	The 1st	64	68
The 2nd		64	125	20.6
The 3rd		64	144	23.8
The 4th		64	141	23.3
The 5th		64	70	11.6
The 6th		64	58	9.6
Player having the ball	Goalkeeper	64	145	23.9
	Defensive Player	64	170	28.1
	Attacking Player	64	291	48.0
The body part that contacts the ball	Head	64	207	34.2
	Foot	64	278	45.9
	Hand	64	121	20.0
Attack result	Goal	64	22	3.6
	Out	64	181	29.9
	Corner Kick	64	10	1.7
	Clearing the ball	64	259	42.7
	Goal Keeping	64	134	22.1

When Table 1 is analysed, in terms of the corner parameter, 301 (49.7%) kicks were taken from the right and 305 (50.3%) were taken from the left; in terms of the time interval, between the 1st and 15th minutes 73 (12%), between the 16th and 30th minutes 107 (17.7%), between the 31st and 45th minutes 85 (14.0%), between the 46th and 60th minutes 100 (16.5%), between the 61st and 75th minutes 126 (20.8%) and between the 76th and 90th + minutes 115 (19.0%) corner kicks were taken; in terms of the region, 68 (11.2%) to region 1, 125 (20.6%) to region 2, 144 (23.8%) to region 3, 141 (23.3%) to region 4, 70 (11.6%) to region 5, and 58 (9.6%) were sent to region 6; in terms of the player meeting the ball, the goalkeeper got 145 (23.9%), the defender got 170 (28.1%), and the attacker got 291 (48.0%) of the corner kicks; in terms of the body part to touch the ball, 207 (34.2%) of them were dealt with the head, 278 (45.9%) of them with the foot, and 121 (20.0%) of them with the hand; and finally in terms of attack results, 22 goals (3.6%), 181 outs (29.9%), 10 corner kicks (1.7%), 259 clearing out (42.7%), and 134 goalkeeping (22.1%) were achieved.

Table 2. Use of corner kicks from the right and left corners.

Variables	Corner kick taken from the right corner (f)	%	Corner kick taken from the left corner (f)	%
Time Interval	1-15. min.	30	43	14.1
	16-30. min.	36	71	23.3
	31-45. min.	63	22	7.2
	46-60. min.	45	55	18.0
	61-75. min.	95	31	10.2
	76-90+. min.	32	83	27.2
Region	The 1st	15	53	17.4
	The 2nd	42	83	27.2
	The 3rd	64	80	26.2
	The 4th	102	39	12.8
	The 5th	59	11	3.6
	The 6th	19	39	12.8
Player having the ball	Goalkeeper	58	87	28.5
	Defensive Player	63	107	35.1
	Attacking Player	180	111	36.4
The body part that contacts the ball	Head	131	76	24.9
	Foot	119	159	52.1
	Hand	51	70	23.0
Attack Result	Goal	16	6	2.0
	Out	112	69	22.6
	Corner Kick	4	6	2.0
	Clearing the ball	96	163	53.4
	Goal Keeping	73	61	20.0

When Table 2 is examined, in terms of the time intervals, 30 (10%) corner kicks were taken from the right and 43 (14.1%) were taken from the left between the 1st and 15th minutes, 36 (12%) of them were taken from the right and 71 (23.3%) kicks were taken from the left between the 16th and 30th minutes, 63 (23.3%) of them were taken from the right and 22 (7.2%) were taken from the left between the 31st and 45th minutes, 45 (15%) corner kicks were taken from the right and 55 (18%) were taken from the left between the 46th and 60th minutes, 95 (31.6%) of them were from the right and 31 (10.2%) were from the left between the 61st and 75th minutes, and finally 32 (10.2%) of them were taken from the right and 83 (27.2%) kicks were taken from the left between the 76th and 90+ minutes. Regarding the region, 15 (5%) corner kicks from the right and 53 (17.4%) from the left were sent to the region 1; 42 (14%) from the right and 83 (27.2%) from the left were sent to the region 2; 64 (21.3%) from the right and 80 (26.2%) from the left were sent to the region 3; 102 (33.9%) from the right and 39 (12.8%) from the left were sent to the region 4; 59 (19.6%) from the right and 11 (3.6%) from the left were sent to the region 5; and 19 (6.3%) from the right and 39 (12.8%) from the left were sent to the region 6. For the player who meets the ball, the goalkeeper got 58 (19.3%) from the right, 87 (28.5%) from the left, defensive player got 63 (20.9%) from the right, and 107 (35.1%) from the left and the attacking player got 180 (59.8%) from the right, and 111 (36.4%) from the left. When examined in terms of the body part touching the ball, it was headed 131 (43.5%) times from the right and 76 (24.9%) times from

the left, controlled by foot 119 (39.5%) times from the right and 159 (52.1%) times from the left, and handled 51 (16.9%) times from the right and 70 (23%) times from the left. Regarding the attack results, 16 goals from the right (5.3%) and 6 goals from the left (2%), 112 outs from the right (37.2%), 69 outs from the left (22.6%), 4 corner kicks from the right (1.3%), and 6 corner kicks from the left (2%), 96 clearings (31.9%) from the right, 163 (53.4%) from the left, 73 goalkeeping from the right (24.3%), 61 from the left (20%) were achieved during the games under investigation.

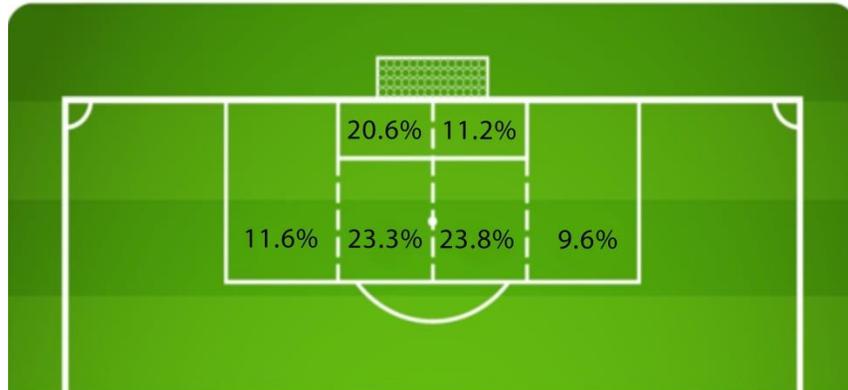


Figure 2. Distribution of the corner kicks taken from the right and left to the penalty area.

It is observed that the teams use the 1st Region 11.2%, the 2nd Region 20.6%, the 3rd Region 23.8%, the 4th Region 23.3%, the 5th Region 11.6%, and the 6th Region 9.6% of the time.

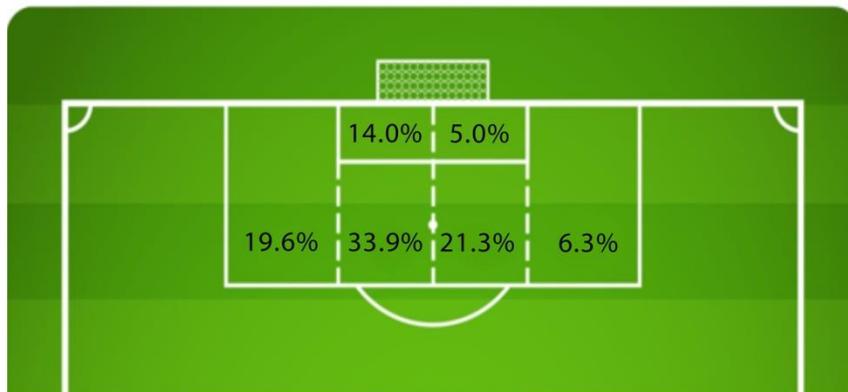


Figure 3. Distribution of the corner kicks taken from the right to the penalty area.

In the corner kicks taken from the right, the 1st Region was observed to be used 5%, the 2nd Region was observed to be used 14%, the 3rd Region was observed to be used 21.3%, the 4th Region was observed to be used 33.9%, the 5th Region was observed to be used 19.6%, and the 6th Region was observed to be used 6.3% by the teams.

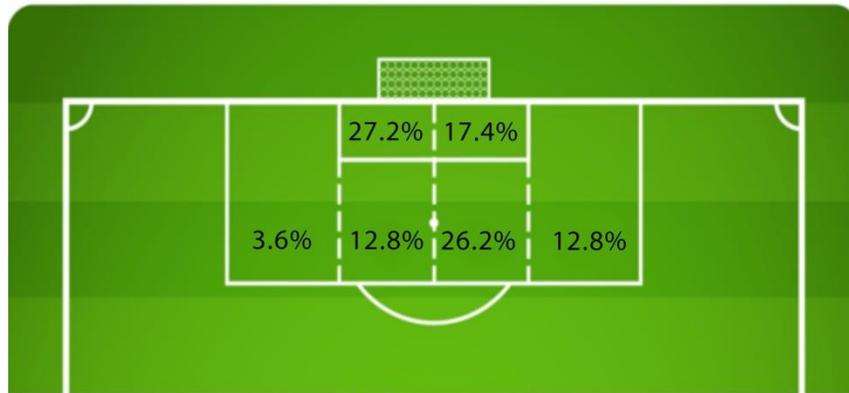


Figure 4. Distribution of the corner kicks taken from the left to the penalty area.

As seen in Figure 4, in the corner kicks taken from the left, the teams use the 1st Region 17.4%, the 2nd Region 27.2%, the 3rd Region 26.2%, the 4th Region 12.8%, the 5th Region 3.6% and the 6th Region 12.8% of the time.

Table 3. Distribution of the goals contacting the body (head and foot) obtained from the corner kicks taken to the penalty area.

Variables	Head (goal)	Foot (goal)	
		Right	Left
1-15. min.	2	1	-
16-30. min.	1	-	1
31-45. min.	2	1	4
46-60. min.	5	1	-
61-75. min.	-	1	1
76-90+. min.	1	1	-
Totally	11	5	6

Table 3 displays that between minutes 1 and 15, 2 goals with the head and 1 goal with the right foot; between minutes 16 and 30, one goal with the head and 1 goal with the left foot; between minutes 31 and 45, 2 goals with the head, 1 goal with the right foot and 4 goals with the left foot; between minutes 46 and 60, 5 goals with the head and 1 goal with the right foot; between minutes 61 and 75, 1 goal with the right foot and 1 goal with the left foot; and between minutes 76 and 90+, 1 goal with the head and 1 goal with the right foot were scored.

DISCUSSION AND CONCLUSION

The aim of the present study was to analyse the corner kicks taken in the matches played in the FIFA 2018 World Cup. The data obtained were analysed in terms of the parameters of the direction in which the corner kick is taken (right, left), the time interval in which the corner kick is taken (1-15', 16-30', 31-45', 46-60', 61-75', 76-90'+), the region where the ball falls in the penalty area (the 1st, 2nd, 3rd, 4th, 5th, 6th.), the player who meets the ball in the penalty area (goalkeeper, defender, striker), the body part which contacts the ball (head, foot, hand), attack result (goal, out, corner kick, clearing the ball, goalkeeping) and the body part with which the goals are scored (head, foot).

The primary finding of the study is the direction of the corner kicks. A total of 606 corner kicks, 301 (49.7%) from the right and 305 (50.3%) from the left, were taken during the games (Table 1). It is seen that the game is distributed equally in both directions according to the percentiles. An average of 9.47 corner kicks were taken in 64 competitions. Based on this finding of the study, the rate of corner kicks taken is lower than the previous World Cups. In the matches played in the previous World Cups, an average of 9.58 to 13 corner kicks were observed per match (13 in the 1990 World Cup, 10.4 in the 1994 World Cup, 9.58 in the 1998 World Cup, 9.72 in the 2002 World Cup, 10.2 in the 2006 World Cup, 9.79 in the 2010 World Cup) (Casal et al., 2015). In another study, similar to the findings of the present study, the home team and away teams in Turkey Super Lig are reported not to give weight to one wing during the game; instead they spread evenly across both wings (Zileli et al., 2017).

When the corner kicks were evaluated in terms of the time intervals, based on the percentiles, more corner kicks were taken in the middle time interval of both halves of the game [107 (17.7%) between the 16th and 30th minutes; 126 (20.8%) between the 61st and 75th minutes.] (Table 1). These corner kicks were often taken from the left [71 (23.3%)] between the 16th and 30th minutes; from the right [95 (31.6%)] between the 61st and 75th minutes (Table 2). Teams tried to find a goal from the left side and then from the right side by taking more corner kicks sometime after both halves started. In addition, in the second half, more corner kicks were taken than the first half [341 (56.3%) and 265 (43.7%) respectively] (Table 2). Literature shows that the corner kicks were predominantly taken in the first and last 30 minutes of the matches in the previous World Cups (Casal et al., 2015; Acar et al., 2009; Armatas et al., 2007; Jinsan et al., 1993). The purpose here was attributed to trying to score goals without understanding the corner kick tactic of the opponent team in the first half, and in the second half, to the determining effect of the corner kicks on the outcome of the match. They even used the goalkeeper in the attack towards the last minutes. Similar to the previous World Cup matches, when Strafford et al. (2019) examined the first six and last six teams' corner kick strategies in 2015/2016 English Premier League, they reported that the teams took more corner kicks between the 31st and 45th minutes (16.6%) and between the 76th and 90th minutes (18.5%) These results reveal that in the FIFA 2018 World Cup, the teams changed their tactics in corner kicks in terms of timing.

When the corner kicks were evaluated in terms of the region, it was determined that the third and fourth regions were used more [144 (23.8%), 141 (23.3%), respectively] (Table 1). These corner kicks were often taken on the third region from the left [80 (26.2%)] (Figure 3), and the fourth region from the right [102 (33.9%)] (Figure 4) (Table 2). Contrary to findings of the present study, the corner kicks in the FIFA 2006 World Cup were taken 36.6% to the near post (Baranda and Riquelme., 2012) and in the FIFA 2010 World Cup, 61.8% of them were taken to the near post (Casal et al., 2015). Taylor et al., (2005) studied 20 English Premier League matches with the hand notation technique during the match, and they reported that the most critical area where the first contact with the ball in the penalty area occurs was between the goal area and the penalty area (41%) (Taylor et al., 2005). Similarly, Zileli et al. (2017) found that away teams use the 3rd region more than home teams (26.1%). In another study, Zileli (2006) reported that away teams used the 2nd region (8.84%) and the 3rd region (62.6%) in Super League matches, while there was no difference in other regions (Zileli, 2006). Söyler (2013) stated that in order to score goals, 1st League teams used the goal area, while the Super League teams often used the 5th and 6th Region (Söyler, 2013). In all matches the "goal area" and the "target area" where the shooting angle is the greatest by the goal were used more intensively by the teams.

When we evaluate the corner kicks in terms of the player who meets the ball, the attacking players meet with the ball more than the goalkeeper and the defensive players [291 (48.0%)] (Table 1), in terms of the direction, the balls were contacted more from the right rather than the left side [180 (59.8%)] (Table 2). Zileli (2006) in

his study where he examined the corner kicks in the Super League found that the goalkeeper and the defence players of the away team and the attacking players of the home team met the ball more often in the penalty area. Zileli et al. (2017) determined that the home team and the away teams were similar in terms of the goalkeeper, defensive and attacking players' rate of meeting the ball in the penalty area when the corner kicks taken in the matches played in the Super League were considered. On the other hand, Grant and Williams (1998) stated that the goalkeepers in the English Premier League met with the ball in the penalty area at a higher rate than the other players. It can be stated that in league matches, the goalkeepers are more successful, whereas in the World Cup, attacking players are more successful and that they meet balls more, especially on the right side.

When the corner kicks were evaluated in terms of the body part that touches the ball, 207 (34.2%) head contacts [131(43.5%) from the right, 76 (24.9%) from the left], 278 (45.9%) foot contacts [119 (39.5%) from the right, 159 (52.1%) from the left], and 121 (20%) hand contacts [51 (16.9%) from the right and 70 (23%) from the left] were determined (Table 1 and 2). After the corner kick was taken, more contact with foot [278 (45.9%)] was observed than with the head (Table 1). It was seen that this contact is more in corner kicks coming from the left [159 (52.1%)] (Table 2). However, the goals were mostly scored between the 31st and 45th minutes (2 goals with the head, 5 goals with the foot) and between the 46th and 60th minutes (5 goals with the head, 1 goal with foot). The number of goals scored with head and foot is equal (Table 3). The corner kicks were controlled by head 64.6% in the FIFA 2010 World Cup, 65.1% in UEFA Euro 2012, and 77.6% in the UEFA 2010/11 Champions League. From these contacts, 38.6% of the goals were scored with head and 36% were scored with a kick (Casal et al., 2015). In the corner kicks taken in the FIFA 2006 World Cup, 64.9% of the goals were recorded using the head and 33.1% using the foot (Baranda and Riquelme, 2012). Contrary to the literature, in the 2018 World Cup, it was tried to reach the result by using the head and foot equally. As in the time interval data, the teams changed tactics also in the first contact with the ball.

When we evaluated the corner kicks in terms of the attack results, 22 goals (3.6%) [16 from the right (5.3%), 6 from the left (2%)] (Tables 1 and 2) were determined. With 22 goals (3.6%), the goal ratio appears to be high compared to previous World Cup rates [1994 FIFA World Cup 1.25%, 1998 FIFA World Cup 2.28%, 2002 FIFA World Cup 2.47%, 2006 FIFA World Cup 2.6%, 2010 FIFA World Cup 2.3% (Casal et al., 2015)] (Table 1). It should be noted that the goals scored from the corner kicks have a big effect on the result and 76% of the goals obtained from the corner kicks are related to the victory or draw of the team scoring the goal (Casal et al., 2015).

As a result, the corner kicks were found to be taken from the right and the left in the FIFA 2018 World Cup competitions are almost evenly distributed, but contrary to the previous competitions, they were taken from the left between the 16th and 30th minutes and from the right between the 61st and 75th minutes. As in the League matches, we see that in the World Cup matches the target area, which is the most likely area to find a goal, and which faces the goal with the widest angle, or in other words the front of the six passes, is used more frequently in the corner kicks to Region 3 from the left and to Region 4 from the right. It was determined that the attacking players within the penalty area met the ball and scored a higher rate in the corner kicks taken from the right side. Contrary to previous World Cups, it was observed that fewer corner kicks were taken by spreading the game to both wings, the time interval changed in the search for goals from corner kicks, the target area was used predominantly, the attacking players came to the fore more compared to the defensive players, and an equal number of goals were scored with the head and foot. It should always be considered that the statistics do not explain the result but give information about the process. The important thing is that the technical team interprets the data correctly and includes it in the process.

AUTHOR CONTRIBUTIONS

Raif Zileli: research design, paper writing, paper revision and corresponding author. Mehmet Söyler: research design, data collection, paper writing.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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