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Is a Goal Scored Really Valuable for a Team in Soccer? The effect of Scoreline on Team Success in the UEFA Champions League

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Abstract

A total of 306 goals scored in the UEFA Champions League group matches in the 2017-2018 season were analyzed. The goals scored in matches were analyzed using the video analysis program (e-analyze pro-soccer, e-sports) in line with the determined criteria. In order to reveal the difference between the distributions of the goals according to the criteria, Chi-square (X_2) analysis was employed. Regarding the criterion of the effect of the scored goal on the instant score. The distribution of winning the match upon scoring the first goal of the match for the qualifying teams was found to be significantly higher compared to the non-qualifying teams. In top-ranking football matches, the winning rate of the the teams that score a goal and get ahead in the game or double the score difference are quite high. The most significant finding that supports this expected situation is that the winning rate of the teams that score the first goal of the match is rather high. The results obtained from this study are believed to be useful for especially coaches and players that participate in similar tournaments.

Introduction:

In a football match, an instant match score can be considered a measure of performance change, and therefore can affect the efforts shown by a player. A significant increase or decrease in the performance of the player can be seen according to the current score of the match (ahead-draw-behind) (Armatas & Yiannakos, 2010; Gomez *et al.,* 2013; O'Donoghue & Tenga, 2001).

In the studies conducted, it was stated that the instant score of the match led to changes in the performance of the players, and that, say, in case of a draw, players showed extremely higher effort than the case of ahead and behind (Clark & O'Donoghue, 2011; O'Donoghue & Tenga, 2001; Shaw & O'Donoghue, 2004).

It is also a matter of curiosity whether the instant score affects the rest of the match and what the final result of the match will be. Consequently, detailed analyses of the matches played in top-ranking football tournaments and leagues can help form significant judgments.

In the study, it was aimed to examine the goals scored in the UEFA Champions League according to scoreline and success criteria.

Materials and Methods:

In this study, a total of 306 goals scored in the UEFA Champions League group matches in the 2017-2018 season. Video recordings of the goals scored in matches were analyzed using the competition analysis program (e-analyze, pro-soccer, e-sports). For this research, we obtained the permission and ethics committee approval from the Faculty of Sports Sciences.

Technical and tactical criteria used in the analyses were as follows:

◎ Success (qualified - disqualified).
◎ The effect on score line (win-draw-lose).
◎ The effect on instant score (ahead-draw-behind-ahead by two goals).
◎ Being the first goal of the match (first goal - no first goal).
◎ The period of the first goal scored (1st half - 2nd half).
◎ The time of the first goal (15-minute periods).

For the presentation of the data analysis results, frequency and percentage distributions of the goals scored were made according to all criteria, and differences between distributions were presented in tables and graphs by performing non-parametric Chi-square (X_2) analysis. All analyses were made using SPSS 22.0 package program. Chi-square distribution difference analysis evaluated the level of meaningfulness at .01 and .05.

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Results:

32 teams participated in the group stage of the Champions League and took part in 6 competitions in each group according to the double round-robin format in 8 groups with four teams and a total of 96 matches in the group stage. The eight group-winners and eight runners-up of the group stage qualify for the round of 16. A total of 306 goals were scored in the group stage. Four matches ended in a draw with no goals, the goals scored in the other 92 matches were evaluated. In the matches, the winning teams scored 223 goals (72.9%), 42 goals (13.7%) were scored in the matches that ended in a draw, and the losing teams scored 41 goals (13.4%). The number of goals scored by the winning teams was significantly higher than those of matches ending in a draw and the losing teams (p<0.01) (Fig.-1). A significant difference was determined between the Chi-square distribution analyses of the goals scored by the qualifying teams Vs disqualifying teams at the end of the group matches (218 goals (71.2%) ; 88 goals (28.8%); X2= 55.23; p <.01).

The distribution of the goals scored by the qualifying teams (185 goals; 60.46%) and the goals scored in matches ending with a win was found to be significantly higher than that of the disqualifying teams (38 goals; 12.42%) (X2= 96.90; p <.01). The distribution of the goals scored by the disqualifying teams (33 goals; 10.78%) and the goals scored in matches ending with a loss was significantly higher than that of the qualifying teams (8 goals; 2.61%) (X2= 15.24; p <.01). As per the distribution of goals scored in the matches ending with a draw, no difference was found between qualifying and disqualifying teams (p >.05) (Fig.-1).

As per the criterion of the effect of the scored goal on the instant score, it was found that the qualifying teams scored significantly more leading goals (respectively: 78 goals (25.49%); 37 goals (12.9%), X2=14.62; p<.01) compared to disqualifying teams, and scored more goals that got them ahead by two goals (respectively: 109 goals (32.62%); 20 goals (6.54%); X2= 61.40; p<.01). The distribution of the goals that brought the instant score to a draw and the goals scored while losing, no difference was detected between the qualifying and disqualifying teams (p>.05) (Fig.-2).

92 goals scored are also the first goals scored in the matches. The rate of scoring the first goal of the qualifying teams (59 goals; 64.1%) was found to be higher than that of the disqualifying teams (33 goals; 35.9%) (X2 = 7.35; p <.01).

At the same time, the distribution of the first goals scored by the qualifying teams that made them win the match (53 goals; 57.61%) was found to be significantly higher than that of the disqualifying teams (11 goals; 11.96%) (X2= 27.56; p <.01). The disqualifying teams scored the first goal in 11 matches, but lost the match. This situation is observed only once in the qualifying teams. Regarding the distribution of scoring the first goal in the matches ending with a draw criterion, no difference was found between qualifying and disqualifying teams (p >.05) (Fig.-3).
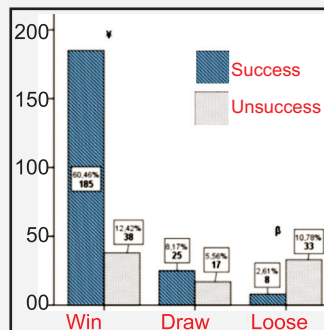

Figure-1. Distribution of the goals scored according to the criteria of quali-fying and match result
¥ The distribution of the goals scored by the qualifying teams in the matches resulting with a win is significantly higher than that of the disqualifying teams (X2= 96.90; p<.01).
β The distribution of the goals scored by the disqualifying teams in the matches they lost is significantly higher than that of the qualifying teams (X2=15.24; p<.01).
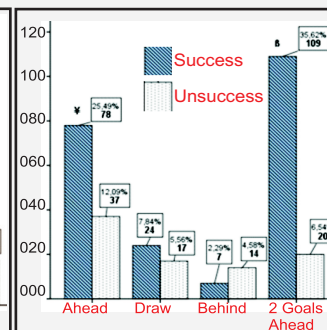

Figure-2: Distribution of the goals scored according to the criteria of instant scoreline & match result
¥ As per the criterion of the goal scored being the goal that put the team ahead, the qualifying teams are significantly ahead compared to the disqualifying teams (X2=14.62; p<.01).
β As per the criterion of the goal scored being the goal that put the team ahead by 2 goals, the qualifying teams are significantly superior to the disqualifying teams (X2= 61.40; p<.01).
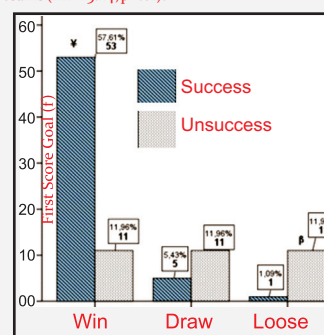

Figure-3: Distribution as per the criteria of being the first goal scored in the match & the match result for the qualifying teams.
¥ The rate of the qualifying teams winning the match where they scored the first goal is significantly higher compared to the disqualifying teams (X2= 27.56; p<.01).
β The rate of the disqualifying teams losing the match where they scored the first goal is significantly higher than that of the qualifying teams (X2= 8.33; p<.01).
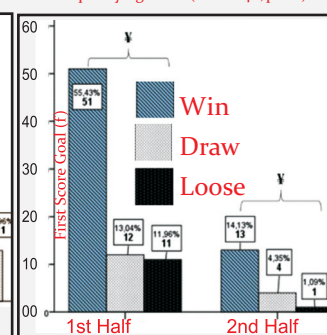

Figure-4: Distribution of the first goal scored in the match as per the match result and the halves of the match
¥ The number of the first goals scored in the first half of the match is significantly higher than that of the goals scored in the second half (X2= 34.09; p<.01)..
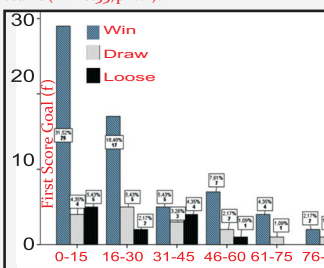

Figure-5: The graph for the distribution of the first goal scored in the match according to the match result and the quarter period of the match

Discussion:

In the study, we examined the effect of the goals scored by the teams participating in the European Champions League, where elite football is played, at the group match stages on team success in terms of changing the scoreline during the match and the importance of goals from the perspective of time.

In the matches, 146 goals (47.7%) were scored in the first half, and 160 goals (52.3) were scored in the second half. The rate of the goals scored by the qualifying teams in the

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second half of the matches (50.9%) was higher compared to the rate in the first half (49.1%), while the disqualifying teams scored goals at a higher rate in the first half of the matches (73.3%) compared to the rate in the second half (69.4%). In the study in which he analyzed the goals scored at the 2018 World Cup, Kubayi (2020) found that goals were mostly scored in the second half of the matches (63%) and the third quarter (45-60 min) (28 %). Michailidis (2014) reported that the goals in the 2014 World Cup were scored in the second half of the matches with a rate of 57%. Pratas *et al.,* (2018), in their study where they analyzed the goals scored in the matches in the Portuguese Premier League, reported that the number of goals scored in the second half of the matches (58%) and in the last five minutes of the matches was higher. This situation could be explained by such factors as an increase in exhaustion levels of the players and a decrease in their concentration on defense (Carling *et al.,* 2005), and it could also stem from the players' taking certain tactical risks in line with the instant score of the match.

In the study, it was observed that the qualifying teams in the groups scored more goals (71.2%), scored more goals in the matches they won (60.46%), scored more goals that got them ahead (25.5%) and scored more goals that put them ahead by two goals (35.6%). Lago-Peñas & Gómez-López (2014) analyzed top-level clubs according to their level and team behaviors according to the instant score during the match and reported that ball possession rates of top-level and mid-level teams were higher in all three scores in comparison to their competitors. They reported that the ball possession rates of mid-low and low-level teams were lower than high-level clubs and that their targeting the rival's goal and shooting at goal when they were one goal ahead were quite low. Besides, they reported that when they got one goal ahead, there was a significant decrease in the rate of all teams' ball possession, actions of entering the third zone, and shooting at goal in comparison to the case of a draw and 1 goal behind. In their study, Pratas *et al.,* (2018) reported the frequency in the rate of home teams' getting 2 goals ahead (58%) and the equalizer goals in away teams (56%). As a result, they found that the frequency of scoring the second goal after scoring the first goal in the second half of the match was 3 times higher compared to the first half. Successful teams win the matches as a result of their applying the tactical elements of football better and having their rivals accept their superiority. Since the important point here is to score a goal, it is seen that football teams adopt the strategy of continuing the match ahead by scoring a goal before their rivals and that they try to establish their superiority by two goals. Supporting this information, Lago-Penas *et al.,* (2010), in their study in which they analyzed certain tactical criteria of the matches played in the Spanish League, reported that the winning teams had a higher number of shooting and shooting at goal

compared to the teams that lose and finish in a draw and that they had a higher shooting efficiency. Similarly, in the study where he analyzed the 2002 World Cup matches, Shaw & O'Donoghue (2004) reported that finalist teams had higher shooting efficiency than unsuccessful teams. Delgado *et al.,* (2013), in the study in which they analyzed the 2010 World Cup matches, reported that the successful teams in the group stage showed higher attack activities and shot at goal more. Also, studies have been conducted on the effect of the first goal scored on the success of teams (win-lose-draw), their match performance, and tactical criteria (possession, shooting, pass, etc.) (Nevo & Ritov, 2013; O'Donoghue & Tenga, 2001; Redwood-Brown *et al.,* 2012). In the present study, another important finding was that the qualifying teams scored the first goal at a higher rate (64.1%) and that after scoring the first goal, they won more matches (57.6%). The first goals scored that made the teams win the match were scored in the first half of the matches (55.4%), and especially in the first two-quarters of the match (50.0%). We also see the results of our study regarding the high rate of the effect of the first goal on success in the study conducted by Delgado *et al.,* (2013), who reported that the teams that scored the first goal won 66.7% of the matches, finished in a draw in 29.2% of the matches, and lost 4.2% of the matches. Besides, they reported that the teams that scored the first goal in the following qualifying stages had a higher rate of winning the match (81.3%). In his analysis of the goals scored in the Euro 2012 matches, Leite (2013) reported that the teams scoring the first goal had a higher rate of winning the match (22 matches; 70.97%). It was seen that especially in international championships (Armatas & Yiannakos, 2009; Delgado *et al.,* 2013) and some national leagues, the probability of the team scoring the first goal to win the match was quite high (>70%).

Conclusion:

The study aimed to examine the effect of the characteristics of the goals scored in the matches of the Champions League where top-level teams participate in establishing superiority over the rival team and winning the match. Scoring the goal that gets the team 1 and 2 goals ahead played an important role in winning that match as well as in qualifying for the next tour. It was revealed that the teams that scored the first goal of the match won that match and gained a considerable advantage for qualifying for the next group stage. As for the time evaluation of the goals scored, qualifying teams and winning teams score the match-winner goal sooner. Especially the goals scored in the first 30-minute period of the match played an important role in winning the match and qualifying for the next group stage.

Practical implications:

This study will provide valuable ideas to coaches and athletes while building their match strategies during training. They will

become aware of the effect of gaining score advantage during the match on the result of the match. It will also show them that scoring the first goal of the match has a significant effect on the result of the match. In addition, they will realize the importance of score advantage obtained in the early periods of the match.

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