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The Process between the Initiation of an Attack and Scoring Touch in the UEFA Champions League

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Abstract

In this study, a total of 306 goals scored in the UEFA Champions League group games of the 2017-2018 season were assessed. The differences in the distribution of technical and tactical criteria created in the scoring of goals were examined. According to the criteria, the distribution of goals and Ki-square distribution difference analyses were evaluated at the level of .05. The general characteristics of the goals scored: the beginning of the attack from the second zone (45%) and the open play (71%) with organized offences (56%), team passing between 1-3 (45%), inside the penalty area (88%), in the "B2" zone (54%), strikers (54%) who were not under opponent pressure (64%), using the right foot (53%) with one touch (64%). In the Champions League, where high-level football is played, the second part of the field won and organized attacks in the penalty area without making too many passes, especially in the penalty area where the opponent's pressure to meet the attacking player who survived the pressure and the goal scorer's one-touch goal kick, reveals the characteristics of the goals scored in such championships.

Introduction:

Match analysis in team sports provides objective, impartial and valid data on team activities. Therefore, match analysis can be very useful for monitoring and evaluating the performance of teams (Higham *et al.*, 2014; O'Donoghue, 2010). Soccer, on the other hand, is a complex sport and coaches have to control all factors that may affect the success of their clubs. One of the most important features of coaches is the ability to observe and remember all critical points in the team's performance in a match (Borrie *et al.*, 2002). Nevertheless, the coach cannot be expected to make a perfect real-time analysis of a match (Franks & Miller, 1986).

Coaches and performance analysts look for critical performance characteristics (what happened and why !) to identify and diagnose past performances, to predict the future behaviours (what's going to happen and what we should do!) and to prepare prescriptions (McGarry *et al.*, 2002). The rapid development of video analysis technology helps coaches to access detailed information about the performance of the players even during the first half of the match (Mitrotasios *et al.*, 2006; Liebermann *et al.*, 2002; Hohmann & Rommel, 1994). Among the many technical and tactical aspects of the player acts, goals scored are the

most important ones because scoring goals is the most important factor in terms of the team's success (Cachay & Thiel, 2000). Coaches observe the form of the attack through which goals are scored, the actions that precede goals, the area from which the goal is scored and some other elements of goals. All this information about the characteristics of the goals allows coaches to identify the most effective attack patterns and develop better defence strategies (Mitrotasios *et al.*, 2006).

As a result of the studies (Armatas *et al.*, 2009; Armatas & Yiannakos, 2010; Garganta *et al.*, 1997; Jinshan *et al.*, 1993; Kubayi, 2020; Michaildis *et al.*, 2013; Mitrotasios, *et al.*, 2006), analyzing the goals scored in top-level football leagues, tournaments and championships according to different technical and tactical criteria, it was determined that football styles change at the international level. Especially in such high-level football organizations, the playing style adopted by the successful team would be a trend in the following periods. Previous studies have focused on the goal which is the most important element of football. We aimed to analyze from a technical and tactical point of view, the process between the start of the attack and the goal in the example of the goals scored in the UEFA Champions League group matches of the 2017-2018 season.

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Materials and Methods:

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

Technical and tactical criteria were as following in the analysis:

- a) Period of goals scored (first half and second half)
- b) Initiation zone of the attack prior to goal scoring (first third/defending third, middle third, and final third/attacking third)
- c) Type of play (open play, set play)
- d) Style of play (positional play, direct play, counter-attack)
- e) Number of passes of the scoring team (after a sequence of 1-3 passes, 4-6 passes, and 7 and more passes)
- f) Scoring position (inside the penalty area, outside the penalty area)
- g) Goal zone (A1-A2-A3-B1-B2-B3-C1-C2-C3) (Fig.-1)
- h) Scorer's playing position (striker, midfielder, defender)
- i) Existence of pressure by defenders on scorer (pressure, no pressure)
- j) Shooting type (right foot, left foot, header)
- k) Number of touches (one touch, two touches, and three and more touches)

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 given in the tables by analyzing non-parametric Ki-square (X^2). The 13 goals scored by players in their own goals were excluded in the distribution difference analyses. Analyses were made using the package program SPSS 22.0. Ki-square dispersion differentiation analyses evaluated the level of meaningfulness at .01 and .05.

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-circuit league style in 8 groups with four teams and a total of 96 matches in the group stage. The 16 teams that took the top two from 8 groups reached the Last-16 stage, an upper stage. A total of 306 goals were scored in the group stage, which was completed in 96 matches. Because 4 matches ended with no goals, the goals scored in the other 92 matches were evaluated.

Table-1: Goals distribution (N=numbers; %=percent) per period

Period	N	%	Chi-square (X^2)	df	p
1st half	146	47.7	.64	1	.42
2nd half	160	52.3			
Toplam	306	100.00	-		*p<.05 **p<.01

No statistically significant difference was detected between the number of goal made in two periods (Table1).

Table-2: Distribution of scoring according to the initiation zone, type of play, style of play, number of passes and scoring position (penalty area)

	Criteria	Goals(n)	Goals(%)	(X^2)	df	p
Initiation Zone	First third	54	17.6	12.44**	2	.000
	Middle third	89	29.1			
	Final third	54	17.6			
	Other ^a	96	31.4	-	-	-
Type of play	Own goal ^b	13	4.2	-	-	-
	Set play	76	24.8	67.85**	1	.000
	Open play	217	70.9			
Style of play	Own goal ^b	13	4.2	-	-	-
	Positional play	129	42.2	57.70**	3	.000
	Counter attack	50	16.3			
	Direct play	52	17.0			
Number of passes	Other	62	20.3			
	Own goal ^b	13	4.2	-	-	-
	1-3 passes	93	30.4	13.56**	2	.000
	4-6 passes	50	16.3			
Scoring Position (penalty)	≥7 passes	66	21.6			
	Other ^{a-b}	97	31.7	-	-	-
	Inside	257	84.0	166.69**1		.000
	Outside	36	11.8			
	Own goal ^b	13	4.2	-	-	-

*p<.05 **p<.01 level of significance. ^aOther referring to set-play goals, ^bown goals and penalty goals was excluded from the chi-square analysis

A significant difference was found in the distribution of goals scored according to the attack start zone Table-2.

Table-3: Distribution of scoring according to the goal zone, scorer's playing position, pressure by defenders on scorer, shooting type, number of touches

	Criteria	Goals(n)	Goals(%)	(X^2)	df	p
Goal zone	A1	3	1.0	608.04**	8	.000
	A2	61	19.9			
	A3	5	1.6			
	B1	11	3.6			
	B2	147	48.0			
	B3	8	2.6			
	C1	2	.7			
	C2	30	9.8			
	C3	4	1.3			
	Other ^c	35	11.4	-	-	-
Scorer's playing position	Striker	159	52.0	59.87**	2	.000
	Midfielder	94	30.7			
	Defender	40	13.1			
	Own goal ^{cb}	13	4.2	-	-	-
Pressure by defen-	Pressure	95	31.0	21.71**	1	.000
	No Pressure	171	55.9			
	Other ^c	40	13.1	-	-	-
Shooting type	Right foot	154	50.3	54.00**	2	.000
	Left foot	82	26.8			
	Header	55	18.0			
	Other ^d	15	4.9	-	-	-
Number of touches	One touch	170	55.6	112.11**	2	.000
	Two touches	51	16.7			
	Three and more	45	14.7			
	Other ^b	40	13.1	-	-	-

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*p< .05 **p<.01 level of significance. ^aOther referring to set-play goals, own goals and penalty goals was excluded from the chi-square analysis, ^bOther referring to set-play goals, own goals and penalty goals was excluded from the chi-square analysis ^cOther referring to own goals and hitting goals was excluded from the chi-square analysis.

As per the Style of play, the highest goal score rate was observed in positional play and the distribution was found to be significantly different from the contra attack, direct play, and set play (p<.01). There' was a significant difference in the distribution among the number of passes made before scoring goals. The highest rate found was 1-3 passes than 7 passes and more (21.56%); the lowest rate was 3-4 passes (16.3%). There was a significant difference between goals scored from inside the penalty area and from outside the penalty area (Table-2).

According to the goal zone in which the goal was scored, there was a significant difference in distributions of the goals between the nine zones. The highest number of scored goals was found in the "B2" area; the area between the goal area front line where penalty spot is located and the penalty area front line. The second high field was found to be the "A2" area near the goal line. Strikers had the highest scoring rate. This was significantly higher than the rates of the midfielder and defender players. The distribution of goals scored by the scorers without pressure from opponent defenders was significantly higher than those scored under pressure. The goal rate scored with right-foot was found to be higher than with the left foot and headshot (Table 3).

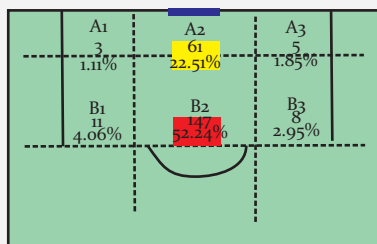


Figure -1: Distribution of scoring according to the goal zone

Discussion:

In this study, the prominent tactical and technical behaviours of the players during the period between the start of the attack and the goal kick in the European Champions League matches were revealed. First of all, although there was no significant difference between the first half of the match and the second half, the distribution of goals in each half showed that approximately 52% of the goals were scored in the second half. In the literature, there are different results in the distribution of goals scored in the match periods when it comes to the top football organizations. However, the common point that more goals were scored in the second half of the matches was found in studies analyzing different tournaments and leagues. It has been emphasized in previous analysis studies that 55-60% of the goals scored in European championships were scored in the second half of the matches (Leite, 2013; Tokul &

Mülazimoglu, 2018; Yiannakos & Armatas, 2006). In the studies analyzing the matches played within the top leagues of Europe, it was reported that 55% of the goals were scored in the second half of the matches (Alberti *et al.*, 2013). It has been reported that 50-60% of goals scored in World Cups were scored in the second half (Armatas *et al.*, 2006; Armatas & Yiannakos, 2010; Njororai, 2013).

Approximately 29% of the goals scored as a result of attacks initiated from the middle zone shows the importance of attacking transition in the balls won in the middle zone. It has been reported that the rate of goals scored in the opponent's half-court and from attacks initiated from this region is approximately 57% (Mitrotasios & Armatas, 2014). When the field was examined in three regions as defensive, medium and offensive, the scoring rate scored after attacks from the middle region was reported to be approximately 38% (Jankovic *et al.*, 2009). Tenga *et al.* (2010), a Norwegian football league researcher, reported that the number of goals scored after the attack started in the middle third (101 goals) was higher than in the first third (84 goals) and the final third (18 goals).

The number of goals scored from open play (217 goals; 70.9%) was expected to be higher than set play (76 goals; 24.8%). However, the scored goals rate through set play (24.8%), have shown that set play organizations are very important in scoring goals. Previous studies have shown the impact of the goal rate (25%-40%) from direct or secondary positions from set play organizations in modern football on the match score. (Taylor *et al.*, 2004; Wright *et al.*, 2011; Yiannakos & Armatas, 2006; Mitrotasios & Armatas, 2014; Lago & Martin, 2006; Armatas & Yiannakos, 2010).

Current study results show a significant increase in a number of goals scored from positional attacks (129 goals; 42.2%). Moreover, it is thought that goals scored with counter-attack (16.3%) and direct play (17.0%) are important. Studies comparing the goal ratio of organized attacks (11.1%) and the goal ratio of counter-attacks (16.9%), show that counter-attacks have a higher goal-scoring ratio (Armatas *et al.*, 2009; Kubayi, 2020). The fact that the number of passes before the goal is higher after 1-3 passes (30.4%) in goals scored within the present study; is similar to some recent study results (Kubayi, 2020; Tokul & Mülazimoglu, 2018). The fact that the analyzes made in the past time tournaments and championships find the rate of goals scored high after 4-5 passes (Mitrotasios & Armatas, 2014) can be interpreted as modern football accelerates even more and teams tend to score with less passing.

The high rate of goals (84%) scored from within the penalty area revealed the need to identify the zones where the goal was scored by further elaborating our work. For this reason, out of the nine zones of the goal areas, most goals were scored from the "B2 zone" (48%). This zone, which covers the area around the penalty point, was determined as

the most critical zone in terms of scoring goals. This area is considered to be important in both defensive and offensive strategies. Previous studies also emphasize that the number of goals scored in the penalty box and goal box is significantly high (Njororai, 2013; Michailidis, 2014).

In the current study, 52.0% of strikers, 30.7% of midfielders and 13.1% of defenders are the goal scorers in the distribution of goals scored which shows similar results to previous studies. Mitrotasios & Armatas (2014) found that in the European football championship, more goals were scored by strikers (41.3%) and wingers (29.3%). It is reported that the scorers hit the goal with one touch (63.7%) and 50% of which are without the pressure of the opponent defender. In the current study, the goals scored with one touch (55.6%) and the ones scored without the pressure of the opponent defender (55.9%) were observed. At the same time, 50.3% of the goals scored were right-foot kicks. In line with these results, an important inference for the scorers can be suggested that it is advantageous to get rid of opponent pressure in the area close to the goal box and to meet the ball and hit the goal with one touch.

Conclusively, the best teams in Europe's most prestigious league brought the team tactics to approach forward, where the striker is brought together with the ball in the penalty area and especially in the goal zone, with the positional understanding of the offences started from the middle third, but after a small number of passes. On the other hand, the scorers showed that they had the understanding of getting rid of the opponent's pressure and scoring a goal with one touch.

This study would help high-level teams reflect their goal-scoring tactics and technical characteristics to the work of coaches for their teams. In addition to offensive strategies, studies on developing defensive understanding can be included in the light of this information. Analyzes in this and similar high-level leagues, championships and tournaments will create important literature chronologically and will enable better follow-up of the development and change in world football. Important information will be provided by revealing the changes in understanding the game and tactical strategies of the teams in terms of the game rules of the tournaments (league-style matches, elimination-style matches, etc.).

References:

- AAlberti, G., Iaia, F.M., Arcelli, E., Cavaggioni, L. & Rampinini, E. (2013): Goal scoring patterns in major European soccer leagues. *Sport Sci. Health*, 9(3):151-153.
- Armatas, V., Yiannakos, A. & Sileloglou, P. (2007): Relationship between time and goal scoring in soccer games: Analysis of three World Cups. *Int. J. Perform. Anal. Sport*, 7(2):48-58.
- Armatas, V., Yiannakos, A., Papadopoulou, S. & Skoufas, D. (2009): Evaluation of the goal scoring patterns in European Championship in Portugal 2004. *Int. J. Perf. Anal. Sport*. 6(1):178-188.
- Armatas, V. & Yiannakos, A. (2010): Analysis and evaluation of goals scored in 2006 World Cup. *J. Sport Health Res.*, 2:119-128.
- Borrie, A., Jonsson, G. & Magnusson, M. (2002): Temporal pattern analysis and its applicability in sport: an explanation and exemplar data. *J. Sports Sci.*, 20:845-852.
- Cachay, K. & Thiel, A. (2000): **Soziologie des Sports**. Pub. by: Juventa-Verlag, München.
- Franks, I.M. & Miller, G. (1986): Eyewitness testimony in sport. *J. Sport Behav.* 9:39-45.
- Garganta, J., Maia, J. & Basto, F. (1997): Analysis of goal-scoring patterns in European top level soccer teams (246-253). In: Reilly T., Bangsbo J. & Hughes M. (eds.) **Science and Football III**. Pub. by: E. & F.Spon, London.
- Higham, D.G., Hopkins, W.G., Pyne, D.B. & Anson, J.M. (2014): Performance indicators related to points scoring and winning in international rugby sevens. *J. Sports Sci. Med.*, 13(2):358-364.
- Hohmann, A. & Rommel, G. (1994): Spielbeobachtung im Fußball. *Leistungs Sport*. 24(6S):41-46.
- Jankovic, A., Leontievic, B. & Pasic, M. 2009. Analysis of efficient attacks in the 2008 European football championship. *Phys. Culture*, 37:180-184.
- Jinshan, X., Xiakone, C., Yamanaka, K. & Matsumoto, M. (1993): Analysis of the goals in the 14th World Cup (p. 203-205). In: Reilly T., Clarys J. & Stibbe A, **Science and Football II**. Pub. by: E. and F. Spon, London.
- Kubayi, A. (2020): Analysis of goal scoring patterns in the 2018 FIFA World Cup. *J. Human Kin.*, 71(1):205-210.
- Lago, C. & Martin, R. (2007): Determinants of possession of the ball in soccer. *J. Sports Sci.*, 25:969-974.
- Leite, S.S.W. (2013): Euro 2012: analysis and evaluation of goals scored. *Int. J. Sports Sci.*, 3(4):102-106.
- Liebermann, D.G., Katz, L., Hughes, M.D., Bartlett, R.M., Mc Clements, J. & Franks, I.M. (2002): Advances in the application of information technology to sport performance. *J. Sport Sci.*, 20:755-769.
- McGarry, T., Anderson, D.I., Wallace, S.A., Hughes, M.D., & Franks, I.M. (2002): Sport competition as a dynamical self-organizing system. *J. Sport. Sci.*, 20(10):771-781.
- Michailidis, Y., Michailidis, C. & Primpa, E. (2013): Analysis of goals scored in European Championship 2012. *J. Hum. Sport Exer.*, 8(2):367-375.
- Michailidis, Y. (2014): Analysis of goals scored in the 2014 World Cup soccer tournament held in Brazil. *Int. J. Sport Stud.*, 4(9):1017-1026.
- Mitrotasios, M., Sendelidis, T.H. & Sotiropoulos, A. (2006): The systematic observation and analysis of the scored goals in soccer as a base to coaching in the training and the match. *Hell J. Phys. Edu.*, 60:58-74.
- Mitrotasios, M. & Armatas, V. (2014): Analysis of goal scoring patterns in the 2012 European Football Championship. *Sport L*, 50:1-9.
- Njororai, W.W.S. (2013): Analysis of goals scored in the 2010 world cup soccer tournament held in South Africa. *J. Phys. Edu. Sport.*, 13(1):6-13.
- Njororai, W.S.S. (2014): Timing of goals scored in selected

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- European and South American Soccer Leagues, FIFA and UEFA Tournaments and the critical phases of a match. *Int. J. Sport. Sci.*, s.56-64.
- O'Donoghue, P. (2010): **Research Methods for Sports Performance Analysis**. Pub. by: Routledge, London.
- Taylor, J., James, N. & Mellalieu, S. (2004): Notational analysis of corner kicks in English premier league soccer. *J. Sports Sci.*, 22:518-519.
- Tenga, A., Holme, I., Ronglan, L.T., & Bahr, R. (2010): Effect of playing tactics on goal scoring in Norwegian professional soccer. *J. Sports Sci.*, 28(3):237-244.
- Tokul, E. & Mülazimoglu, O. (2018): Analyzing the process from the initiation of attack to goal scoring touch in the EURO 2016. *Univer. J. Edu. Res.*, 6(12):2738-2742.
- Wright, C., Atkins, S., Polman, R., Jones, B. & Lee, S. (2011): Factors associated with goals and goal scoring opportunities in professional soccer. *Int. J. Perform. Anal. Sport*, 11:438-449.
- Yiannakos, A. & Armatas, V. (2006): Evaluation of the goal scoring patterns in European championship in Portugal 2004. *Int. J. Perform. Anal. Sport*, 6:178-188.

