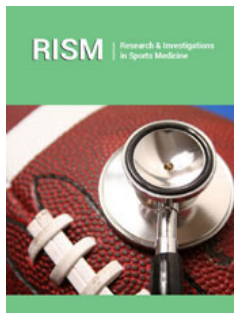# Comparing UEFA Champions League and UEFA Europa League Team Group Performances in Six Subsequent National League Matches

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Abstract

It is an unknown whether participating in the UEFA Champions League (UEFA-CL) and UEFA Europa League (UEFA-EL) is beneficial or detrimental to national league performance given the heavy fixture. In this study, we sought to answer this question by analyzing the six 2021-2022 UEFA-CL and UEFA-EL group matches and the following national league matches. We compared wins, draws, losses, Goals Forward (GF), Goals Away (GA), points, possession, total passes, and pass accuracy statistics of the six international and national matches. Moreover, we analyzed and compared the GF and GA time intervals in international tournaments and the following national matches. Our results showed that the number of wins, GF, points, possession, and total passes were higher in the six subsequent national matches than in the international matches ($p < 0.05$). The number of losses and GA in national matches was significantly lower than in international ($p < 0.01$). GF was significantly higher between the 15-30-minute (international: 70, national: 101; $p = 0.022^*$) and 75-90-minute intervals (international: 130, national: 180; $p = 0.017^*$) in national matches than in international. Likewise, GA was significantly higher in the 0-15-minute interval (international: 74, national: 43; $p = 0.007^{**}$) and 45-60-minute interval (international: 86, national: 56; $p = 0.008^{**}$) in international matches. This study showed that the teams were more successful following national league matches than UEFA-CL and UEFA-EL matches. The identified intervals to be considered for scoring more goals and conceding fewer goals could help coaches to improve team success.

Keywords: UEFA Champions league; UEFA Europa league; Soccer performance; National league matches; Team performance

Introduction

The effect of participating in international tournaments on the success of teams in national leagues is a matter of curiosity in all league clubs. When football teams in the national leagues that play in Europe qualify for the group stage in the Union of European Football Associations (UEFA) Champions League (UEFA-CL) and UEFA Europa League (UEFA-EL) tournaments, at least six more matches are added to the number of competitions these teams will play during the season. In addition, the difficulty level of these international tournaments, in which the teams that finished their national league in the top places out of all leagues compete with one another, naturally increases compared to that of the national leagues. Frequently, studies on the UEFA Champions League and UEFA Europa League focus on the stages and results of the draws in these tournaments [1-3], the results of the teams in terms of their UEFA rankings and their rankings in the national league [1,4,5], the statistics of the tournaments [6-9], the effect of substitutions [10], and the effect of home and away factors [11,12].

When teams qualify to participate in the UEFA-CL and UEFA-EL, the match fixtures become more frequent, and the time between competitions decreases by two to three days. Studies on this subject have frequently focused on the effects of increased competition frequency and its relationship with sports injuries. Howle et al. stated that the increase in competition frequency affects fatigue, sleep, soreness, and Total Quality Recovery (TQR) parameters [13]; another study showed that increased competition frequency increases the injury rates of the players [14]. Similarly, Dellal et al. examined the effects of six games played in a row and compared them to periods with fewer matches. The authors noted that there was no difference between the intense period and the period with fewer matches in terms of physical and technical activities; however, the rates of injury during the competition increased [15]. Dupont et al. showed that the increase competition frequency did not affect the total distance covered by the players, including high-intensity distance and the number of sprints, but increased the injury rates of the players [16]. Lago-Penas et al. [17] examined the performance of football players with a schedule of frequent matches in Spain during the 2005-2006 season; the authors determined that the activity profiles of the footballers were not affected by short rest intervals, and there was no significant difference in medium tempo or submaximal and maximal running distances [17].

The above results indicate that a frequent-match schedule does not affect player performance, and it is a matter of curiosity how the teams achieve better results in the national leagues immediately after the international competitions. At present, there is no detailed, up-to-date research examining teams' performance in national leagues immediately after the UEFA-CL and UEFA-EL competitions. In this study, we tabulated six group matches of the teams in the UEFA-CL and UEFA-EL group stages in the 2021-2022 season and recorded six competitions played by the teams in their national leagues immediately after these international matches in a separate table. We statistically compared the final tables after the UEFA-CL and UEFA-EL group matches and the following national matches. This study aimed to examine the effects of UEFA-CL and UEFA-EL competitions on the statistics obtained in the national league

matches played immediately after these competitions. In addition, this study aimed to elucidate time intervals when the teams scored more goals and conceded more goals in international competitions and in the following national league competitions. Thus, we aimed to elucidate time intervals on which the teams should focus during international matches and the subsequent national league matches.

Method

Study design

For this research, we recorded the results of the matches played in the group stage for each team competing in the UEFA-CL and UEFA-EL group stages in the 2021-2022 season, as well as the results of the national league matches following these matches. In tables, we recorded information about wins, draws, losses, Goals Forward (GF), Goals Away (GA), possession (%), total passes, and pass accuracy (%). Because one team did not have a national league match immediately after the last UEFA-CL competition, we excluded it from the analysis and analyzed the results of 63 teams. In addition, we did not include the results of seven teams whose information we could not obtain in terms of possession, total passes, and pass accuracy; thus, we analyzed 56 teams. We also recorded and compared the time intervals of goals scored and goals conceded by the teams in international and national competitions. For this purpose, we divided the 90-minute competition time into six intervals 0-15 min, 15-30 min, 30-45 min, 45-60 min, 60-75 min, and 75-90 min and recorded the goals corresponding to these intervals for both international and national matches.

Statistical analysis

To analyze whether there was a significant difference between wins, draws, losses, GF, GA, points, possession, total passes, and pass accuracy after six international matches and six national competitions, we used the paired samples t-test and set the confidence interval to 95% ($p < 0.05$). We used the paired samples t-test to analyze the differences between the number of goals scored within the same time intervals in international and national competitions. We used the IBM SPSS Statistics 26 package software for the statistical analysis in our research.

Results

Table 1: Results of six UEFA-CL and UEFA-EL matches and six national league matches.

Tournament	Win	Drawn	Lost	GF	GA	Points	TP	PA (%)
UEFA-CL	78	36	78	297	297	270	475.75	81.54
Nationalc	111	43	32	383	176	376	534.03a	83.29a
UEFA-EL	69	54	69	252	252	264	464.17	79.7
Nationald	91	44	57	324	254	317	488.51b	79.85b

GF: Goals Forward; GA: Goals Away; PA: Pass Accuracy Per Match; TP: Total Passes Per Match

a-Three teams of 31 were not included in the national scores mean because of the missing information of TP and PA. Because of that, in the calculation of national means, the total scores divided the number of calculated teams (Total/28).

B-Four teams of 32 were not included in the national scores mean because of the missing information of TP and PA. Because of that, in the calculation of national means, the total scores divided the number of calculated teams (Total/28)

c-National league results of UEFA-CL teams. One team was excluded because of not having a national league match immediately after the last UEFA-CL competition.

d- National league results of UEFA-EL teams.

The total results of the teams at the end of the UEFA-CL and UEFA-EL group stage and the following six national league matches are shown in Table 1. The averages of the number of wins, GF, points, possession, and total passes in six national league matches were significantly higher than those in the international competitions (Table 2). The averages of defeats and GA in six national league matches of the teams were also significantly lower than those in the international games (p < 0.01). The difference in the draw average between the international and national league matches was not significant. The teams scored most goals in international and national matches in the 75-90-min interval (international: 24%;

national: 26%; Figure 1). In addition, the number of goals scored during the 15-30-min interval (international: 70, national: 101; p = 0.022*) and 75-90-min interval (international: 130, national: 180; p = 0.017*) in national league matches was significantly higher than those in international matches (Figure 1). The most conceded timeframe was the 75-90 min interval in international and national matches. Teams conceded fewer goals in national league matches after international matches. Teams conceded more goals in international matches during the 0-15-min range (international: 74, national: 43; p = 0.007**) and the 45-60 range (international: 86, national: 56; p = 0.008**; Figure 2).

Figure 1: Total goals forward time intervals in international matches (UEFA-CL and UEFA-EL) and the following national league competitions (*p < 0.05).

Figure 2: Total goals away time intervals in international matches (UEFA-CL and UEFA-EL) and the following national league competitions (**p < 0.01).

Discussion

The performed analysis showed that the average number of wins of the teams in the six national league matches following the international matches was 37% higher, and the average of the points they achieved was 30% higher than that in the international

matches. We observed a similar increase in GF. The average of goals scored by the teams in the six national league matches was 29% higher than that in the UEFA-CL and UEFA-EL matches (Table 2). Hägglund et al. [18] examined the effect of UEFA-CL matches on national league matches during 2001-2012 in terms of athlete injuries, concluding that the increase in athlete injuries negatively

affects success in the league. In this study, the researchers also determined the athlete injury rating according to the total duration of the competition and examined the effect of over-competition on the results based on this rating [18]. Using a different method in our study, we evaluated the results of the national league matches immediately after the international competitions. If we consider the entire season, there is a 38-week competition program in a league that includes 20 teams.

Table 2: Paired samples t-test analysis results comparing six international (UEFA-CL and UEFA-EL) and the following six national match results.

(n: 63)[a]	Tournament	Mean	s	p
Win	International	2.333	1.524	0.001**
	National	3.191	1.435	
Drawn	International	1.413	1.042	0.842
	National	1.381	0.941	
Lost	International	2.254	1.402	0.001**
	National	1.413	1.102	
GF	International	8.698	4.672	0.001**
	National	11.222	4.459	
GA	International	8.492	3.614	0.009**
	National	6.825	3.391	
Points	International	8.46	4.181	0.001**
	National	11	3.703	
(n: 56)[b]				
Possession (%)	International	51.036	7.482	0.000***
	National	57.086	6.177	
Passes	International	478.92	87.53	0.004**
	National	511.271	71.385	
Pass Accuracy	International	80.929	4.906	0.255
	National	81.572	4.382	

the following six national match results.

GF: Goals Forward; GA: Goals Away; s: Standard Deviation; *p < 0.05; **p < 0.01; ***p < 0.001

a-One team was not included because of a missed match.

b-Seven teams were not included because of missing information.

However, a team that advances to the finals in the UEFA-CL plays 13 games in total, and a team that reaches the finals in the UEFA-EL plays a total of 15 more competitions compared to clubs that do not participate in international tournaments (excluding the qualifying matches). In the UEFA-CL and UEFA-EL, the number of teams decreases as the rounds progress. Accordingly, as the rounds advance, the number of teams that can be affected by the competition frequency decreases. Similar to Hägglund at al. [18], Bengtsson et al. [19] compared the UEFA-CL and UEFA-EL match with all national league matches of the teams for 11 years and showed that the competition frequency increased the frequency of injuries of the athletes but did not affect the team performance [19]. At the beginning of our research, we hypothesized that the effect of UEFA-CL and UEFA-EL matches on national leagues would be seen more clearly in the matches immediately following international competition compared to matches during the entire season in general.

The performed analysis showed that the teams were not negatively affected by the matches they played in the national leagues following the UEFA-CL and UEFA-EL matches; on the contrary, they obtained better statistics in the national leagues than in the international competitions. In fact, after international matches, the teams were defeated 37% fewer times in national league competitions, and the number of goals conceded decreased by 20% compared to that in international competitions (Table 2). These results showed that the teams won more matches, scored more goals, lost fewer matches, and conceded fewer goals in national league matches after UEFA-CL and UEFA-EL matches. Many studies have shown that an increase in competition frequency increases the injury rates of athletes [18,19]. The International Football Association Board (IFAB) increased the number of substitutions allowed in football to five in May 2020. We believe that this injury rate may have decreased along with the increased substitution number. With this rule change, it has become possible for teams to prevent athlete injuries by rotating more players and keeping their players on the field only as necessary after UEFA-CL and UEFA-EL competitions. There is a need for more up-to-date research on this subject.

Our results showed that the average percentage of possession was 12% higher and the number of passes was 7% higher in the six

national league matches after the international matches. While the observed difference is statistically significant, the 1% increase in the average pass hit rate is insignificant (Table 2). Yi et al. performed a technical analysis of UEFA-CL between 2009 and 2018 and noted that the teams participating in the tournament focused more on controlling the game and creating gaps in the opponent's territory by increasing the passing frequency and accuracy [20]. Teams compete in UEFA-CL and UEFA-EL with other successful teams that finished the previous season in the top positions in other leagues. The experience gained during the preparation processes for such high-level matches may be reflected in the next competition. The technical-tactical training to compete with a high-level opponent and the psychological state acquired during this process may also affect the following national competitions. Mellalieu et al. stated that the stressors that affect athletes may be organizational, performance-related, or personal [21]. Therefore, the UEFA-CL and UEFA-EL competitions may also have an organizational-based psychological effect; the preparation process for the competition may have a performance effect, and these processes may affect the athletes individually. It is a natural expectation that all these effects would also be reflected in the next league match.

In this study, we also examined the range of goals scored and conceded by teams; we determined that the teams scored and conceded more goals in the last minutes of both halves (30-45 and 75-90 min) in both international and national league competitions compared to other intervals (Figures 1& 2). Furthermore, when the teams returned to national league matches after international matches, they scored significantly more goals in the 15-30 and 75-90-min intervals (Figure 1). The increase in the number of goals scored in the 15-30-min range was 44%, and the increase in the 75-90-min range was 38%. A study conducted during the 2013-2014 season showed that the teams scored more goals in the 31-45 and 76-90-min intervals in England and France. In addition, the abovementioned study showed that the highest number of goals was scored in the 76-90-min range in all countries included in the study. In the same study, the researchers noted that the most goals were scored during the 76-90-min interval in the 2013-2014 season of the UEFA-CL [22]. We see that this situation has not changed in the eight years since Njororai's analysis in 2014. These results indicate the need for the teams to perform special training during the 75-90-min interval and to produce appropriate tactics to achieve successful results.

We found that teams conceded fewer goals in all-time intervals in national league matches than in the UEFA-CL and UEFA-EL (Figure 2). We found that the difference between the 0-15 and 45-60-min intervals, which coincide with the first half and the beginning of the second half, was significant (Figure 2). Therefore, while the teams were more likely to concede goals at the start of the first half and the second half in the UEFA-CL and UEFA-EL matches, they conceded fewer goals during these minutes in the competitions when they returned to the league. When the teams returned to the national league, they conceded 42% fewer goals during the 0-15 min interval and 35% fewer goals during the 45-60 min interval than in international matches.

Conclusion

The results of our research revealed that the teams performed better in their domestic league matches immediately after international matches compared to their performance in the UEFA-CL and UEFA-EL group stages. These results suggest that the participation of teams in international organizations does not harm league performance; on the contrary, it increases success. We speculate that the experience of the teams obtained during UEFA-CL and UEFA-EL competitions and the improvement in their psychological levels obtained during the training periods for these competitions may be reflected in subsequent next matches. In this study, we examined only the group-stage competitions in the UEFA-CL and UEFA-EL because there were more teams at this stage than in the following rounds. We examined the international tournament and national league performance of 63 teams. The obtained results provide information on the effects of participation in the UEFA-CL and UEFA-EL on national league matches. In addition, examining the range of goals scored and conceded by teams in such tournaments and subsequent local competitions provides practical information to coaches.

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