

# Analysis of game-related performance indicators in the Greek soccer league: insights from the 2020-2021 season

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## Abstract

**Introduction.** Technical-tactical patterns can be pivotal for athletic success. **Aim of Study.** The purpose of this study is to comprehensively analyze game-related performance indicators (PI) in the Greek soccer league (Super League Interwetten) during the 2020-2021 season, encompassing both offensive and defensive statistics across the regular season, the playoffs and the playouts. **Material and Methods.** The sample included 254 matches among 14 teams, categorized into three levels based on their final ranking: Level 1 (L1), Level 2 (L2), and Level 3 (L3). For this study non-parametric statistical tests to evaluate the impact of performance indicators on teams' final ranking were applied, specifically the Kruskal–Wallis and Mann–Whitney U tests. **Results.** Significant differences were observed in goals scored per half-time and per 15-minute of gameplay, with high-ranked teams (L1) outperforming L3 teams, particularly in the first half and during the second quarter (15-30 min) of the game. In terms of offensive and defensive play, L1 teams demonstrated a more possession-oriented approach, characterized by higher number of total passes, shorter pass lengths, and more frequent deep completions and touches in the penalty area. Defensively, L1 teams conceded fewer goals and faced fewer shots, suggesting more effective defensive strategies. Additionally, differences in set play execution were noted, with L1 teams obtaining more corners, having a preference for short passes and targeting specific areas during corners. **Conclusions.** The findings of this study highlight the importance of a dynamic, possession-based style of play in achieving higher rankings in the Greek soccer league. The results underscore the significance of efficient offensive strategies, organized defensive tactics and strategic use of set play in soccer performance and teams' success.

**KEYWORDS:** performance analysis, football tactics, game-related statistics, soccer, playing style, data science.

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## Introduction

Identifying recurring behavioral patterns can be pivotal for athletic success [19]. Performance analysis and game-related data analytics serve as crucial tools for players and coaching staff in soccer, offering data-driven insights to enhance team efficiency [18]. Notational analysis has been the primary tool for capturing athletic, tactical, and physical performance levels of players and entire teams for several years [18, 19], whereas the digital revolution has significantly altered the landscape of performance analysis [18].

Numerous studies have addressed performance analysis and have explored goal-scoring patterns across different soccer tournaments and championships, such as the World Cup, the Women's World Cup, the European Championships, and various national leagues in Europe [5, 12, 20, 21, 22, 23, 24, 27, 29]. These studies have revealed variations in goal-scoring methods, game-related statistical indicators, and styles of play among different European leagues, such as those in Italy and Spain [24].

Performance indicators (PI) are metrics that include various aspects of performance and are instrumental for optimizing and maximizing soccer players' performance [15, 19]. In offensive play, successful teams generally outperform in metrics like goals scored, total shots, ball possession, and offsides [9, 13, 14]. In defensive play, successful teams often excel in metrics like fewer shots received from the opponents and fewer red cards [17]. Regarding goal scoring, game-related statistics indicate that goals are more frequently scored during open play in comparison to set plays [21, 27]. Additionally, a style of play varies among different European leagues, e.g., Spanish teams choose a combination game, while Italian teams lean towards a defensive approach, often scoring from set plays [23, 25, 26]. Several studies have also highlighted the influence of a first goal on a match's outcome [20, 27]. Moreover, most goals tend to be scored in the second half of a game, especially during the last 15 minutes [20, 27]. However, other relevant researchers [3] did not find statistically significant differences and such temporal patterns in the Greek "Super League" 2007-2008.

Regarding teams' ranking, high-ranking teams outperformed teams placed in the middle or at the bottom of a ranking table in overall goal-scoring metrics in both halves of games and per 15 minutes of gameplay [7]. Furthermore, the notable interaction between a team's ranking position and its running and technical performance, goals scored, ball possession, assists, successful passes from open play, shots on goal, goals conceded, and goalkeeper's saved shots on target was revealed [1]. Winning teams significantly outperformed losing ones in soccer PI like aerial duels, ball possession, a number of passes, accuracy of passes, total shots, and set pieces [8]. Additionally, a teams' final ranking was significantly correlated with goals scored from open play, and ball possession [28]. Specifically, the top three teams scored significantly more goals from possessions started in the midfield zone than lower-ranking teams, while the bottom three teams scored notably fewer goals from short possessions (0-4 passes) and longer possessions (lasting 12 seconds or more) in the Norwegian top professional league during the 2008-2010 seasons [28].

Regarding the Greek soccer league, studies have analyzed goal-scoring patterns [4, 24, 27] and offensive performance of defending players [2]. However, regarding offensive and defensive PI, there is no comprehensive analysis for a whole season (a regular season, playoffs, and playouts) in the Greek soccer league. Thus, the present study aimed to analyze the

game-related PI in both offensive and defensive play for a whole season in the Greek soccer league.

### **Aim of Study**

The primary purpose of the study was to investigate determinants of teams' performance in the Greek soccer league. The additional aims were to identify: (1) the differences in goals scored per match half and per 15 minutes of gameplay, and (2) the differences in offensive and defensive play based on a teams' ranking.

### **Material and Methods**

#### *Sample*

The analysis included the regular season and the playoff-playout period of the 2020-2021 Greek soccer league (Super League Interwetten), where game-related indicators and total goals scored in all of the matches were analyzed. Specifically, this study included the 254 games of the 14 teams (the 196 matches from the regular season, 30 from the playoffs, and 28 from the playouts). At the conclusion of the regular season, the top six teams advanced to the playoffs, where they competed against each other in both home and away matches. The remaining eight teams participated in the playouts, in which the teams that finished in the positions 7-10 played four home games and three away games, while the rest played three home and four away games, respectively. For the statistical analysis, the 14 teams of the league were divided into three level-groups based on their final ranking, as done in previous studies [7]: Level 1 (L1) = The teams ranked from 1st to 5th place (n = 5), Level 2 (L2) = The teams ranked from 6th to 9th place (n = 4), Level 3 (L3) = The teams ranked from 10th to 14th (n = 5).

#### *Analysis procedure*

The data and game-related metrics examined in this study were sourced from Wyscout's platform (<https://wyscout.com>) [30], accessible via Hudl. This platform has been utilized for academic research in similar studies [13, 14, 27], and the variables analyzed and the definitions used for this study were defined in the platform's glossaries (Wyscout Glossary, <https://dataglossary.wyscout.com>).

#### *Statistical analysis*

The effect Size (ES) was calculated according to Cohen's criteria [10]. The dataset was imported into the Statistical Package "IBM SPSS Statistics for Windows", Version 25.0, IBM Corp., Armonk, NY. Regarding the

ES, the magnitude of the coefficient  $\eta^2$  was evaluated in the following ranges:  $\eta^2 = 0.01 - 0.06$  (a small effect),  $\eta^2 = 0.06 - < 0.14$  (a moderate effect), and  $\eta^2 > 0.14$  (a large effect). The nonparametric statistical tests (Kruskal–Wallis) were selected to compare the goals scored per match half, 15 minutes of gameplay, and the PI regarding the teams' final ranking (L1, L2, L3), and in the event of a significant difference, the Mann–Whitney U tests using the Bonferroni correction were employed. The level of the statistical significance was set at  $p \leq 0.05$ .

## Results

### *Differences in goals scored per match half and per 15 minutes of gameplay*

The analysis showed the significant differences among the teams based on their final ranking (L1, L2, and L3) regarding the goals scored during the first and the second half of gameplay. Specifically, the high-ranking teams (L1) scored significantly more goals during the first half of the games ( $M = 21.60$ ,  $SD = 6.87$ ) compared to the L3 teams,  $H(2) = 8.4967$ ,  $p = 0.014$ ,  $\eta^2 = 0.653$  (Table 1). The parallel pattern emerged for the second half of gameplay, where most goals were scored.

The analysis of the goals scored per 15 minutes of gameplay with respect to the teams' ranking indicated the significant differences only in the second quarter of a game (15-30 min.),  $H(2) = 8.6917$ ,  $p = 0.013$ ,  $\eta^2 = 0.669$ , as the L1 teams ( $M = 7.40 \pm 2.07$ ) outpaced the L3 teams (Table 2), even though most of the goals were scored in the last 15 minutes of gameplay ( $L1 = 15.20 \pm 7.53$ ,  $L2 = 9.00 \pm 2.94$ ,  $L3 = 7.00 \pm 1.87$ ;  $p > 0.05$ ).

### *Differences in the offensive and defensive play based on the teams' rankings*

The analysis results regarding the PI of the offensive (Table 3) and defensive (Table 4) game, depending on the teams' rankings, reported the notable differences in several aspects of play. The Kruskal–Wallis test for independence revealed the statistically significant differences in the number of goals scored among the L1, L2, and L3 teams (Table 3). In addition, the highly ranked teams (L1) had the significantly higher number of total passes ( $M = 405.82$ ,  $SD = 62.92$ ) compared to the L2 ( $M = 335.55$ ,  $SD = 23.29$ ) and L3 teams ( $M = 325.63$ ,  $SD = 30.61$ ),  $H(2) = 6.3514$ ,  $p = 0.042$ ,  $\eta^2 = 0.489$ . The possession-oriented approach by the top-ranked teams (L1) was also shown by their 45+ sec. possessions ( $M = 185.60$ ,  $SD = 62.02$ ),  $H(2) = 8.1608$ ,

**Table 1.** Goals scored per match half

Variable	L1 (M-SD)	L2 (M-SD)	L3 (M-SD)	H	p	$\eta^2$
Goals scored in 1st half	21.60 $\pm$ 6.87	16.50 $\pm$ 3.69	9.40 $\pm$ 2.30	8.4967	0.014†	0.653
Goals scored in 2nd half	33.80 $\pm$ 13.60	15.25 $\pm$ 4.99	15.60 $\pm$ 4.39	7.6043	0.022‡	0.584

Note: M-SD – Mean  $\pm$  Standard Deviation, H – Kruskal–Wallis H statistic, p – p-value,  $\eta^2$  – Eta Squared, L1 – Level 1, L2 – Level 2, L3 – Level 3

† L1 vs L3,  $p < 0.05$ ; ‡ L2 vs L3,  $p < 0.05$

**Table 2.** Goals scored per 15 minutes of gameplay

Variable	L1 (M-SD)	L2 (M-SD)	L3 (M-SD)	H	p	$\eta^2$
0-15 min.	5.40 $\pm$ 2.60	4.75 $\pm$ 3.09	2.20 $\pm$ 1.64	3.6761	0.159	0.283
15-30 min.	7.40 $\pm$ 2.07	4.75 $\pm$ 2.36	2.40 $\pm$ 0.89	8.6917	0.013†	0.669
30-45 min.	8.80 $\pm$ 6.41	7.00 $\pm$ 1.82	4.80 $\pm$ 1.78	2.0600	0.357	0.158
45-60 min.	8.60 $\pm$ 4.77	2.25 $\pm$ 1.50	4.00 $\pm$ 1.87	5.8902	0.053	0.453
60-75 min.	10.00 $\pm$ 4.00	4.00 $\pm$ 2.70	4.60 $\pm$ 3.28	5.5827	0.061	0.429
75-90 min.	15.20 $\pm$ 7.53	9.00 $\pm$ 2.94	7.00 $\pm$ 1.87	5.2116	0.074	0.401

Note: M-SD – Mean  $\pm$  Standard Deviation, H – Kruskal–Wallis H statistic, p – p-value,  $\eta^2$  – Eta Squared, L1 – Level 1, L2 – Level 2, L3 – Level 3

† L1 vs L3,  $p < 0.05$

$p = 0.017$ ,  $\eta^2 = 0.628$ , as well as their overall ball possession. The high-ranking teams (L1) also led in more lateral passes ( $M = 151.53$ ,  $SD = 29.62$ ), and had shorter average pass length ( $M = 19.57$ ,  $SD = 0.57$ ) compared to the L2 and L3 teams,  $H(2) = 6.1457$ ,  $p = 0.046$ ,  $\eta^2 = 0.473$  (Table 3).

Deep completions were also significantly higher in the L1 teams ( $M = 6.94$ ,  $SD = 1.96$ ) compared to the L2 ( $M = 4.33$ ,  $SD = 0.59$ ) and L3 teams ( $M = 3.79$ ,  $SD = 0.80$ ),

$H(2) = 6.3029$ ,  $p = 0.043$ ,  $\eta^2 = 0.485$ . Additionally, the L1 teams had more touches in the penalty area ( $M = 16.15$ ,  $SD = 3.885$ ) compared to the L2 ( $M = 11.80$ ,  $SD = 2.056$ ) and L3 teams ( $M = 10.39$ ,  $SD = 1.751$ ),  $H(2) = 6.0314$ ,  $p = 0.049$ ,  $\eta^2 = 0.464$  (Table 3).

Regarding the defensive metrics, the significant differences were observed among the teams of different rankings (L1, L2, L3) in several key areas (Table 4). The highly ranked teams (L1) conceded significantly

**Table 3.** Performance indicators of the offensive game depending on a teams' ranking

Variable	L1 (M-SD)	L2 (M-SD)	L3 (M-SD)	H	p	$\eta^2$
Total goals	55.40 ± 16.95	31.75 ± 4.03	25.00 ± 4.52	10.4925	0.005†‡	0.807
Shots	10.40 ± 2.14	8.24 ± 0.41	7.44 ± 1.17	4.8057	0.090	0.370
Average shot distance	17.20 ± 0.90	18.31 ± 0.89	18.70 ± 1.06	5.1257	0.077	0.394
Passes	405.82 ± 62.92	335.55 ± 23.29	325.63 ± 30.61	6.3514	0.042†	0.489
Forward passes	136.36 ± 14.11	125.58 ± 5.35	122.70 ± 4.16	3.6514	0.161	0.281
Lateral passes	151.53 ± 29.62	117.08 ± 21.91	110.25 ± 18.33	5.6429	0.060	0.434
Long passes	42.24 ± 2.95	46.47 ± 3.81	46.02 ± 1.83	4.8857	0.087	0.376
Average pass length	19.57 ± 0.57	20.44 ± 0.27	20.19 ± 0.48	6.1457	0.046‡	0.473
Match tempo	17.06 ± 0.60	16.15 ± 0.44	16.14 ± 0.30	5.7919	0.055	0.446
Passes into final third	50.59 ± 6.75	45.92 ± 4.65	42.70 ± 2.46	3.0229	0.221	0.233
Through passes	7.02 ± 1.14	5.54 ± 0.85	5.32 ± 0.58	5.6429	0.060	0.434
Progressive passes	66.76 ± 6.13	64.35 ± 2.59	62.40 ± 2.90	1.4829	0.476	0.114
Deep completions	6.94 ± 1.96	4.33 ± 0.59	3.79 ± 0.80	6.3029	0.043†	0.485
Possession	53.70 ± 5.11	47.58 ± 0.82	47.64 ± 3.08	5.7333	0.057	0.441
Total possessions	3930.00 ± 107.31	3736.00 ± 176.57	3713.40 ± 44.35	6.7714	0.034†	0.521
5 sec. Possessions	1157.60 ± 142.17	1203.25 ± 95.51	1251.40 ± 108.78	1.3657	0.505	0.105
5-15 sec. Possessions	1444.00 ± 119.85	1479.75 ± 148.85	1459.80 ± 38.38	0.0514	0.975	0.004
15-45 sec. Possessions	1138.20 ± 139.76	943.25 ± 70.64	912.80 ± 119.17	5.6553	0.059	0.435
45+ sec. Possessions	185.60 ± 62.02	106.25 ± 47.23	86.00 ± 12.98	8.1608	0.017†	0.628
Possessions' Duration <sub>(sec.)</sub>	14.40 ± 1.88	12.45 ± 1.37	11.88 ± 1.00	5.1370	0.077	0.395
Crosses	14.46 ± 2.13	13.24 ± 2.33	11.19 ± 1.38	4.1657	0.125	0.320
Crosses – left side	6.62 ± 1.65	6.20 ± 2.52	5.16 ± 0.76	1.4894	0.475	0.115
Crosses – right side	7.66 ± 0.89	6.95 ± 0.69	5.98 ± 1.13	6.1076	0.047†	0.470
Dribbles	27.56 ± 2.71	25.89 ± 1.38	25.02 ± 3.33	1.4496	0.484	0.112
Touches in penalty area	16.15 ± 3.88	11.80 ± 2.05	10.39 ± 1.75	6.0314	0.049†	0.464

Note: M-SD – Mean ± Standard Deviation, H – Kruskal–Wallis H statistic, p – p-value,  $\eta^2$  – Eta Squared, L1 – Level 1, L2 – Level 2, L3 – Level 3

† L1 vs L3,  $p < 0.05$ ; ‡ L2 vs L3,  $p < 0.05$

**Table 4.** Performance indicators of the defensive game depending on a teams' ranking

Variable	L1 (M-SD)	L2 (M-SD)	L3 (M-SD)	H	p	$\eta^2$
Goals conceded	31.60 ± 9.76	37.75 ± 1.70	44.00 ± 3.08	7.0932	0.029*	0.546
Shots against	7.44 ± 1.28	9.36 ± 0.32	9.77 ± 0.33	7.0000	0.030*	0.538
Average shot against distance	18.26 ± 0.78	17.84 ± 0.22	17.67 ± 0.84	1.4829	0.476	0.114
Offensive duels	68.82 ± 3.37	68.13 ± 3.61	68.16 ± 4.87	0.2257	0.893	0.017
Defensive duels	65.68 ± 5.64	70.55 ± 5.89	69.59 ± 1.92	1.6057	0.448	0.124
Aerial duels	35.74 ± 3.26	41.53 ± 4.91	43.52 ± 6.75	4.8857	0.087	0.376
Loose ball duels	37.54 ± 1.84	40.05 ± 3.10	40.96 ± 2.59	4.8857	0.087	0.376
Losses	94.11 ± 2.92	101.06 ± 8.00	100.37 ± 2.58	4.8857	0.087	0.376
Losses/low (own third)	14.43 ± 2.43	16.18 ± 1.07	17.24 ± 0.63	3.8829	0.143	0.299
Losses/medium (2nd third)	36.22 ± 2.91	41.02 ± 2.69	41.41 ± 1.98	6.7714	0.034†	0.521
Losses/high (final third)	42.49 ± 3.81	43.19 ± 5.69	41.20 ± 1.30	1.0457	0.593	0.080
Recoveries	72.54 ± 2.47	74.50 ± 4.51	72.31 ± 2.53	0.5229	0.770	0.040
Recoveries/low (own third)	29.09 ± 1.53	33.48 ± 0.81	33.52 ± 2.08	9.0456	0.011†‡	0.696
Recoveries/medium (2nd third)	33.26 ± 2.22	32.38 ± 4.15	30.62 ± 1.46	2.4657	0.291	0.190
Recoveries/high (final third)	10.19 ± 1.32	8.64 ± 1.23	8.17 ± 0.35	5.1629	0.076	0.397
Interceptions	38.14 ± 2.80	42.27 ± 2.42	41.92 ± 2.20	6.0857	0.048†	0.468
Pressing intensity (PPDA)	7.68 ± 0.50	9.07 ± 1.75	9.15 ± 0.87	5.1257	0.077	0.394
Shots blocked	1.53 ± 0.39	2.29 ± 0.20	2.17 ± 0.20	7.2429	0.027†‡	0.557
Fouls	16.11 ± 1.16	16.91 ± 1.84	16.84 ± 0.68	1.3000	0.522	0.100
Yellow cards	90.60 ± 14.79	81.50 ± 7.59	81.40 ± 20.80	1.5012	0.472	0.115
Red cards	3.40 ± 2.19	3.75 ± 2.21	3.00 ± 2.12	0.3309	0.848	0.025

Note: M-SD – Mean ± Standard Deviation, H – Kruskal–Wallis H statistic, p – p-value,  $\eta^2$  – Eta Squared, L1 – Level 1, L2 – Level 2, L3 – Level 3

\* L1 vs L2, p < 0.05; † L1 vs L3, p < 0.05; ‡ L2 vs L3, p < 0.05

**Table 5.** Differences in set plays depending on a teams' ranking

Variable	L1 (M-SD)	L2 (M-SD)	L3 (M-SD)	H	p	$\eta^2$
Fouls suffered	14.38 ± 1.776	15.48 ± 0.955	16.62 ± 0.982	4.8057	0.090	0.370
Penalties	7.80 ± 2.683	6.75 ± 1.893	7.20 ± 2.588	0.3346	0.846	0.026
Penalties converted	5.80 ± 2.683	6.00 ± 2.160	5.00 ± 1.871	0.6899	0.708	0.053
Direct free kicks	19.60 ± 7.266	17.75 ± 3.775	14.40 ± 3.286	2.4408	0.295	0.188
Corners	165.00 ± 22.125	114.00 ± 10.614	107.20 ± 11.628	9.6854	0.008†‡	0.745
Corners with shots	25.20 ± 9.834	21.50 ± 4.041	17.20 ± 9.524	1.0487	0.592	0.081
Corners to near post	52.80 ± 10.849	30.00 ± 3.559	33.00 ± 5.701	9.1029	0.011†‡	0.700
Corners to far post	25.00 ± 8.573	24.75 ± 7.500	19.80 ± 5.933	1.1533	0.562	0.089

Corners to penalty area	7.00 ± 1.871	12.25 ± 6.344	10.40 ± 6.066	3.0408	0.219	0.234
Corners to GK zone	56.40 ± 15.868	39.25 ± 6.602	32.80 ± 2.588	8.7298	0.013†	0.672
Corners with short pass	23.80 ± 7.530	7.75 ± 5.439	11.20 ± 2.864	9.7069	0.008†‡	0.747

Note: M-SD – Mean ± Standard Deviation, H – Kruskal–Wallis H statistic, p – p-value,  $\eta^2$  – Eta Squared, L1 – Level 1, L2 – Level 2, L3 – Level 3, GK – Goalkeeper

† L1 vs L3,  $p < 0.05$ ; ‡ L2 vs L3,  $p < 0.05$

fewer goals ( $M = 31.60$ ,  $SD = 9.76$ ) compared to the L2 ( $M = 37.75$ ,  $SD = 1.70$ ) and L3 teams ( $M = 44.00$ ,  $SD = 3.08$ ),  $H(2) = 7.0932$ ,  $p = 0.029$ ,  $\eta^2 = 0.546$ . Similarly, the number of shots against the L1 teams was significantly lower ( $M = 7.44$ ,  $SD = 1.28$ ) compared to the L2 and L3 teams,  $H(2) = 7.0000$ ,  $p = 0.030$ ,  $\eta^2 = 0.538$ .

Losses in the second third of the field (Losses/medium) were also notably different, with the L1 teams having fewer losses ( $M = 36.22$ ,  $SD = 2.91$ ) compared to the L2 and L3 teams ( $p < 0.05$ ). Shots blocked, interceptions and recoveries in the own third (Recoveries/low) were significantly higher ( $p < 0.05$ ) for the L2 and L3 teams compared to the L1 teams (Table 4).

Regarding the differences in set plays depending on the teams' rankings, a notable finding was the significant difference in the total number of corners obtained by the teams (Table 5). The highly ranked teams (L1) had the significantly higher ( $p < 0.05$ ) number of corners ( $M = 165.00$ ,  $SD = 22.12$ ) compared to the L2 ( $M = 114.00$ ,  $SD = 10.61$ ) and L3 teams ( $M = 107.20$ ,  $SD = 11.62$ ). In terms of corner execution, the L1 teams also differed significantly ( $p < 0.05$ ) in their use of short passes from corners, with higher frequency compared to the L2 and L3 teams (Table 5). Additionally, the L1 teams targeted the near post and the goalkeeper's zone more frequently ( $p < 0.05$ ).

## Discussion

The present study analyzed the game-related PI in the Greek soccer league based on the teams' final ranking. Regarding the goals scored per match half, the high-ranking teams (L1) scored most of the goals during the second half, as shown in previous studies [3, 27], while the significant differences were found for the goals scored during both halves of the games. On the other hand, the analysis of the goals scored per 15 minutes of gameplay indicated the significant differences only in the second quarter of a game (15-30 min.), even though most of the goals were scored in the last 15 minutes of gameplay (75-90 min.). The other intervals may not have reached the statistical significance threshold; however, they revealed the notable effect sizes, suggesting emerging

patterns that might attain statistical significance in a more extensive dataset. Nevertheless, other studies of the Greek soccer league did not find statistically significant differences and such temporal patterns [4].

In terms of offensive play, the high-ranking teams (L1) demonstrated a possession-oriented tactical behavior and style of play, characterized by a higher number of passes, shorter pass lengths, as well as more frequent deep completions and touches in the penalty area, compared to the lower-ranking teams. As noted in previous studies, an effective use of possessions can create favorable conditions for shots and increase goal-scoring opportunities [13], while in general, a teams' ranking has been linked to various offensive PI, such as a number of goals scored, total shots, and ball possession [9, 11]. Additionally, teams with higher ball possession percentages were more likely to win, which is a trend observed also in other soccer leagues and tournaments [15].

Furthermore, higher frequency of passes, shorter pass lengths, and an increased number of deep completions and touches within the penalty area by the L1 teams were observed. This approach is in line with other studies [6, 13], according to which high-ranking teams prefer combinative attacks and tend to engage in more offensive play against weaker opponents, utilizing greater length and width of a field. Furthermore, the L1 teams' higher frequency of touches in the penalty area and the shorter passing length indicate more effective offensive penetration, which also resonates with the findings of other studies [6, 29].

Defensively, the L1 teams were more effective, conceding fewer goals and facing a reduced number of shots, which suggests an efficient defensive strategy and style of play. In contrast, the low-ranking teams (L2 and L3) tended to engage in reactive, defensive actions, as shown by a higher number of recoveries within their own defensive third, along with more interceptions, and blocked shots. This could indicate that the low-ranking teams (L2 and L3) focus on disrupting opponent's play, as shown in other studies [14].

Additionally, set plays could be a significant factor in the style of play of the high-ranking teams [14], although

studies have noted that most goals are achieved from open play [20, 27]. In the present study, the high-ranking teams significantly outperformed their counterparts in the set plays. Specifically, they predominated in taking corners, particularly in short passes after corners, and in targeting the near post and the goalkeeper's zone.

The analysis of the PI in relation to the teams' ranking provides valuable insights into tactical approaches of soccer teams. The differences found in the PI and the style of play among the different levels of soccer teams, highlight a need for adaptability and tactical flexibility, as teams sometimes need to adjust their strategies based on an opponent and match context [13]. These findings provide the valuable insights for coaches and analysts to understand the key PI that influence success in professional soccer leagues. The high-ranking teams (L1) in the Greek soccer league exhibit the distinct advantages in both offensive and defensive aspects of a game. Their strategies and tactical behavior in scoring, possession, and defensive tactics contribute significantly to their performance and the final ranking. Regarding the style of play, coaches could train their players to maintain possession under pressure, execute quick, smart, and short passes, as well as develop spatial awareness to create and exploit spaces in opponents' defense. Defensively, teams should focus on enhancing positioning, communication, and an ability to withstand high-pressure situations. Lastly, the performance of the high-ranking teams in set plays, especially in corners, underscores the importance of set play efficiency.

While this study provides valuable insights into the analyzed matches, it is important to acknowledge its limitations, notably the employment of a static rather than dynamic methodology, as in other studies [16], and the lack of consideration of the tactics and playing style of each team involved.

### Conclusions

To conclude, the analysis of the goals scored per 15 minutes of gameplay concerning the teams' rankings revealed that the L1 teams outperformed the L2 and L3 teams, particularly during the second quarter of a game (15-30 min.), although the majority of goals were scored in the last 15 minutes of gameplay. The high-ranking teams (L1) demonstrated the distinct advantages in their strategic and tactical approaches, that contributed to their performance and their final ranking. Specifically, the L1 teams demonstrated a higher number of total passes, 45+ sec. possessions, ball possession percentages, shorter pass lengths, as well as more frequent deep completions and touches in the penalty area, compared to the L2

and L3 teams. Defensively, the high-ranking teams (L1) were more effective, conceding fewer goals and facing fewer shots compared to the lower-ranking teams (L2 and L3), which tended to adopt reactive defensive strategies, with a higher number of recoveries within their own defensive third, along with more interceptions and blocked shots.

### Conflict of Interest

The authors declare no conflict of interest.

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