Original Article

Effect of team ranking on defenders' offensive performance in Greek top football league

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Abstract

Problem statement. Defenders are essential during the attacking phase of the team and are responsible for the build-up; in addition, they also support teammates. However, thus far, little attention has been given to defenders' contribution during the attacking phase of the game. **Purpose.** The aim of this study was to explore the effect of team ranking on the offensive performance of defending players in the top Greek football division. **Methods.** A total of 11 offensive indicators from 240 matches of the 2015/2016 season were analyzed. The teams were divided into four dynamic groups according to their final league position: G1 (1st to 4th position), G2 (5th to 8th position), G3 (9th to 12th position), and G4 (13th to 16th position). **Results.** The results showed significant differences in "total passes" [$\chi^2(3) = 38.697$, $p < 0.001$] and "successful passes" [$\chi^2(3) = 47.579$, $p < 0.001$] between G1 vs. G2, G3, and G4. In addition, there was a significant difference in "successful key passes" [$\chi^2(3) = 10.188$, $p < 0.05$] between G1 and G4. Multinomial regression analyses showed that statistical significant predictors of G1 compared to the reference teams of G4 were the ratios "successful passes/total passes" ($b = 0.340$, $p < 0.001$) and "goal assists/total passes" ($b = 0.524$, $p < 0.05$). **Conclusions.** The defenders of the highest-ranking teams showed a greater offensive performance than those of the rest of the teams and especially of the lowest-ranking teams. The results of this study may have practical implications on both training and player recruitment based on the team's style of playing.

Key words: match analysis, attacking indicators, playing position, soccer

Introduction

Football at the highest level has significantly evolved technically, tactically and physically in the past few years; studies have reported increasing player density, game speed and passing rates (Bradley et al., 2016; Bush, Barnes, Archer, Hogg & Bradley, 2015; Wallace & Norton, 2014). Although identifying factors that lead to success is difficult due to its complex nature, high uncertainty and multifactoriality (Gréhaigne, 2001; Lames & McGarry, 2007), many researchers have pointed out ball possession as a key performance indicator that distinguishes successful from unsuccessful teams (Armatas, Yiannakos, Zaggelidis, Papadopoulou & Fragkos, 2009; Casal, Maneiro, Ardá, Mari & Losada, 2017; Collet, 2013). Moreover, various variables have been found to affect ball possession, such as match location, quality of own team, quality of the opponent team and match status (Casal et al., 2017; Aquino, Manechini, Bedo, Puggina & Garganta, 2017).

On the one hand, a team that sustains ball possession controls the tempo of the game and on the other hand, the opposing team cannot score without possession. In a recent study, Casal et al. (2017) showed that successful teams in EURO 2016 had a greater time of ball possession but also greater possession in the middle offensive zone. To sustain ball possession in attacking zones, due to pressure of time and space from opponents, players should have the ability to accurately and successfully pass the ball over a range of distances, directions and under high pressure. This ability has been shown previously to separate top players from the rest (Lago & Martín, 2007; Mohr, Krustup & Bangsbo, 2003). In this notion, amongst other head coaches, Pep Guardiola has pointed out the significance of defenders in attacking play of his team: "*Normally defenders are strong in the air and aggressive. But we need to have a good build-up to create easy passes in the midfield*" (Perarnau, 2016). Besides, Guardiola's commitment to his approach has led him in some occasion playing midfielder players in the back-line.

Particularly, Fransen and his colleagues (2016) concluded that central midfielders and central defenders had a privileged position, which combined with their demanding tactical responsibilities, positioned them as team leaders. Furthermore, an interesting study observed different relationships of a top-class midfielder that established with his teammates during offensive play; results revealed that he established "micro-societies" in

the build-up, by interacting with central defenders in a limited area (Maneiro & Amatria, 2018). A study that analyzed FIFA World Cup 2014 revealed that external defenders together with midfielders were the most prominent players during attacking build-up play (Clemente, Martins, Wong, Kalamaras & Mendes, 2015). Additionally, Clemente and Martins (2017) concluded that central midfielders and defenders were the most prominent players in passing the ball but also that external and central defenders revealed high importance in the connectivity of the team at Champions League matches 2015-16. In a recent study of Bundesliga matches, full-backs, central defenders and central midfielders were found to run significantly less far at intensities in the 17-20.99 and 21-23.99 km/h ranges in won matches (as opposed to those drawn or lost) (Chmura et al., 2018).

In a longitudinal study of Premier League (2006–07 to 2012–13), Bush et al. (2015) investigated the position-specific evolution of physical and technical performance parameters. Thus, central defenders increased during time: total distance, high-intensity running distance, the total number of passes and pass success rate, suggesting that responsibilities with the ball have evolved. The authors proposed that although the primary duty of central defender to defend is unchanged, their offensive contribution has evolved.

To date, various studies have identified physical and technical positional profiles. Furthermore, full-backs, central midfielders and wide midfielders run greater distances at high-intensities (Bradley, Sheldon, Wooster, Olsen, Boanas & Krusturup, 2009; Di Salvo, Gregson, Atkinson, Tordoff & Drust, 2009), central midfielders and full-backs have the greatest physical capacities for intermittent running tests (Mohr, Krusturup & Bangsbo, 2003; Reilly, Bangsbo & Franks, 2000), but also complete more passes compared to other positions (Redwood-Brown, Bussell & Bharaj, 2012). Finally, Adams and his colleagues (2013) attempted to identify which ball possession indicator discriminate top versus last teams using decision tree induction at Premier League 2011-12. Authors found that the variable with the most significant contribution to the final decision tree model was the “successful short passes” made by defenders, while the third variable was “unsuccessful passes in opposition half” made by defenders. However, the study of Adams and his colleagues did not take into account all teams participating in the English Premier League rather than top four versus last four teams.

According to the above, defenders tend to play a significant role in attacking phase of the team and have the responsibility to start build-up but also to support teammates. However, to the best of our knowledge, little attention has been given so far to defenders’ contribution in the attacking phase of the game. Taking into account the above-mentioned reasons and motivations, the purpose of the present study was to identify the contribution of defenders to attacking play of their team but also to compare different league ranking teams in Greek SuperLeague 2015-16. We hypothesize that defenders of top teams will have the highest participation in attacking team’s play, compared to lower league ranking teams.

Material and Methods

Sample

Offensive actions (N=7244) of 142 defenders from all 240 matches of Greek Super League (GSL) during the 2015–2016 season were analyzed. The GSL is the top professional football league in Greece and consisted of 30 rounds played by the 16 teams that competed to win the championship and 6 rounds played by 4 teams (final ranking position 2-5) competed for European qualification while the bottom two teams were relegated. The system was a balanced schedule where each team played twice against the other teams (one at home and one away). Teams were classified by ranking according to the points won under the 3-points system (3 points for a win, 1 for a draw and 0 for a loss). Moreover, the teams were distributed into four dynamic groups according to their final league position: G1 (1st to 4th position), G2 (5th to 8th position), G3 (9th to 12th position) and G4 (13th to 16th position).

Design and procedure

The following match performance variables were obtained for each defender competing in the GSL: 1) minutes played (MIN), 2) total shots (STO), 3) shots on target (SON), 4) goals (GOA), 5) total passes (TPA), 6) successful passes (SPA), 7) assists for goal (ASG), 8) total key passes (TKP), 9) successful key passes (SKP), 10) total passes into the box (TPB) and 11) successful passes into the box (SPB). Moreover, defenders were categorized into three playing positions: 1) central defender (DC), right defender (DR) and left defender (DL). Match performance data were obtained from Instat Ltd. (<http://instatsport.com>), a Russia-based private company that analyses the performance of football teams, after permission to use the data was granted by the company. This online platform has been previously used in football research (Andersen, Krusturup, Bendiksen, Ormtoft, Randers & Pettersen, 2016; Gómez, Mitrotasios, Armatas & Lago-Peñas, 2018).

Data analysis

Data were analysed as a mean and standard deviation (SD). A univariate analysis was conducted first for each performance variable. More precisely a Kruskal Wallis test was performed and if there was a statistically significant difference a post hoc test (Mann Whitney test) was performed for each pair of the four dynamic groups (the Bonferroni correction was used, $\alpha^* = \alpha/6$). In the case of the nominal variable (defender position) a chi-square test was performed between the dynamic groups and playing position.

Finally, a multinomial logistic regression was performed with dependent variable the four dynamic groups, independent variables the playing position (reference group right defenders) and covariates “Shots on target as %

of total shots”, “Goals as % of total shots”, “Successful passes as % of total passes”, “Assists for goal as % of total passes”, “Successful key passes as % total key passes” and “Successful passes into the box as % total passes into the box”. All the assumptions of the multinomial logistic regression were met (Tabachnick& Fidell, 2007). Significance level was preserved at 5% ($p < 0.05$). The statistical analysis was performed using IBM SPSS Statistics software for Windows, version 22.0 (IBM Corporation©).

Results

Table 1 presented the differences between the four dynamic groups concerning the 11 match performance offensive variables. Results showed that there were statistical significant difference between the four dynamic groups in relation to “Total passes” ($\chi^2(3) = 38.697$, $p = .000$), “Successful passes” ($\chi^2(3) = 47.579$, $p = .000$) and “Successful key passes” ($\chi^2(3) = 10.188$, $p = .017$). However, no significant differences were found for the rest variables.

Table 1: Differences between the four dynamic groups in performance variables from the Greek Super League 2015-16.

	Dynamic groups												X ² (3)	p
	G1			G2			G3			G4				
	M	Mdn	SD	M	Mdn	SD	M	Mdn	SD	M	Mdn	SD		
MIN	1,037.6	1,120.0	617.9	1,297.6	1,383.0	693.1	1,214.0	1,266.5	801.3	1,047.8	944.5	692.4	3.262	.353
STO	5.73	4.00	5.73	5.94	5.00	4.68	4.39	2.00	5.17	4.61	2.50	5.91	5.300	.151
SON	2.24	2.00	2.34	2.23	1.00	2.19	1.44	1.00	1.84	1.50	1.00	2.24	6.479	.091
GOA	.41	.00	.83	.45	.00	.89	.28	.00	.51	.24	.00	.63	2.007	.571
TPA	54.24	55.00	9.31	43.39	45.00	8.45	39.78	40.50	10.36	42.66	42.00	6.96	38.69**	.000
SPA	44.73	44.00	9.50	32.74	34.00	7.40	29.75	31.00	8.78	32.03	32.00	4.95	47.57**	.000
ASG	.70	.00	1.05	.39	.00	.62	.39	.00	.69	.26	.00	.60	5.727	.126
TKP	.72	.50	.71	.49	.40	.45	.44	.30	.57	.34	.30	.26	4.634	.201
SKP	.40	.20	.50	.24	.10	.29	.18	.10	.30	.14	.10	.16	10.18*	.017
TPB	2.46	2.40	2.11	2.12	1.70	1.75	2.50	1.75	2.70	2.08	1.30	1.72	.238	.971
SPB	1.00	1.00	1.03	.78	.50	.85	1.00	.50	1.48	.80	.60	.79	.542	.910

Note: * $p < 0.05$, ** $p < 0.01$, Descriptive statistics: mean (M), Median (Mdn), Standard Deviation (SD)

Follow-up tests, presented in Table 2, indicated a significant difference in “Total passes” and “Successful passes” between G1 vs. G2, G3 and G4. Also, there was a significant difference in “Successful key passes” between G1 and G4.

Table 2: Pairwise comparisons.

	G1 vs. G2	G1 vs. G3	G1 vs. G4
TPA	U=245.500. $p=.000$	U=175.000. $p=.000$	U=224.000. $p=.000$
SPA	U=184.500. $p=.000$	U=143.000. $p=.000$	U=157.000. $p=.000$
SKP	U=450.000. $p=.122$	U=446.500. $p=.014$	U=432.500. $p=.003$
	G2 vs. G3	G2 vs. G4	G3 vs. G4
TPA	U=438.000. $p=.131$	U=525.000. $p=.440$	U=586.000. $p=.288$
SPA	U=452.500. $p=.184$	U=544.500. $p=.591$	U=583.000. $p=.274$
SKP	U=490.000. $p=.378$	U=485.500. $p=.194$	U=657.500. $p=.765$

Note: U: the value of Mann Whitney test

According to Table 3, there was not a statistically significant relationship between the dynamic groups (G1, G2, G3, G4) and the playing position (DC, DR, DL) [$\chi^2(6) = 1.695$, $p = .946$].

Table 3: The relationship between the dynamic groups and the playing position.

Dynamic groups		Playing position		
		DC	DL	DR
G1	N	17	7	13
	%	25.0%	20.6%	32.5%
G2	N	16	8	7
	%	23.5%	23.5%	17.5%
G3	N	17	9	10
	%	25.0%	26.5%	25.0%
G4	N	18	10	10
	%	26.5%	29.4%	25.0%

Note: DC= central defender, DL= left defender, DR= right defender

Multinomial logistic regression was performed to model the relationship between the predictors and the final team position in the four groups. The addition of the predictors to a model that contained only the intercept significantly improved the fit between model and data, $\chi^2(24, N = 12) = 52.263$, Nagelkerke $R^2 = .409$, $p < .01$.

Table 4: Multinomial Logistic Regression

					95% Confidence Interval for OR	
	B	Wald (df=1)	p	OR	Lower Bound	Upper Bound
G1						
Constant	-27.673	13.701	.000			
SON % of STO	.011	.925	.336	1.011	.989	1.033
GOA % of STO	.000	.000	.992	1.000	.936	1.068
SPA % of TPA	.340**	14.241	.000	1.405	1.178	1.677
ASG % of TPA	.524*	5.913	.015	1.689	1.107	2.577
SKP % TKP	.007	.453	.501	1.007	.986	1.029
SPB % TPB	-.020	.675	.411	.980	.935	1.028
DC	-.425	.216	.642	.654	.109	3.923
DL	.828	.775	.379	2.289	.362	14.473
Base = DR						
G2						
Constant	3.004	.385	.535			
SON % of STO	-.002	.034	.854	.998	.980	1.017
GOA % of STO	.012	.190	.663	1.012	.958	1.070
SPA % of TPA	-.033	.275	.600	.968	.856	1.094
ASG % of TPA	.120	.337	.562	1.128	.752	1.692
SKP % TKP	-.003	.065	.800	.997	.978	1.018
SPB % TPB	-.019	.701	.402	.982	.940	1.025
DC	-.173	.046	.830	.841	.173	4.092
DL	.893	1.225	.268	2.442	.503	11.859
Base = DR						
G3						
Constant	3.746	.597	.440			
SON % of STO	-.008	.583	.445	.992	.972	1.012
GOA % of STO	.038	2.233	.135	1.039	.988	1.092
SPA % of TPA	-.043	.466	.495	.958	.847	1.084
ASG % of TPA	.262	1.750	.186	1.300	.881	1.917
SKP % TKP	-.001	.015	.901	.999	.979	1.019
SPB % TPB	-.023	1.045	.307	.978	.936	1.021
DC	-.040	.002	.960	.960	.197	4.674
DL	.796	.927	.336	2.218	.438	11.222
Base = DR						

The overall percentage of correct classifications was equal to 38.0% and 78.6% for G1. Statistical significant predictors of G1 compared to the reference teams of G4 were “Successful passes % of total passes” ($b = .340$, $p < .001$) and the “Assists for goal % of total passes” ($b = .524$, $p < .05$). For 1% increase of the “Successful passes % of total passes” then it is more likely by 1.405 times a team to belong in G1 compared to G4. Also, for 1% increase of the “Assists for goal as % of total passes” then it is more likely by 1.689 times a team to belong in G1 compared to G4. The remaining two dynamic groups (G3, G4) did not present any statistically significant difference versus G4.

Discussion

The purpose of the present study was to explore the effect of team ranking on the offensive performance of defending players in the Greek Super League. Our study observed how defenders from the highest-ranked teams performed greater quantity and more successful passes than the ones from the rest of the teams, as well as more

key successful passes and assists for goal as a percentage of total passes than defenders from the lowest-ranked teams. Also, our findings demonstrated that performing a greater percentage of successful passes from the defenders increased the odds of belonging to the top-ranked teams compared to the bottom-ranked teams.

Previous literature observed how defenders had a higher number of aerial challenges, and clearances than other positions (Dellal et al., 2011; Taylor, Mellalieu & James, 2013), highlighting the importance of the defensive actions within their role in the team. However, recent studies observed that during the last few years, football increased the number of passes, the passing accuracy and passing tempo (Barnes, Archer, Hogg, Bush & Bradley, 2014; Konefal, Chmura, Zajac, Chmura, Kowalczyk & Andrzejewski, 2019), as well as the passes, performed increased by a greater extent for central defenders and central midfielders, compared to full-backs, wide midfielders and attackers (Barnes et al., 2014). This fact suggests that defenders play an important role in the offensive style of play of teams, and counter to previous knowledge that defenders served purely defensive tasks, their offensive contribution has greatly increased.

Regarding the influence of the team ranking on passing performance, previous studies have observed how top-ranked teams had more ball possession (Bradley, Lago-Penas, Rey & Sampaio, 2014; Collet, 2013; Kempe, Vogelbein, Memmert & Nopp, 2014) more short passes and successful passes (Rampinini, Impellizzeri, Castagna, Coutts & Wisloff, 2009), as well as a higher number of entry, passes in the final third than the bottom teams (Yang, Leicht, Lago-Penas & Gómez, 2018) in different competitions. As for the role of the defenders, Adams et al. (2013) observed how the main variable that differentiated the top and the bottom teams was the mean frequency of successful short passes made by the defenders in the English Premier League. Also, Konefal et al. (2019) observed how the number of passes performed by central defenders increased in matches won in German Bundesliga. Our study agrees with Adams et al. (2013) and Konefal et al. (2019) regarding the higher quantity of passes and successful passes registered by defenders from top-ranked teams. Nevertheless, our investigation also found that defenders of high-ranked teams can perform more key passes and more assists than those of lower-ranked teams, what demonstrates the importance of these players not only to maintain the ball possession but also to help the team progress and break lines (key passes) and create goal-scoring opportunities (assists).

These findings may be due to the higher technical and tactical skills of the defenders of these teams. However, this can also be due to the tactical style of play of high-ranked teams, that normally play against lower-ranked opponents that defend closer to their goal employing compact systems, what would increase the necessity of breaking the first lines of the opponent's defensive organization, requiring the defenders not only to perform more passes but also more key and successful ones.

This research has several limitations. On one hand, the fact of just analyzing quantitative data limits the possibility of capturing the complexity and interactive nature of soccer. On the other hand, this study only evaluated the influence of the team ranking on offensive performance, while there is evidence that other contextual variables such as home location, quality of opposition and match status also influence the passing sequences of professional soccer teams. Finally, this study has only analyzed the Greek Super League, so the results cannot be generalized for the rest of the competitions and contexts. According to these limitations, future research should include the analysis of the interactive effects of several contextual variables on the tactical performance in defenders. Also, it would be interesting to use a mixed-methods approach to combine quantitative data with qualitative information to describe the tactical behaviours that differentiate the top and bottom teams in different competitions.

Conclusions

The results of this study have implications for player training and recruitment. Our findings highlight the importance of the build-up phase within the offensive style of play of the teams and therefore, the relevant role of defenders in the achievement of attacking success. Hence, the fact of performing key passes and successful passes from the defensive unit would allow teams to break opponent lines and advance towards offensive positions with space and time to create goal-scoring opportunities. In this vein, it is crucial to identify players who can both fit system and style of play of the recruiting club. Teams should acquire defenders that could serve multi-tasking, and train them not only in improving their defensive behaviour but also their ability to get actively involved in the attacking process. Professional soccer coaches should consider the importance of the offensive role that defenders play within the team and design training sessions to improve the build-phase to achieve more success in the competition. Finally, youth coaches should educate defending players, taking into account the updated position-based characteristics. Concluding, defenders from the highest-ranked teams presented a greater offensive performance than the rest of the teams. This fact indicates that defenders play an important role in the attacking process and success of professional soccer teams in the Greek Super League.

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Conflict of interest. Authors state no conflict of interest.

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