

## Offensive versus Defensive Football: What Drives Success in the UEFA Champions' League?

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### Abstract

Assessing the relative contribution of offensive and defensive football to success in the UEFA Champion's League, data related to the 513 clubs that have taken part to competition between 1955 and 2019 are analyzed using regression models. After controlling for the number of participations and teams playing in one of the four major European leagues –La Liga, Premier League, Serie A and Bundesliga– it is found that both offensive and defensive football can lead to success in the competition. Indeed, offensive and defensive football both have a significant impact on the number of titles won and their relative contributions are found to be equal. Both tactical approaches also have a significant impact on the number of matches won in the competition; even though the relative contribution of offensive football is bigger. Furthermore, only offensive football is found to have a significant impact on the number of points earned in the competition. Finally, it is found that poor offensive and poor defensive football both have a significant impact on the number of matches lost in the Champion's League; with the relative contribution of a poor defensive performance being more pronounced.

**Keywords:** Soccer, Offensive strategy, defensive strategy, UEFA Champions' League

### INTRODUCTION

Since the first World Cup held in 1930, football has undergone a series of substantial transformations on and off the pitch: firstly, players have become stronger, faster and more technical. Secondly, tactics have greatly evolved; in many respect, they have even being revolutionized. Finally, in the wake of globalization, the sporting and financial rewards associated with football games have reached unprecedented levels (FIFA, 2017). Thus, nowadays, teams are competing to attract the most gifted players, the wisest tacticians and the wealthiest sponsors.

On the tactical front, modern football is characterized by a reduced amount of space around the ball and an increased pressure on the person in possession; with that increased pressure coming from both the opposing team and time (Schreiner and Elgert, 2012). As such, the tactical organization of a team has become a fundamental determinant of its performance (Carling et al., 2005; Costa et al., 2009) and football managers are left to decide on the appropriate formation and playing style of their team. However, the overall balance of the team and its behavior in transitions are often overshadowed by the trade-off between offensive and defensive approaches of the match.

Schreiner and Elgert (2012) advocate for offensive football and argue that the most important moment in a football match is the moment when a goal is scored. They even recommend ball possession as a

prerequisite for successful attacking strategies. Knudsen and Andersen (2015) and Cobanoglu and Terekli (2018) see things from another perspective. They highlight the importance of a good defense and argue that by preventing the opposition to score, the defending team enhances its chances to win the match.

The debate related to the appropriate tactical approach have led to the development of performance analysis. The aim of this ex post analysis is to discover the strengths and weaknesses of a tactical approach so as to develop the former and mitigate the latter (Lago, 2009; Lago-Penas and Dellal, 2010). Taking advantage of contemporaneous technological developments, it is now possible to measure a wide range of parameters –ball possession, goals scored, expected goals, distance covered, passes, shots on target, tackles, etc– and collect tactical data from both training and competitions (Navarro, 2018). Thus, previous studies have assessed the effectiveness of football tactics by focusing on goals scored (Acar et al., 2009; Barreira et al., 2013), shots (Ensum et al., 2005), goalkeeper’s saves (Collet, 2013) and ball possession (Bell-Walker et al., 2006; Casamichana et al., 2013).

In order to identify performance indicators that discriminate winning from drawing and losing sides in the UEFA Champion’s League, Lago-Penas et al. (2011) analyzed 288 group stage matches between the 2007-2008 and 2009-2010 seasons. The ANOVA used shows that on average, the following indicators are significantly higher for winning teams: total shots, passes, shots on target, successful passes, effectiveness and ball possession. Moreover, their discriminant analysis reveals that crosses, shots on target, ball possession, quality of the opposition and venue of the match are parameters that discriminate winning from drawing and losing sides.

Almeida et al. (2014) assessed the effect of match status, match location and quality of opposition on regaining possession by focusing on 28 matches of the knockout stage of the 2011-2012 edition of the Champion’s League. Their multinomial logistic regression analysis reveals that the aforementioned parameters affect the way teams perform defensively. They find that successful teams are more effective in defending higher on the pitch and conclude that high, intense and organized defensive pressure is associated with success in modern football.

Building upon the existing literature, this paper aims at assessing the relative contribution of offensive and defensive tactics to success in the UEFA Champion’s League. Data related to the 513 clubs that have taken part to competition between the 1955-1956 and 2018-2019 seasons are collected from the UEFA (2019). The data are analyzed using regression models in which the number of participations to the competition and a dummy variable accounting for the first four leagues in the UEFA ranking are included as control variables. The remainder of the paper is structured as follows: Section 2 presents the data and the methodology; the results are presented and discussed in Section 3 and Section 4 respectively; while, Section 5 concludes the paper.

## **METHOD**

Assessing the relative contribution of offensive and defensive tactics to success in the UEFA Champion’s League, data related to the 513 clubs that have taken part to competition between the 1955-1956 and 2018-2019 seasons are collected from the UEFA (2019) and analyzed using regression models. The number of goals scored and the number of goals conceded are used as performance indicators for offensive and defensive tactics respectively. The number of titles, matches won as well as points earned are used as alternative proxies for success in the competition.

**Table 1. Description of variables**

<b>Variables</b>	<b>Definition</b>	<b>Source</b>
Participations	Number of participations	UEFA
Titles	Number of titles	UEFA
Wins	Matches won	UEFA
Points	UEFA points	UEFA
Losses	Matches lost	UEFA
Goals_For	Goals scored	UEFA
Goals_Against	Goals conceded	UEFA

Two control variables are added to the models because they are suspected to alter the effect of tactics – offensive or defensive– on match outcomes. The first control variable is the number of participations to the competition; it is assumed that the experience gained through multiple participations leads to better match outcomes, irrespective of the tactics implemented. The second control variable is a dummy variable taking the value 1 if the club plays in one of the four major European leagues –Spanish La Liga, English Premier League, Italian Serie A and German Bundesliga– and 0 elsewhere. These four leagues sitting at the top of the UEFA ranking account for 78% (50 out of the 64) of Champion’s League titles. It is therefore assumed that a club playing in one of these four leagues is more likely to have success in the competition.

**Table 2. Characteristics of the variables**

<b>Variables</b>	<b>Obs.</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Participations	513	5.604	7.317	1	49
Titles	513	.132	.851	0	13
Wins	513	10.982	25.518	0	259
Points	513	28.146	62.317	0	592
Losses	513	10.972	16.024	0	98
Goals_For	513	39.730	88.972	0	957
Goals_Against	513	39.715	60.691	0	468

Finally, in order to check the robustness of the findings related to the abovementioned analyses, the relative contribution of offensive and defensive tactics to failure in the Champion’s League is analyzed by taking the number of matches lost in the competition as a performance indicator for failure. All the variables used, their definition and some descriptive statistics are reported in Table 1 and Table 2

## **RESULTS**

The impact of offensive and defensive tactics on Champion’s League titles is estimated and reported in Table 3. The table shows that goals scored are positively and significantly associated with Champion’s League titles. Conversely, goals conceded are found to be negatively and significantly associated with Champion’s League titles. Furthermore, it is found that goals for and goals against have the same relative contribution to Champion’s League titles as the coefficients associated with those two performance indicators are equal in absolute terms.

As for the number of participations, it is found to have a positive and significant effect on Champion’s League titles as expected meanwhile the variable related to the four major European leagues has a negative and insignificant effect on Champion’s League titles.

**Table 3. Estimated impact of offensive and defensive football on UEFA Champions' League titles**

	<b>Coef.</b>	<b>Std. Err.</b>	<b>P &gt;   t  </b>
Participations	0.026**	0.010	0.009
Big_4	-0.099	0.058	0.091
Goals_For	0.016**	0.001	0.001
Goals_Against	-0.016**	0.001	0.001
Cons.	0.007	0.026	0.767
F (4, 508)	387.78		
Prob > F	0.001**		
Obs.	513		
Adj. R <sup>2</sup>	0.751		

Note: \*\* denotes significance at the 5% level.

Focusing on matches won in the Champion's League, Table 4 shows that goals scored and goals conceded both have a significant impact of matches won; with the effect of goals scored being positive and that of goals conceded being negative. These findings are in line with those reported in Table 3 in spite of the fact that this time around; the incidence of goals scored is bigger than that of goals conceded. Furthermore, the incidence of the number of participations is no more significant meanwhile playing in the Big 4 is significantly associated with matches won the competition.

**Table 4. Estimated impact of offensive and defensive football on matches won in UEFA Champions' League wins**

	<b>Coef.</b>	<b>Std. Err.</b>	<b>P &gt;   t  </b>
Participations	0.088	0.053	0.101
Big_4	0.830**	0.312	0.008
Goals_For	0.301**	0.003	0.001
Goals_Against	-0.036**	0.008	0.001
Cons.	-0.162	0.142	0.254
F (4, 508)	16366.87		
Prob > F	0.001**		
Obs.	513		
Adj. R <sup>2</sup>	0.992		

Note: \*\* denotes significance at the 5% level.

Taking into consideration the points earned as a performance indicator for success in the Champion's League, Table 5 shows that goals scored have a positive and significant effect on the points earned while the effect of goals conceded is insignificant. It is also found that the number of participations and playing in the Big 4 is positively and significantly associated with success in the competition.

Finally, checking the robustness of the above findings, the estimated effects of offensive and defensive tactics on failure in the Champion's League are computed and reported in Table 6. These results shows that goals scored are negatively and significantly associated with matches lost while goals conceded have a positive and significant impact on failure in the Champion's League. It is also found that in absolute terms, the impact of goal conceded is bigger than that of goals scored. As these findings support the ones reported in Table 3, Table 4 and Table 5, they also confirm the robustness of those results.

**Table 5. Estimated impact of offensive and defensive football on points earned in UEFA Champions' League**

	<b>Coef.</b>	<b>Std. Err.</b>	<b>P &gt;   t  </b>
Participations	0.423***	0.157	0.007
Big_4	3.199***	0.909	0.001
Goals_For	0.670***	0.009	0.001
Goals_Against	-0.013	0.024	0.591
Cons.	-0.856**	0.414	0.040
F (4, 507)	11447.14		
Prob > F	0.001***		
Obs.	512		
Adj. R <sup>2</sup>	0.989		

Note: \* Denotes significance at the 10% level; \*\* denotes significance at the 5% level; and \*\*\* denotes significance at the 1% level.

As for the number of participations, it is found to have a positive and significant impact on failure in the Champion's League while playing in the Big 4 does not have a significant impact on the number of matches lost in the competition.

**Table 6. Estimated impact of offensive and defensive football on matches lost in UEFA Champions' League**

	<b>Coef.</b>	<b>Std. Err.</b>	<b>P &gt;   t  </b>
Participations	0.526**	0.050	0.001
Big_4	0.406	0.294	0.167
Goals_For	-0.037**	0.002	0.001
Goals_Against	0.249**	0.007	0.001
Cons.	-0.436**	0.113	0.001
F (4, 508)	7208.09		
Prob > F	0.000**		
Obs.	513		
Adj. R <sup>2</sup>	0.982		

Note: \*\* denotes significance at the 5% level.

## ***DISCUSSION and CONCLUSION***

The above findings suggest that offensive teams –teams scoring more goals– and defensive teams – teams conceding fewer goals– were both more likely to win the UEFA Champion's League title. Furthermore, the coefficients associated with offensive and defensive football are found to be equal.

Given that the aim of a football match is to score more goals than the opposition, playing offensive football could enhance the odds of winning titles. Historically, this has been the case in the Champion's League with teams like Ajax in the early 1970s and AC Milan in the late 1980s. The focus on offensive tactics has even become more pronounced in the modern era of the competition as winning teams are now known for their attacking trios like Messi, Suarez and Neymar for FC Barcelona, the Benzema, Bale and Cristiano Ronaldo for Real Madrid and Salah, Firmino and Mane for Liverpool FC.

Conversely, the aim of football could also be to concede fewer goals than the opposition. In this respect, Italian teams are well known for their emphasis on defensive tactics as they often build their entire team structure on a strong defensive chain: the *catenaccio*. The Inter Milan team that won the Champion's League in 2010 under the leadership of Mourinho is a good example of the effectiveness of sound defensive tactics.

The results reported in Table 3 also suggest that the more a team played in the Champion's League, the more that team increased its chances of winning the competition. Therefore, it is no surprise that Real Madrid having the highest number of participations (49) is also the most crowned team in the competition (13 titles). Finally, Table 3 suggests that playing in the Big 4 did not increase the chances of a team to win the Champion's League. This counter-intuitive finding could be due to the fact that although these four leagues account for over 78% of Champion's League titles, the titles have been won by a limited number of clubs: 2 in La Liga, 5 in the Premier League, 3 in the Serie A and 2 in the Bundesliga.

The findings reported in Table 4 are in line with those in Table 3 as both offensive and defensive teams were more likely to win matches in the Champion's League. Nevertheless, the incidence of offensive tactics was greater. That is, in spite of the fact that offensive and defensive tactics both contributed to wins in the competition, the contribution of offensive strategies was more pronounced.

This time around, the number of participations did not increase the odds of winning because even a new comer can win a match in the competition. As for the significant effect of playing in the Big 4, it could be explained by the competitiveness of those leagues. Indeed, the Big 4 often offer Champion's League-level matches to their clubs; therefore, inciting them to raise, maintain and be used to high levels of performance. As such, a match opposing Liverpool FC to Manchester City, Real Madrid to FC Barcelona or Bayern Munich to Borussia Dortmund requires the same level of intensity, concentration and performance as a knockout stage match in the Champion's League.

The results reported in Table 5 support the findings reported in Table 4: both offensive and defensive strategies did help a team earn points in the Champion's League; even though offensive tactics were more effective. Furthermore, the more a team played in the competition, the more the team was likely to earn points. Finally, teams from the four major European leagues were more likely to earn points in the Champion's League.

The robustness of the above findings is tested in Table 6. The results suggest that both poor offensive and defensive performances significantly increased the odds of losing a match in the Champion's League; thus, confirming the previous findings. Furthermore, these odds are not mitigated by the number of participation or playing in the Big 4.

Assessing the relative contribution of offensive and defensive tactics to success in the UEFA Champion's League while controlling for the number of participations and teams playing in one of the four major European leagues, it is found that both tactical approaches can lead to success in the competition. Indeed, offensive and defensive football both have a significant impact on the number of titles won and their relative contributions are found to be equal. Both tactical approaches also have a significant impact on the number of matches won in the competition; even though the relative contribution of offensive football is bigger. Furthermore, only offensive football is found to have a significant impact on the number of points earned in the competition. Finally, it is found that poor offensive and poor defensive football both have a significant impact on the number of matches lost in the Champion's League; with the relative contribution of a poor defensive performance being more pronounced.



*In fine*, finding that the relative contribution of offensive football to success in the Champion's League is greater than that of defensive football is no surprise for as argued by Navarro (2018), compared to other invasion games like handball, hockey or basketball, football is characterized by fewer goals. Thus, victory in football is primarily secured by scoring goals; more goals than the opposition.

However, goals are flawed performance indicators because a football match takes place all over the pitch and not just on the goal line. The beauty of the game and its tactical refinements cannot be accurately assessed in terms of goals only. Thus, future studies should pay attention to other performance indicators like ball possession or passing accuracy. Some of those indicators could even be combined to create a synthetic performance indicator taking into account different aspects of the game from distances covered, defensive tackles and passing accuracy to successful dribbles, shot accuracy and goals. Furthermore, a particular attention should be paid to team formations, depth of the squad, turnovers and club tenure.

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