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JEL Codes:

Keywords: football manager dismissals, Team performance, Exact-matching,
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Within-season dismissals of football managers: evidence from the French Ligue 1

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Abstract

There have been many studies of the impact of manager turnover on club performance, especially in European leagues. The methodology used and the measures for performance do not seem to affect the results of the different studies. However, studies using a control group have generally had inconclusive results (Scelles and Llorca, 2019).

Our paper examines the impact of within-season manager change on club performance using information from the *French Ligue 1* over the period 1998-2018. The clubs that change their manager have different characteristics from clubs that do not. Some may be observed (as points before dismissal), and others remain unobservable in the data. We use an empirical method that takes observable differences between clubs into account (through exact matching) and corrects for unobserved characteristics (through difference-in-differences).

Our results show that the overall effects of a change of manager on team performance are insignificant, except in the short term where they are positive and statistically significant for the majority at the 10 % level. Decomposing between home and away games, the effect is only positive and significant for home games, suggesting that this would be more the consequence of fan pressure (through satisfaction with a board decision) than any difference in quality between the old and the new manager.

Keywords: football manager dismissals, Team performance, Exact-matching, French Ligue 1.

1. Introduction

The impact of the individual leadership of a CEO on the performance of a company has been widely discussed in the literature, but the effect of any one CEO remains indefinite: very strong for some companies, negligible for others (Arnulf *et al.*, 2012). In football, the analysis of "leadership" involves the impact of a manager on his team's results. Here again, there are mixed views.

Kuper and Szymanski (2014) state that managers have very little influence on the performance of their players: "*They add so little value that it is tempting to think that they could be replaced by their secretary or even a teddy bear...*". They rely for this view on the efficiency of the market for footballers' salaries, which they say explains 90% of the dispersion of league rankings. The impact of the manager would be part of the unexplained residual 10%, along with other factors (physical preparation, diet, etc.). Kuper and Szymanski think that the vision of a providential manager (Alex Ferguson, Arsène Wenger) is football's version of the "great man theory of history", linking historical changes to certain great figures. However, Kuper and Szymanski note that this theory has been rejected by historians for decades. The role of the manager is symbolic, closer to a communicator than to an actor in his team's victories: "*...closer to the queen...than to a prime minister*".

However, this is far from being the opinion of Anderson and Sally (2014), who draw on recent literature regarding the importance of the CEO in corporate results. Their critique of Kuper and Szymanski is multifaceted. The first concerns the level of correlation, which is much lower than the 90% put forward by the two authors: Anderson and Sally's estimate depends on the period, the method of calculation and the number of leagues taken into account. Some figures suggest the dispersion explained by differences in wage bills is as little as 60%. The

correlation is strong but leaves more room for other factors, including the leadership of the manager. The second criticism relates to the fact that the manager's salary is part of the clubs' wage bill, and that the richest teams pay more than the others. Finally, player salaries, while a relatively efficient market, are an imperfect measure of player talent, which also depends on the talent of their managers.

An alternative way to test the hypothesis of the importance of the manager on their team's performance is to measure the impact of a change of manager on the club's performance.

Owners of professional soccer clubs commonly sack the manager when the team persists in performing poorly. This practice has become more and more common, and the turnover of managers has even accelerated considerably in the past few decades (d'Addona and Kind, 2014). In early 2010 the average tenure of football managers in the *English Premier League* was just under a year and a half (Bridgewater, 2010); it is approximately the same in the *French Ligue 1* in 2020 (53 games, tenure between 16 and 17 months).

The two main reasons for dismissing a manager are to improve the direction given to players, a new strategy and/or team changes; and improved motivation of the same players before and after play. In other words, the change of manager is likely to create a psychological shock in the players that should improve team performance. However, De Paola and Scopa (2012) suggest other reasons. Club boards may "*overestimate their own ability to undertake optimal replacement decisions, or as suggested by the scapegoating theory, firing the coach may represent a convenient tool for owners in order to placate frustrated stakeholders and supporters and displace blame for the poor performance away from themselves*".

There have been many studies addressing the impact of manager turnover on club performance, in European leagues in particular. Views diverge in the empirical literature but there is general support for the view that it makes little difference to performance. The

methodology used and the metric for performance do not appear to relate directly to the results of the different studies. However, studies using a control group – i.e. clubs that do not change their managers and have the “same” characteristics as clubs that change – more often come to inconclusive results (Scelles and Llorca, 2019). The challenge in analyzing manager change is an econometric one. Using a control group allows the researcher to control for the problem of any “regression to the mean”, but not for endogeneity. Even if one uses a control group, the act of firing a manager is not random, since the decision to dismiss is made following deteriorating results, so that simple difference-in-differences estimators are not appropriate.

Our paper examines the impact of within-season manager change on club performance using information from the *French Ligue 1* over the period 1998-2018. Clubs that change their manager have different characteristics from clubs that do not. Some of these characteristics may be observed (the number of points before dismissal), and others remain unobservable. We use an empirical method that takes observable differences between clubs into account (through exact matching) and corrects for unobserved characteristics (through difference-in-differences). The aim is to identify the causal effect of manager change (whether it is observable or not).

Our results show that overall effects of manager change on team performance are insignificant, except in the short term (after five games) where they are positive and statistically significant in the majority at a 10 % level. Decomposing between home and away games, the effect is only positive and significant for home games, suggesting that it is more result of fan pressure (through their satisfaction with the board decision) than any difference in quality between the old and the new manager.

The article is organized as follows: Section 2 presents the empirical evidence from published studies. Section 3 presents the data and some descriptive statistics. Section 4

describes our methodology for estimating the effects of manager change on team performance. Section 5 presents some new results before drawing some conclusions in our last Section.

2. Literature Review

We have used 29 studies from 1997 to 2019 whose effects have been tested¹ that deal with a change of football manager: 17 sampling the big five (England, Germany, Italy, Spain and France); 10 sampling other European countries (Belgium, Denmark, The Netherlands, Portugal, Austria and Norway); and two sampling South American countries (Argentina and Colombia). The initial conclusion of all these studies is that the results are not homogeneous. Seven studies analyzing the impact of a manager change on team performance conclude that there is a negative and significant effect; twelve conclude there is no significant effect; six conclude that there is a positive and significant effect; and four are non-committal.

Contrasting results are found within countries for which there are several studies: For the *Bundesliga*, four different studies (Salomo & Teichmann, 2000; Wagner, 2010; Heuer, *et al.*, 2011; Muehlheusser, Schneemann & Sliwka, 2016) produce four different results. For the English Premier League, the seven reported studies (Poulsen, 2000; Dobson & Goddard, 2011; Audas, Dobson & Goddard, 2002; Hughes, Hughes, Mellahi & Guermat, 2010; Flint, Plumley & Wilson, 2014; Besters, Van Ours & Van Tuijl, 2016) also give different results, but none of them conclude that the effect of manager change is positive. For the Dutch Eredivisie, four different studies (Bruinshoofd & ter Weel, 2003; Koning, 2003; ter Weel, 2011; Van Ours & Van Tuijl, 2016) mainly conclude that the effects are insignificant.

¹ Some studies are reported in Scelles & Llorca, but effects are not really tested: see Audas, Dobson & Goddard (1997) and Bridgewater (2010).

The exception is Spain (de Dios Tena & Forrest, 2007; González-Gómez et al., 2011; Lago-Peñas, 2011) where firing the manager has a rather a positive effect on club performance. However, the three Spanish studies only compare team performance before and after a manager change, without introducing a control group. Two more studies on the Big 5 (De Paola & Scoppa, 2012 with Italian data; and Scelles and Llorca, 2019 with French data) also conclude that manager change has no effect on team performance.

Bryson et al. (2018), the only study using data from four different countries, also focus on the big 5 (France, Germany, Italy and Spain). The originality of their results is that, whatever the methodology used, i.e. traditional econometrics and matching methods, they find a positive effect on team performance of manager change. As observed in the literature, these results tend to contrast with those presented by other studies.

The remaining studies focus on the five remaining European countries (Balduck, Buelens & Philippaerts, 2010; Balduck, Prinzie & Buelens, 2010; Wirl & Sagmeister, 2008; Madum, 2016; Arnulf, *et al.*, 2012; Maximiano, 2012), and on the two south American countries (Flores, Forrest & de Dios Tena, 2012; Giraldo, Mendoza, Rosas & Tellez, 2013). Only one of these studies finds a positive effect on home games, the remainder identifying either insignificant or negative effects from the dismissal of a manager.

While the methodology used and the measure of performance do not explain the variation in these results, studies using a control group – clubs that do not change their managers having the “same” characteristics as clubs that change – more often reach the conclusion that the effect is insignificant (Scelles and Llorca, 2019). The difficulty in relying on a methodology that does not use a control group is that manager dismissal is a decision taken by the club owners, and is therefore not random: dismissals are endogenous with respect to team performance. One way to deal with endogeneity and identify the causal impact of manager

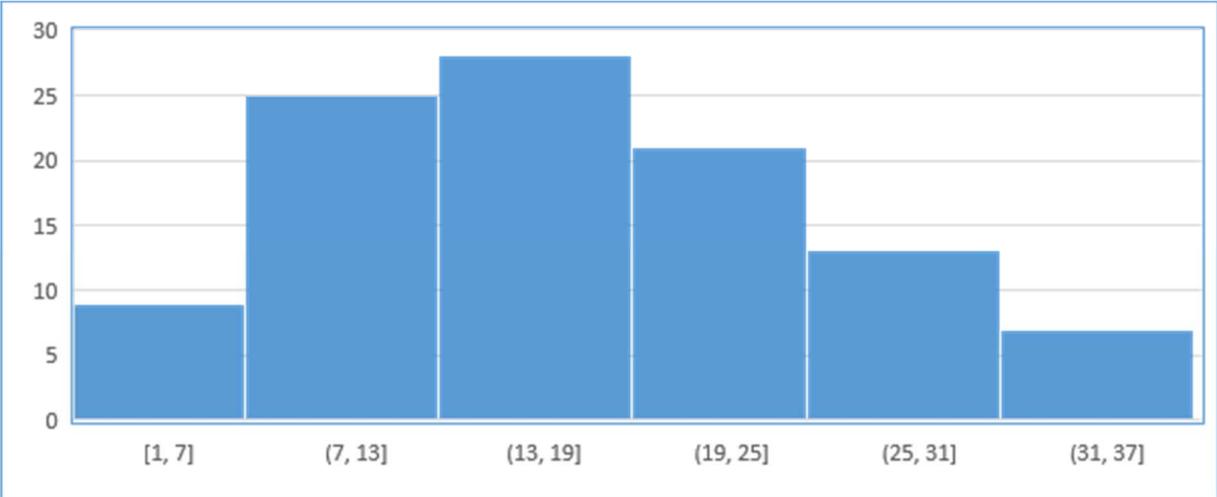
changes on team performance is to use a matching approach. This creates counterfactual sequences of games where teams that do not experience a manager change have similar characteristics to those sequences of games leading up to a manager change.

3. Data and descriptive evidence

We collected our data from two internet sources: the French football professional League website (*Ligue de Football Professionnelle, lfp.fr*) and the *footballdatabase.eu* website. Our data set consists of all the games played in the French *Ligue 1* from the season 1998/1999 to the season 2017/2018. There are 4 seasons with 18 teams and 16 seasons with 20 teams (392 teams-seasons observations and 7304 games). So that we can distinguish between dismissals and resignations we only focus on within-season movements, which are all assumed to be dismissals. During the 20 observed seasons 103 managers were dismissed, 5.2 per season on average (this corresponds to 94 team-season changes). These figures are very close to those found in previous papers (4.7 for the French *Ligue 1* in Scelles and Llorca, 2019; Van Ours and Van Tuijl, 2016) and slightly lower than in other European football leagues: 6.6 in the Belgian *Jupiler League*; 5.6 in the English *Premier League*; 6.6 in the German *Bundesliga*; 8.4 in the Italian *Serie A*; 6.7 in the Spanish *La Liga* (Van Ours and Van Tuijl, 2016). The average for manager dismissal is lower only in the Netherlands, (4.2). 32 teams (out of 39) experienced at least one dismissal during a season. Other descriptive results suggest that managers are dismissed when their team is ranked 16th, following a home defeat in 57% of the cases and on average at mid-season. Figure 1 shows the timing of dismissals as the season progresses. Time elapsed is measured in completed games, even if the fourth first seasons observed are shorter because there were 18 teams in the French *Ligue 1* (34 games per team). Within season

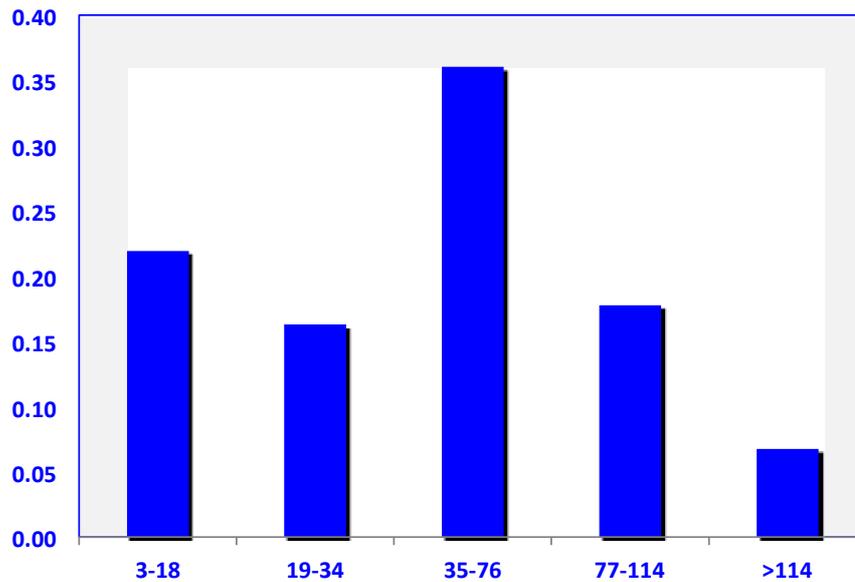
dismissals tend to peak in mid-season, just before the winter break. It appears that clubs reassess their prospects during the winter break and are more likely to fire their manager at this time than at other points in the season. Around 28% of managers are fired between the 13th and 19th matchday and almost 75% between the 7th and 25th.

Figure 1: Histogram of managers dismissed, by elapsed period (match days)



During the observed period we counted 262 "spells" of managing (counting a spell as more than two games per team). The average managing spell is 53 league 1 games (Figure 2): 40% of spells last less than one season, one-third of the spells last between one season and two seasons, and a quarter more than two seasons.

Figure 2: Distribution of managing spells



A simple descriptive way to observe the effect of manager change is to check whether teams are relegated or not at the end of the season. Table 1 shows the number of teams in our dataset that were relegated after a change of manager: Over the 1998-2018 period, 24% of teams changed their manager, and about one-third of such teams are relegated at the end of the season. Only 9% of teams that did not change their manager are relegated at the end of the season. A Khi-2 test shows that manager dismissals are not independent, and result in a high probability of being relegated ($F=38.9, p<0.0001$). Obviously, a team that changes a manager does not look like a team that does not do so, according to various characteristics and, in particular, in terms of the trend before the change of manager.

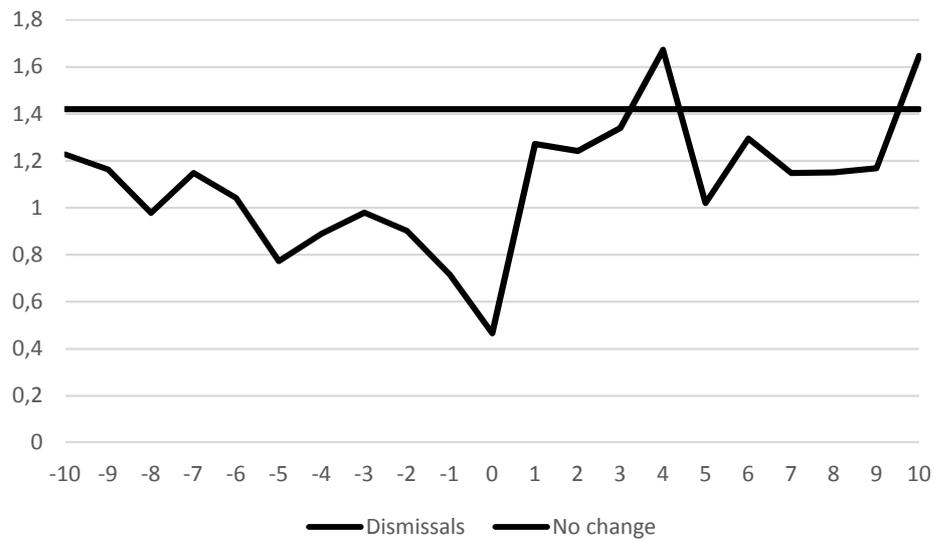
Table 1: Manager Change and relegation at the end of the season

Relegation	Manager change		Total
	No	Yes	
No	272	61	333
Yes	26	33	59
Total	298	94	392

Throughout this paper we measure performance by the number of points won by teams². On average each season, a team with at least one manager dismissal wins 1.14 point per game, and a team without any dismissal wins 1.42 point. Figure 3 shows team performance (points per game) from 10 games before a manager change to 10 games after. The horizontal line indicates teams that do not change their manager and equals 1.42. All the studies cited above show that teams which change their manager (represented by the dotted line) suffer a decline in performance from 10 games before the date of dismissal (date 0). Post-dismissal team performance recovers and stabilizes around 1.2 point per game on average, at a level below that of teams that did not change their manager. Many studies have suggested that the recovery in team performance following a dismissal could simply be the result of a “regression to the mean”. The question is, however, what would have happened if the manager had not been dismissed?

² We also use as a check on robustness the number of goals scored and the number of goals conceded.

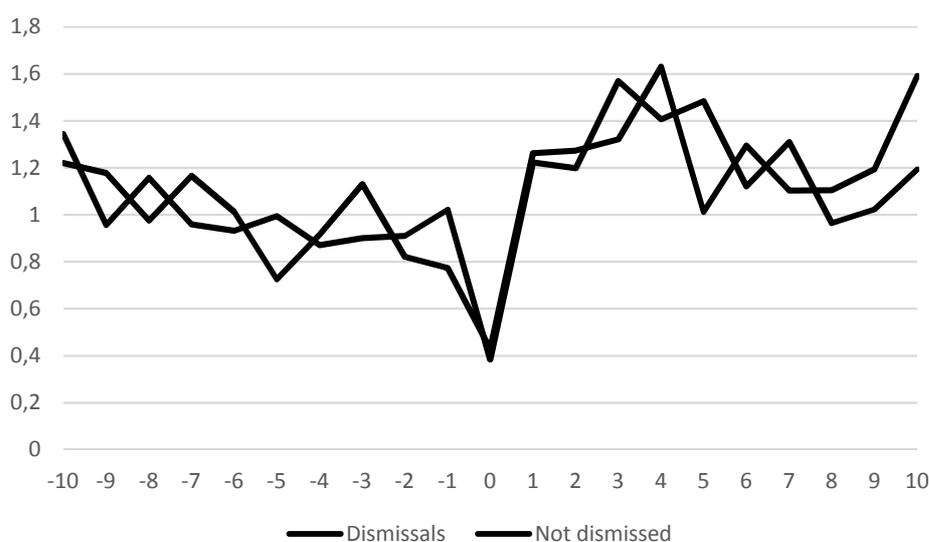
Figure 3: Average team points before and after manager changes



Before applying a matching approach to obtain causal impact, we can consider the methodology of Arnulf *et al.* (2012) who tried to test this hypothesis by creating a control group with the same negative slope from teams that did not change their manager. The method involves choosing from among the 10,132 spells with no change those that display a similar trend to that of the average club under consideration during the 10 games before the date of dismissal.

We take the following criteria: 0 or 1 points for the last game; 3 or 4 points between 2 games before and 5 games before; 5 points between 6 games before and 10 games before; and club ranking above 12th place. Arnulf *et al.* (2012) do not use exactly the same criteria and prefer to smooth the trend in the last five games. Figure 4 also shows team performance 10 games before a change of manager to 10 games after. Dismissals (the dotted line) are not exactly identical to those in figure 1 because we have only retained the clubs that we can observe 10 games before. The recovery in team performance following dismissals for the two types of teams – manager dismissed/not dismissed – is identical (respectively 1.28 vs. 1.25 point on average after 10 games; with an F-test to compare the mean of the two groups, $F=0.11$, $p=0.74$).

Figure 4: Average team points before and after manager changes



4. Empirical strategy: a difference-in-differences exact matching model

As we have already underlined, the clubs that change their manager have characteristics different to those clubs who do not. Some may be observed (the points before dismissal); others remain unobservable in the data. We use an empirical method that takes observable differences between clubs into account (through exact matching) and corrects for unobserved characteristics (through difference-in-differences). The aim is to identify a causal effect of manager change (whether they are observable or not).

This is a two-stage method. First, we render comparable those clubs that change their manager and those that do not. Then we match clubs that change their manager with their “twins” that do not, and compare changes in performance between the two groups of clubs, i.e. before and after the change of manager. In technical terms, this method combines difference-in-differences with exact matching. In the first step most studies use a propensity-score matching (PSM) model, using a parametric model (a probit or a logit model). In our case, we match directly on observable characteristics so that the whole estimation is non-parametric

(exact matching). One key question is to construct a control group (clubs that do not change their manager) to render comparable both types of club. When there are many control variables it can be difficult to find a counterfactual for each club in question (those that change their manager). When there are too few control variables it can be difficult to make clubs comparable. However, this method requires a common support, that there be observations in both groups with similar characteristics. Exact matching has the advantage of ensuring that clubs are paired on key relevant variables. With PSM clubs are matched on a single propensity score representing the probability of arriving at the outcome. This method can be especially useful when the number of potential confounding factors is large. Since we do not have many control variables, exact matching is supposedly a better method. However, as a check on robustness, we test different exact matchings: a real exact matching and three “quasi-exact” matchings.

Table 2 shows the matching criteria and the corresponding number of clubs under examination and control clubs. We use four variables for the matching procedure: the number of points from the match before the dismissal (points $t=0$): the number of points between the 2nd to the 5th day before the dismissal (number of points $t-1$ to $t-4$); the number of points between the 6th to the 10th day before the dismissal (number of points $t-5$ to $t-9$) and the ranking at the end of the match preceding the dismissal (Ranking $t=0$). An “exact matching” is when the four criteria are exactly the same between clubs that dismissed their manager and clubs that did not. Here we have only 61 target clubs that match with 184 observations in the control group in the common support. “Quasi-exact matchings” 1, 2 and 3 are the cases when we allow one or to two variables for the control group to vary by minus or plus one as compared to the group of clubs being studied. This allows us to recover all (or almost all) of the latter clubs in the common support.

Table 2: characteristics of matching

	Matching criteria					
	Number of studied clubs (in support)	Number of control club spells	Points t=0	Number of points t-1 to t-4	Number of points t-5 to t-9	Ranking t=0
Exact matching	61	184	Exact	Exact	Exact	Exact
Quasi exact matching 1	79	461	Exact	Exact	+/-1	Exact
Quasi exact matching 2	82	428	Exact	+/-1	Exact	Exact
Quasi exact matching 3	84	950	Exact	+/-1	+/-1	Exact

To test the significance of our estimates we calculate two different standard errors.

The analytic standard error is calculated as follows:

$$\frac{1}{N_1} V(Y / T = 1) + \frac{\sum_{i \in T=0} p_i^2}{N_1^2} V(Y / T = 0)$$

Where N_1 is the number of studied clubs (in the support), $V(.)$ the variances of each group, p_i the weight of each control team. We also estimate a standard error with bootstrap with 500 replications. The two values are almost identical; the significance of the effects is therefore robust with regard to the calculation method.

5. Results

Table 3 reports average treatment-on-the-treated (ATT) estimates for performance evaluated over five and ten games before and after dismissal, and according to the matching criteria. Overall, the ATT estimates are relatively insignificant, except in the short term where they are positive and statistically significant for the majority at the 10 % level. On average and according to the matching criteria, comparing team points just before the change of manager (t-5 to t-1) with team points just after (t1 to t5), teams that change their manager gain between 0.165 and 0.276 points more than teams that do not. Turning to other temporal comparisons,

there is no effect from changing managers. These estimates suggest that there can be a short-term shock effect, but that this effect is short-lived.

Table 3: ATT estimates

ATT	Exact matching	Quasi exact matching 1	Quasi exact matching 2	Quasi exact matching 3
$\Delta(t1 \text{ to } t10/t-1 \text{ to } t-10)$	0.130 (0.086)	0.119* (0.070)	0.094 (0.070)	0.123* (0.066)
$\Delta(t1 \text{ to } t5/t-1 \text{ to } t-5)$	0.276** (0.115)	0.186* (0.098)	0.183* (0.095)	0.165* (0.090)
$\Delta(t6 \text{ to } t10/t-6 \text{ to } t-10)$	-0.015 (0.119)	0.051 (0.095)	0.005 (0.102)	0.081 (0.093)
$\Delta(t6 \text{ to } t10/t-1 \text{ to } t-10)$	0.038 (0.100)	0.095 (0.081)	0.102 (0.081)	0.142* (0.078)

Table 4 also reports the same ATT effects, but distinguishes among home and away games. To be more precise, in the estimations we use all games before the change of manager, as in the previous estimations, and we only retain home or away games after the change. That is why we only use t1 to t5 (one game out of two). The results show that dismissing the manager produced tangible results at home during the following weeks for the three quasi-exact matching estimations, when the temporal comparisons are close to the change of manager (from t-5 to t+5): around 0.2 point. The results become insignificant if we use ten games before as a reference.

Our findings differ for away games. In both our alternative estimations, the ATT estimates for a new away-team manager indicate insignificant effects.

Table 4: ATT estimates for home and away games

ATT	Exact matching	Quasi exact matching 1	Quasi exact matching 2	Quasi exact matching 3
$\Delta(t1 \text{ to } t5/t-1 \text{ to } t-5)$ Home	0.176 (0.116)	0.196** (0.100)	0.241** (0.097)	0.229** (0.097)
$\Delta(t1 \text{ to } t5/t-1 \text{ to } t-10)$ Home	0.123 (0.114)	0.152 (0.095)	0.144 (0.090)	0.167* (0.094)
$\Delta(t1 \text{ to } t5/t-1 \text{ to } t-5)$ Away	0.191 (0.121)	0.128 (0.101)	0.138 (0.099)	0.139 (0.093)
$\Delta(t1 \text{ to } t5/t-1 \text{ to } t-10)$ Away	0.138 (0.117)	0.085 (0.099)	0.041 (0.093)	0.077 (0.088)

Manager turnover is high in soccer. The two main reasons for dismissing a manager are to change the organisation of the team's game – by a new strategy and/or by changing players - and to improve the motivation of the same players. Our results show that team performance slightly improves in the short term (5 games) but the effect is not significant in the mid-to-long term (10 games). These results can be explained by the psychological effect on players and fans. When the psychological impact of the new manager disappears, the ability of the manager to lead the team is the most important variable of team performance.

6. Conclusion

The idea that the individual leadership of a CEO (a manager) has an influence on company (team) performance is controversial. Kuper and Szymanski (2014) consider “the obsession with football managers” to be a version of the “Great Man Theory of History”, an approach that historians abandoned long ago: managers have very little influence on their team's results. Conversely, Anderson and Sally (2014) think that the “Great Person Theory” is not obsolete in economics, and that the influence of football managers is non-negligible: if a

manager is important and a team performs poorly, replacing a manager should lead to better performance.

Using data from the French League 1 during the seasons from 1998-1999 to 2017-2018, this paper investigates the relationship between team performance and the change of manager. During twenty consecutive periods prior to a manager's dismissal, team performance sharply declined, following which many clubs dismissed their manager. Mean team performance increased after turnover. Overall results however reveal no impact from manager turnover in the long term. The apparently favourable short-term impact on team performance of a change of manager is only the consequence of playing at home.

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