

MANAGERIAL TURNOVER AND PERFORMANCE: LESSONS FROM THE POLISH EKSTRAKLASA

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Purpose: The aim of this paper is to assess the impact of managerial turnover on organisational performance. This study contributes to the ongoing debate on whether changing a manager results in performance improvements and investigates this phenomenon in the context of resource-constrained sports organisations.

Design/methodology/approach: Using a dataset covering the 2006/2007 to 2023/2024 seasons, this study analysed 115 cases of managerial changes made during the season. For each managerial change, an alternative scenario was constructed in which the manager was retained despite similar team performance. A model was developed to assess the outcomes of both scenarios, accounting for team strength (measured by the ELO rating) and home advantage to control for match-specific influences on performance.

Findings: The results show a modest improvement in team performance following managerial changes. However, a similar improvement was observed in the alternative scenarios where no change occurred, indicating that this effect is largely attributable to regression to the mean.

Practical implications: These findings suggest that mid-season managerial changes are not associated with significant improvements in team results compared to scenarios where managers were retained. This contributes to the broader discussion on the efficacy of managerial changes in professional football leagues, particularly within financially constrained settings, exemplified by the Polish Ekstraklasa.

Originality/value: This study adds to the discourse on the implications of changes in key organisational positions. The novelty of this research stems from the application of contemporary methodological approaches to evaluate the effects of managerial changes in organisations facing numerous constraints, such as the Polish Ekstraklasa. Additionally, the study introduces a methodological innovation: the use of the ELO ranking system, which can be applied to assess the strength of teams competing in competitions marked by substantial variability in outcomes.

Keywords: managerial turnover, sport performance, regression to the mean, Polish Ekstraklasa.

Category of the paper: Research paper.

1. Introduction

Managerial changes at the highest levels of an organisation are a natural part of its functioning. These changes often occur when a contract ends, or a CEO reaches a certain age (Tena, Forrest, 2007). Occasionally, however, changes happen at less convenient times. A typical signal prompting such a change is concerning information from within the organisation, such as unsatisfactory returns for publicly traded companies (e.g., Kim, 1996; Warner et al., 1998). Therefore, it is crucial to understand the consequences of managerial changes in various aspects of organisational performance, particularly financial outcomes. However, empirical research in this field remains inconclusive. Some studies indicate that managerial changes often result in a short-term increase in stock value (Kaplan, Minton, 2012). Other studies show that many companies do not perform better after a CEO change (Wiersema, 2002), and some do not observe a significant impact of these changes on organisational performance at all (Smith et al., 1984).

A significant methodological challenge in empirical research on the effects of changing a firm's leader is the quality of data. Ter Weel (2011) suggests that this issue can be addressed by analysing data from professional sports. He argues that sports outcomes offer directly measurable performance indicators (e.g., win, draw, loss in football) at regular, weekly intervals. Sports leagues can be treated as markets where "firms" within the same industry compete, and the decisions of managers are public and directly influence results. Additionally, both a company president and a football manager must possess similar skills and qualities, such as leadership, personnel management, strategic thinking, and team-building abilities necessary for achieving organisational goals.

This study examines the impact of changing the manager on organisational performance within the sports context. The primary goal is to assess the influence of managerial changes on subsequent team performance. Firing a manager mid-season often incurs additional costs, such as the need to pay compensation for contract termination. For this reason, such changes are infrequent, and the primary reason is typically disappointing results that cast doubt on the team's ability to achieve its set objectives. This analysis uses data from Poland's top football league, the Ekstraklasa. Based on data from the 2006/2007 to 2023/2024 seasons, 127 instances of managerial changes during ongoing seasons were identified. Match outcomes were measured by points earned and, alternatively, goal differences in individual games. Using a modified method proposed by van Ours and van Tuijl (2016), a model was built to explain team results depending on relative team strength, home advantage, and binary variables indicating the treatment and control groups. The results of the study suggest that team results improve slightly following a managerial change. However, this improvement can be attributed to the phenomenon of "regression to the mean", indicating that the effect is comparable to teams that did not change managers despite a crisis.

The results are interesting for several reasons. First, they contribute to the ongoing discourse on the effectiveness of managerial changes on organisational performance. Although this phenomenon is well-studied in the context of the largest and wealthiest football leagues in Europe, there are still relatively few analyses based on leagues that exist somewhat on the margins of major European football. The findings are also of interest to the Polish football community, as common opinions about the effectiveness of managerial changes in crisis-stricken teams prove to be unfounded.

The following sections of this article are organized as follows. The second chapter provides a broader context by reviewing literature on the managerial change effect. The third chapter presents the construction of the data set and the model used to verify the research objective. In the fourth chapter, the study results and conclusions are discussed. The article concludes with a summary.

2. Literature review

Research on the effect of managerial changes in sports dates back to the 1960s, when the impact of various factors on team performance began to be analysed. One of the first significant publications on this topic is Grusky's (1963) work, which, based on data from Major League Baseball (MLB), concluded that frequent managerial changes destabilise a team, ultimately leading to decreased efficiency. The author argues that this process creates a "vicious cycle", as a sports crisis leading to a managerial change further deteriorates team results.

Gamson and Scotch (1964) challenged Grusky's theses, presenting three possible explanations for the impact of managerial changes on team performance. According to them, the most credible theory is the "scapegoat" theory, which suggests that firing a manager has no significant impact on team performance. The decision to replace a manager is often perceived as a symbolic gesture towards stakeholders, demonstrating that the management acknowledges the crisis and is ready to take decisive action. The third theory, known as the common-sense theory, assumes that disappointing results can be attributed to the manager's decisions and that a well-chosen new manager can improve the team's performance.

With the increased availability of data and the natural connection between leadership changes in sports organisations and similar phenomena in business, this topic has become a significant area of interest in sports economics. While initial studies focused on data from professional leagues in the United States (Scully, 1994), research since the late 20th century has increasingly examined the impact of managerial changes in football.

Most research has focused on the wealthiest European leagues, such as the English (e.g., Dobson, Goddard, 2001; Audas et al., 2002; Flint et al., 2014; Besters et al., 2016), French (Scelles, Llorca, 2020), Spanish (Tena, Forrest, 2007; Lago-Peñas, 2011), German (Wagner,

2010; Muehlheusser et al., 2016), Italian (De Paola, Scoppa, 2012), and Dutch (Bruinshoofd, ter Weel, 2003; Koning, 2003; van Ours, van Tuijl, 2016) leagues. The results of these analyses are inconclusive. They often support the "scapegoat" theory (De Paola, Scoppa, 2012; Besters et al., 2016; van Ours, van Tuijl, 2016), showing that while team performance may improve slightly following a managerial change, this is merely a regression to the mean. Some authors, such as Wagner (2010), confirmed a positive impact of managerial changes, while Scelles and Llorca (2020) found some evidence for the common-sense theory, and Tena and Forrest (2007) observed a positive effect exclusively for home games. On the other hand, some studies (Audas et al., 2002) indicate the possibility of a "vicious cycle" effect.

Despite numerous studies on the impact of managerial changes on sports performance in top European leagues, there remains a notable research gap regarding lower-tier leagues, particularly in Central and Eastern Europe. Only a few studies examine Scandinavian leagues (Madum, 2016; Arnulf et al., 2012), the Austrian league (Wirl, Sagmeister, 2008), and the Polish league (Radzimiński et al., 2021).

Therefore, a re-examination of the managerial change effect in the Polish Ekstraklasa is warranted. This would allow for not only verifying the findings of Radzimiński et al. (2021) but also contributing to the discussion on the consequences of managerial changes within a league facing significant financial constraints. In the Polish league, these constraints not only lead to regular losses of standout players, who are difficult to replace, but also complicate the hiring of managers with established international reputations. Additionally, the heavy reliance of Polish clubs on public funds, including funds from state-owned companies and municipal entities, affects the stability of results and fosters a preference for short-term goals over long-term development of sporting quality. Due to these reasons, the Polish Ekstraklasa, with its unique characteristics, presents a significant yet underexplored area for research on the impact of managerial changes on sports performance, which this study aims to address.

3. Methods

3.1. Dataset

The study uses data on match outcomes, team ELO rankings, average bookmaker odds for individual matches, and managerial changes from 18 consecutive seasons of the Polish Ekstraklasa, spanning from 2006/2007 to 2023/2024. The data sources include the websites www.betexplorer.com, www.football-data.co.uk (for match outcomes and bookmaker odds), www.clubelo.com (for ELO ranking data), and www.transfermarkt.pl (for managerial changes). Information on managerial changes was verified against official press releases to confirm the reasons for these decisions.

During the period under analysis, the number of teams participating in the league and the structure of the league itself varied. In the 2006/2007–2012/2013 and 2020/2021 seasons, 16 teams competed in a double round-robin format, playing each other twice (home and away). In the 2013/2014–2019/2020 seasons, after a regular season, the league was split into two groups of eight teams, which then played a single round-robin. Since the 2021/2022 season, 18 teams have competed in a double round-robin format. Given that each match involves two teams and both teams' results were analysed separately, a total of 4910 matches, corresponding to 9,820 events, were examined.

A distinctive characteristic of the Polish league, compared to Europe's top leagues, is its schedule. Due to weather conditions, in addition to the typical summer break, the Ekstraklasa also has a nearly two-month winter break. During this period, the transfer window allows for significant roster changes and tactical adjustments. Consequently, managerial changes during the winter break do not exhibit the typical characteristics of mid-season changes analysed in this study. To address this, each season was divided into two competitive rounds: fall and spring, treated as independent periods.

3.2. Team Performance and Form

In each match, a team can achieve one of three outcomes: win, draw, or loss. Since teams' face opponents of varying levels throughout the season, a measure of team form should consider not only points earned (3 points for a win, 1 point for a draw) but also the differences in team potential. In the literature, there is consensus on the measures describing current and long-term team form.

The "Match Surprise" (MS) is defined as the difference between the points earned in a given match and the expected points based on bookmaker odds (Stadtman, 2006). It is represented by the following equation:

$$MS_k = R_k - (3 \cdot p_k^w + p_k^d) \quad (1)$$

where:

R_k represents the points earned in match k ,

p_k^w and p_k^d denote the probabilities of winning and drawing in match k , as determined by bookmaker odds.

The team's form throughout a round is measured by the "Cumulative Surprise" (CS), as proposed by van Ours and van Tuijl (2016). It is calculated as the sum of match surprises from the beginning of the round to a given point and is expressed by the equation:

$$CS_n = \sum_{k=1}^n MS_k \quad (2)$$

The value of cumulative surprise reflects how the team is performing relative to expectations. Significantly low negative values indicate underperformance, which can increase the likelihood of a managerial change.

3.3. Treatment and Control Group Construction

The purpose of this study was to analyse the impact of managerial changes on team performance. To achieve this, a modified procedure proposed by van Ours and van Tuijl (2016), later used by Besters et al. (2016), Scelles and Llorca (2020), and Flepp and Franck (2021), was applied.

From the raw data for the 2006/2007-2023/2024 seasons, 387 instances of managerial changes were identified. Changes made during the summer and winter breaks, as well as those occurring within the first or last three rounds of each half-season, were excluded. Temporary managerial changes and those not due to managerial dismissal (e.g., voluntary resignations unrelated to team performance) were also eliminated. Finally, instances of multiple managerial changes within a single team during the same round were excluded.

This process resulted in the selection of 127 mid-season managerial changes. For each instance, two scenarios were constructed: the first describing the team's form from the point of the change to the end of the round, and the second, an alternative scenario, assuming that despite similar results, the team management decided against a managerial change, giving the manager a chance to address the crisis.

The search for the optimal alternative scenario was conducted within the same club and rounds where no managerial change occurred. This was based on a comparison of cumulative surprise values. Following van Ours and van Tuijl's (2016) suggestions, it was assumed that the difference between the cumulative surprises for the actual and counterfactual managerial change scenarios should be less than 0.5. In cases where multiple scenarios met this criterion, the one with the smallest difference between match rounds was chosen as the alternative. As a result, an alternative scenario was matched for 115 of the 127 managerial changes considered. Instances where no alternative scenario was found were not included in the empirical analysis.

3.4. Empirical model

The analysis of the managerial change effect was conducted using the following model:

$$y_{ijk} = \eta_{ik} + r'_{ijk}\beta + \delta d_{ijk} + \lambda c_{ijk} + \varepsilon_{ijk} \quad (3)$$

In this formula, the dependent variable y_{ijk} refers to the measure of outcomes, such as points earned or goal difference, for the i -th team in the j -th match of the k -th season. The constant η_{ik} captures the unobserved quality of the i -th team in the k -th season. r'_{ijk} is a vector of variables affecting match outcomes, d_{ijk} and c_{ijk} are binary variables identifying observations assigned to the treatment and control groups, respectively. ε_{ijk} represents the error term.

From the research perspective, the key parameters are those for the d_{ijk} and c_{ijk} variables. The parameter δ measures the effect of the actual managerial change on team performance, while λ reflects the impact of retaining the manager (hypothetical change). Positive and statistically significant values of these parameters indicate an improvement in team results following a managerial change, whether actual or hypothetical. To confirm the existence of the "new manager effect", it is necessary to test whether the parameter for the managerial change is significantly higher than that for the hypothetical change. This is done using an F-test of parameter equality.

Two primary factors are recognized in the literature as potentially affecting match outcomes (r'_{ik}). The first is playing as the home team. Numerous empirical studies (e.g., Nevill, Holder, 1999; Pollard, 2008) confirm the existence of the "home advantage" phenomenon in football, primarily attributed to fan support and better adaptation to local pitch conditions. Therefore, the variable $HOME_{ijk}$, which indicates match location (1 = home team), is included in the model.

The second factor is the opponent's sporting level. In the literature, this is often captured using the team's final position in the previous season (Besters et al., 2016) or the current league standing of both teams (Scelles, Llorca, 2020). However, in a competitive and unpredictable league such as the Polish Ekstraklasa, referencing previous season results may not accurately reflect the current potential of the teams. Moreover, using ordinal variables like league position can be misleading as their significance varies depending on the timing within the season.

This study proposes an innovative measure – the ELO ranking system – as an alternative to traditional indicators. While originally developed for assessing chess player skill (Elo, 1978), the system's flexibility and ability to reflect both current and long-term sporting form have made it widely adopted in various sports, particularly for forecasting football match outcomes (Hvattum, Amtzen, 2010). The ELO system evaluates relative team potential, giving higher weight to strong performances against well-ranked opponents. For each observation, the variable ΔELO_{ijk} represents the difference in ELO rankings between the home and away teams.

Based on these data, binary variables d_{ijk} and c_{ijk} were defined, taking the value of 1 for matches played after the actual or hypothetical managerial change date and 0 for other cases.

Consequently, the estimated model takes the following form:

$$y_{ijk} = \eta_{ik} + \beta_1 HOME_{ijk} + \beta_2 \Delta ELO_{ijk} + \delta d_{ijk} + \lambda c_{ijk} + \varepsilon_{ijk} \quad (4)$$

4. Results and Discussion

The estimation results, presented in Table 1, illustrate the model described by equation (4), using two outcome measures: points earned and goal difference. As shown, regardless of the chosen dependent variable, all the explanatory variables are statistically significant at the 0.01 level, and the conclusions remain consistent across both measures.

Table 1.
Estimation Results for the Football Match Outcome Model

Variable	Points	Goal Difference
Home Match ($HOME_{ijk}$)	0.5045*** (0.0404)	0.6908*** (0.0531)
ELO Difference (ΔELO_{ijk})	0.0027*** (0.0002)	0.0043*** (0.0003)
Treatment Group (d_{ijk})	0.4057*** (0.0489)	0.5123*** (0.0648)
Control Group (c_{ijk})	0.4648*** (0.0513)	0.4773*** (0.0681)
F-test p-value for parameter equality	0.31	0.66

Note: Standard errors corrected for heteroskedasticity are presented in parentheses. ***, ** and * indicate statistical significance at the 0.01, 0.05, and 0.1 levels, respectively.

Source: Own calculations.

The coefficients for the "Home Match" and "ELO Difference" variables are positive, suggesting that home teams benefit from playing on their own pitch, and a greater ELO difference, reflecting a stronger team, increases the chances of success.

The coefficients for the "Treatment Group" and "Control Group" are also positive, suggesting that team performance improves following a managerial change. However, this does not inherently confirm the "new manager effect". The positive coefficients for the "Control Group" variable imply that even without a managerial change, team performance might improve. To examine this further, an F-test was conducted to check for significant differences between these coefficients. In both models, the obtained p-values ($p = 0.31$ and $p = 0.66$) do not allow us to reject the null hypothesis, indicating that the effects of actual managerial changes and hypothetical changes are similar. Thus, in the Polish Ekstraklasa, there is no evidence that mid-season managerial changes significantly improve team performance.

These results are consistent with findings from top European leagues. Using a similar methodology, van Ours and van Tuijl (2016) obtained analogous results for the Dutch league, while Besters et al. (2016) drew similar conclusions regarding the English league.

However, comparing these results to studies based on leagues with a similar sporting reputation to the Ekstraklasa seems more relevant. Primarily, the findings differ from those of Radzimiński et al. (2022). Using data from the 2018/2019-2020/2021 seasons, these authors compared the average points earned before and after managerial changes. They observed that while performance improved following a managerial change, teams that retained the same

manager throughout the study period achieved even better results. These differences may be due not only to data from different periods but also to methodological differences.

Other empirical studies on leagues with similar sporting potential include analyses for the Austrian and Danish leagues. In the current UEFA rankings (September 2024), these leagues are ranked six and two positions above the Ekstraklasa, respectively. The study on the Austrian league (Wirl, Sagmeister, 2008) found no improvement in team performance following managerial changes, though it should be noted that the authors' methodology did not include constructing a control group. On the other hand, Madum (2016) found a positive effect of managerial changes in the Danish league, but this effect was only observed in home matches.

The results clearly indicate that the "new manager bounce" effect does not occur in the Polish Ekstraklasa. While team performance often improves after an in-season managerial change, this is mainly due to natural mean reversion, aligned with the actual potential of the team. This finding challenges the rationale behind costly dismissal decisions, as such changes primarily serve a symbolic purpose and rarely address the underlying structural problems of the team. Long-term managerial stability seems to be better, especially in leagues with limited financial resources (van Ours, van Tuijl, 2016).

It is important to note that the findings do not suggest that managerial changes in the season should be ruled out a priori. In some situations, such as conflicts between the manager and the club's board or players, the cooperation may no longer be. Each case is unique and should be evaluated individually. However, evidence suggests that in Poland, managerial dismissals during the season occur far too frequently and are often made impulsively.

It is an interesting question why clubs so frequently opt for a mid-season managerial change. A key factor appears to be the belief in the short-term effectiveness of such a move. The results indicate that, after a managerial change, the teams gain an average of 0.4 additional points per match and score approximately 0.51 more goals per game. This may create the illusion that dismissals are effective, particularly as the observer cannot compare this situation with the counterfactual scenario in which the previous manager was given the opportunity to improve results.

5. Summary

The goal of this study was to assess the validity of the managerial change effect in the Polish Ekstraklasa. Based on data from eighteen consecutive seasons, 127 instances were identified in which disappointing mid-season results led to a managerial change. For 115 of these cases, an alternative scenario was identified in which the same team was in a similar sporting situation, but the club's management chose not to dismiss the manager within the same round. The matching of these observations was based on cumulative surprise values.

The study found that both points earned, and goal difference improved after a managerial change. However, this improvement could be attributed to regression to the mean, as a statistically similar improvement was observed in teams where the manager was retained despite a sports crisis.

Although the study clearly indicates the absence of a managerial change effect, several factors explain why clubs persist in making such decisions. The primary drivers appear to be external and internal pressures, which compel decision makers to adopt bold measures aimed at alleviating the immediate crisis and restoring confidence in the organisation. These actions are often taken to address the "Ashenfelter's dip" phenomenon, where performance deteriorates before the intervention, leading to heightened expectations of a recovery following a managerial change.

Despite evidence that the observed improvement in performance after replacing a manager is often illusory, and considering the significant financial burden associated with contract termination, many clubs adhere to the "scapegoat theory." This theory suggests that any action, even if costly and potentially ineffective, is perceived as preferable to inaction, especially in a high-pressure environment where stakeholders demand visible responses to declining results.

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