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**Can club-specific human capital contribute towards more  
success for football coaches?**

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## Abstract

This work project indicates that club-specific human capital has adverse effects on coach performances. In a broader context, it is shown that football clubs are biased regarding their head coach appointments and still hire internal candidates, despite lower overall performances. The sample being used is based on coach performance data from German professional football leagues. After playing professional football, becoming a coach at the same club has deleterious effects on football clubs. Therefore, this work project's findings suggest that trust premiums for internal candidates hamper football clubs' success.

**Keywords:** Human capital, Internal promotion, Former football player, Coach performance, Leadership

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**ABBREVIATIONS**

Bn .....	Billion
CEO.....	Chief Executive Officer
Covid-19.....	Coronavirus Disease 2019
CPF.....	Coaches who played professional football for the same club
DFL .....	Deutsche Fußball Liga
Et al. ....	Et alii
FP .....	Former player (independent variable)
FPOTC .....	Former player of the club (independent variable)
IFFHS .....	International Federation of Football History & Statistics
SME.....	Small and medium-sized enterprise
SSOC.....	Season start of coaching (independent variable)
TV.....	Television
UEFA .....	Union of European Football Associations
U.S.....	United States

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## **1 Introduction**

Football has been facing significant changes for decades. Increasing football's commercialization has developed high tensions between football as a sport for society and as a business (P. Kennedy & D. Kennedy 2012, 337). It seems football increasingly transforms into a business, rather than persisting as a sport for everybody. Increasing investments in players and football clubs are going hand in hand with rising revenues, which result from advertising, broadcast, and match days. Thus, football clubs operate in a high-pressure environment and strive for win and profit maximization (Garcia-del-Barro & Szymanski 2006, 27). Top leaders in companies have an impact on company success characteristics such as employees' innovative behavior (De Jong & Den Hartog 2007), employees' affective commitment (Gilbert et al. 2011), and corporate behavior (Bertrand & Schoar 2003). Therefore, top leaders such as football head coaches are of the utmost importance for football clubs. Finding a trainer who brings immediate as well as long-term success is gaining further importance.

Real Madrid's third consecutive win of the Champions League with their former player Zinedine Zidane as head coach sparked heated debate in the football world whether club-specific human capital contributes to more success. Since the European Champion Clubs' Cup rebranding into Champions League from the 1992–93 season onwards, no club has ever won the title for two consecutive years. Real Madrid has exceeded expectations and won the title three times in a row from the 2015-16 season onwards with their former player as head coach. Another success story of how a former player turned a team into one of the best ones of all time is Josep Guardiola Sala with FC Barcelona. Guardiola has won the treble of Champions League, La Liga, and Copa del Rey in his first season as head coach of FC Barcelona and has paved the road for a modern way of football (Buldu et al. 2019). In four years, Guardiola became the most successful coach in FC Barcelona's history and left the club with 14 trophies and two IFFHS World's Best Club Coach awards. Success stories like these let clubs worldwide dream about

the ideal appointment of head coach positions with famous former players to satisfy fans, investors, and players. The overall question behind this is whether club-specific human capital helps a manager to be more successful.

This work project analyzes if club-specific human capital has significant effects on head coach performances. In the bigger picture, the objective is to empirically prove whether firm-specific skills help or harm top leaders to become more successful. For this purpose, discussions about internal or external CEOs, what makes a good manager, and the associated introduction of firm-specific human capital are elaborated in chapter 2. After that, chapter 3 builds a regression model with fixed-effects to highlight that being a former player of a club where coaches played professional football provides club-specific human capital. Based on head coach performance data from the top two tiers of German professional football leagues, the effect of club-specific human capital on various coach performance measures is estimated in chapter 4. Additionally, the regression model is expanded to evaluate industry-specific human capital's effect on coach performance measures. Furthermore, chapter 5 elucidates incentives for internal promotions. Finally, chapter 6 summarizes the most important findings and provides an outlook on future research priorities for highly discussed internal or external recruitment debates.

## **2 Leadership discussion**

### **2.1 Internal versus External CEOs**

McKinsey has analyzed 600 chief executives of S&P 500 companies during 2004 and 2014, with the result that exceptional CEOs who increased total return to shareholders over 500% are twice as likely externally appointed candidates than internal ones (Birshan et al. 2017, 2). Nevertheless, internally appointed top leaders can still be exceptional if they develop an outside perspective on old-established company structures and cultures since exceptional CEOs are characterized by early "strategic reviews and organizational redesigns" (Birshan et al. 2017, 3-



4). Another critical research in this field examined changes in operating return on assets for internal and external CEOs by analyzing 1,344 top leader successions at large public firms from 1971 to 1994 and indicates that outside CEOs reach higher profitability ratios (Huson et al. 2004, 261). Furthermore, Murphy and Zábajník (2007) studied CEO pay and turnover data from 1970 to 2000 in the United States and found out that compared to 1970, the number of externally hired CEOs increased by 175% in 1999. Moreover, internally appointed chief executive officers earn approximately 15.3% less than external ones (Murphy & Zábajník 2007, 27-33). Consequently, as external appointing has become more widespread, companies must be aware that these solutions are more cost-intensive due to higher external top leader salaries.

In contrast, Favaro et al. (2012) analyzed the world's 2,500 largest public companies and identified a countervailing trend, which also indicates rising external CEO appointments but higher overall returns and more decisive influence on the company share prices by insiders. Hence, research is inconclusive whether internal or external solutions are beneficial. On the one hand, research recommends hiring externally. On the other hand, studies highlight the merits of promoting internally. The upcoming analysis will demonstrate which effect dominates and whether internal or external top leaders are more favorable.

Even though research about external and internal CEOs suggests that external candidates with higher wages have become more prevalent, determining whether success is entirely attributable to external top leaders remains a challenge. Alternatively, companies' situations before changing their management board members could account for better external CEO performance. Poorly performing firms with financial problems tend to hire external rather than internal CEOs (Schwartz & Menon 1985). Consequently, externally appointed CEOs face different conditions. To obtain undistorted external and internal CEO performance results, a dataset needs to be created in which external and internal candidates are hired in different years for the same firm under similar conditions. Since companies develop over time and cannot

constantly exhibit the same conditions, it remains impracticable to create a dataset that meets these requirements. Hence, separating higher external CEO success from actual external CEO replacements and conditions faced by companies before changing top leaders has been a menace for prior research in the field.

Nevertheless, football is an excellent industry to test whether internal top leaders outdo external ones because of excessive managerial turnover, enabling control for club and manager fixed effects. The primary prerequisite is that head coach vacancies are considered equivalent to top management positions within companies. Another vital advantage of the football industry is that most clubs already appointed several internal and external candidates for their head coach positions. This helps to create a valid dataset to test if external hires lead to higher success or if internal promotions are beneficial. Additionally, football clubs are easily comparable as they belong to one industry. In contrast, studies about internal and external CEOs include firms operating in different industries with non-identical conditions in their datasets.

## **2.2 What makes a good manager**

Gosling and Mintzerg (2003) developed the five managerial mindsets framework, which describes effective managers. Although the framework is not empirically proven, all five managerial mindsets provide the foundation necessary for managers to interpret the world around them. According to the five managerial mindsets: *reflective, analytic, worldly, collaborative, and action*, effective managers are characterized by a "deep integration" of these mindsets and do not act before they reflect (Gosling & Mintzerg 2003). Compared to other research in which effective project managers' evaluation is based on technical, conceptual, organizational, and human skills (El-Sabaa 2001, 4), the five managerial mindsets framework offers a broader base. It can be used to classify all skills of an effective manager into one of the five mindsets. Another paradigm for determining a talented manager is Google's project "Oxygen" (Friedman, 2018). Ten years of research conducted with data from performance

appraisals and employee surveys about common behaviors among the best managers have led to the identification of ten common behaviors of ideal managers. The characteristics range from motivating a team to having the technical skills necessary to be a good manager. Past research is inconclusive and contradictory about what makes a good manager. What seems to be critical in one study is considered unimportant in another and vice versa. Another problem stems from the means to measure management success. Studies developed different evaluation methods to assess leaders' effectiveness, such as group performance measures like financial ratios or employee surveys about job satisfaction and leaders' effectiveness (Madanchian et al. 2017, 1045). To compare external with internal managers, group performance measures are more suitable as most firms provide financial statements. Furthermore, employee surveys differ from company to company, and implementation is not obligatory, making it an inapt measure.

However, coaches' group performance measures in football do not depend on external laws and financial statements since they automatically derive from weekly match days. Clear performance ratios such as points or wins per season facilitate the evaluation of coaches. Hence, individual coaching performance in the football industry is easy to compare when analyzing professional football clubs and coach performances. Therefore, to test whether internal or external candidates are more successful, football provides a suitable industry for empirical research.

### **2.3 Principles of human capital**

Becker (1962) divided human capital into two distinct components. While firm-specific human capital increases productivity for one specific organization with unique knowledge between the firm and the employee, general human capital increases productivity for different firms by identical marginal products (Becker 1962, 13-17). When a firm uses unique software and provides workers with trainings on how to use it, internal productivity for workers at their

current firm increases. In contrast, Excel or PowerPoint training increases workers' external market value because their productivity for other firms rises as well.

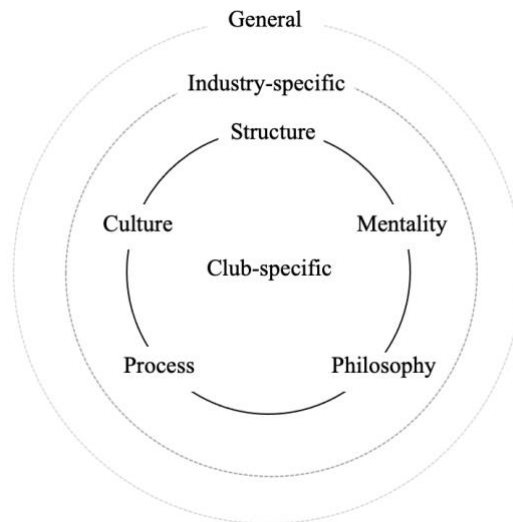
General skills can be taught and applied in different companies, while firm-specific skills can create unique competitive advantages (Barney 1991, 102). Although the latter skills set impacts a firm positively, employees have adverse incentives to make firm-specific investments (Wang & Barney 2006, 469). Extensive research suggests that enhancing firm-specific skills goes hand in hand with greater employee mobility constraints (Peteraf 1993, 187). Additionally, employees suffer from uncertainty about how firms will behave after firm-specific investments (Hoskisson et al. 2018, 288). Consequently, employees are reluctant to invest in firm-specific trainings contrary to companies, because of wasted potential to gain competitive advantages. Therefore, the question arises whether organizations should establish countermeasure. One example is to compensate employees for the associated uncertainty and the resulting mobility constraints. However, prior to this, it must be determined if employees with additional firm-specific skills outperform employees merely equipped with general skills.

Football clubs provide optimal environments for evaluating whether managers have firm-specific expertise or not. The reason is that coaches who also played professional football for the same club (CPF) gained club-specific skills and knowledge during their time as former players. Football coaches can be seen as managers, while football clubs in higher leagues can be categorized as SMEs (Moore & Levermore 2012). Hence, one can analyze firm-specific human capital of CPF. If they demonstrate a substandard coaching performance, external coaches would be preferable. Consequently, club-specific skills and knowledge would be circumstantial. The resulting knowledge is transferable to other industries, which answers the overall question of whether firm-specific human capital contributes to more success of managers.

## **2.4 Introduction of club-specific human capital**

Whenever coaches arrive at new clubs, they first introduce themselves during press conferences and ask for settling-in periods for teams' development processes. When Jürgen Klopp arrived as head coach of Liverpool in 2015, he instantly asked for time to be dedicated to making progress with the team and promised to win a title until 2019 (Hunter 2015). The first and second tier of German professional football leagues marks consecutive revenue records during the last 15 years and hit a new all-time high of €4.8bn in the 2018-19 season (DFL 2020, 3). Growing commercialization of professional football, sponsorship deals, and investor-backed cash flows transformed small football clubs into businesses. Therefore, it is in every football club's interest to reduce settling-in periods for new managers to a minimum and maximize success as fast as possible. One can assume a shorter acclimatization period for internal candidates.

Internal and external head coaches differ mainly in one point, which is called club-specific human capital. In an organizational context, firm-specific human capital includes manager knowledge and experience about who is interacting with the company, internal processes, and people working for that specific firm (Wang & Barney 2006, 466). *Figure 1* illustrates firm-specific human capital extended to the football industry, known as club-specific human capital. Additionally, the broader context of human capital is implied by incorporating industry-specific and general human capital. Both do not focus on one firm and therefore cover broader and more unspecific human capital. In the context of this work project, club-specific human capital will be of greater importance, whereas industry-specific human capital will play a subordinate role in the later course.



**Figure 1: Dimensions of Human Capital<sup>1</sup>**

*Figure 1* demonstrates that the principle of club-specific human capital is based on five characteristics. The first characteristic is a clubs' culture, which develops over time and represents their unwritten rules, namely "values, behavioral norms, artifacts and behaviors" (Homburg & Pflesser 1999, 6). These components can influence firm or rather club effectiveness, costs, productivity, and success (Berner 2019, 4-5). Since culture also depends on the people working for a company, managers should become acquainted with their employees. Knowledge about employee personalities enables managers to motivate their workforce more efficiently (Fero 2011, 21). Hence, a manager who previously worked as a non-manager in the firm can find effective ways to motivate people in the company. Therefore, it can be concluded that a coach's employee knowledge as a part of the firms' culture represents club-specific human capital.

Furthermore, club-specific human capital covers knowledge of club processes. A business process is a series of tasks and activities that culminate in providing results as services or products to the customer (Aguilar-Saven 2004, 129). Therefore, employees with an understanding of club processes, experienced firm-specific knowledge about activities and how

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<sup>1</sup> Own figure

different departments collaborate in a club. Further, club philosophy and mentality represent further essential parts of club-specific human capital. In most cases, philosophy and mentality develop and derive from the histories of clubs. One example is FC Bayern Munich's expression of the winner's mentality "Mia san Mia" which means "We are who we are" and unites 16 principles to support its club philosophy (Mojeed 2020). Winner's mentality in football clubs depends on numerous core factors that every employee needs to follow (Bund Deutscher Fußball-Lehrer 2016). Even if clubs have limited tradition, they implement philosophies that must be followed by a new manager.

According to Bower (1966), business philosophies set guidelines for employees on how to behave and perform, which can lead to higher business success. Thus, club philosophies enable efficiency improvements and help maintain standards across all departments and employees, including head coaches. Additionally, club structures impact manager roles. Some clubs are company-backed and investors have a free hand in determining the club's management. In the United Kingdom, coaches are designated as managers because they are also responsible for squad planning and transfers. In contrast, sports directors in Germany take care of these responsibilities, focusing on team line-ups and tactics. There are also differences within the Bundesliga, which sometimes results in an unclear allocation of head coach responsibilities. One example is Jürgen Klinsmann, who coached Hertha BSC Berlin for 76 days during the 2019-20 season. The reason for his early resignation was a disagreement over the distribution of coaches' competencies with board members of Hertha BSC Berlin and Jürgen Klinsmann's desire to manage all sporting responsibility, which also involves tasks of sports directors (Hermanns, 2020).

Provided mentioned characteristics represent club-specific human capital, the hypothesis that club-specific human capital increases coach performances can be proposed. The prerequisite is that CPF gained club-specific human capital from their old clubs. By comparing

their performance measures with those of average Bundesliga coaches, the assertion can be analyzed that coaches with club-specific human capital reach higher performance measures. To assess this assertion's plausibility, the hypothesis will be tested empirically with coaches' group performance data from the first and second tier of German professional football leagues in the following two chapters.

### **3 Regression Model**

#### **3.1 Sample and data description**

The sample includes coach performance data from Bundesliga and 2. Bundesliga since their founding years in 1963 and 1974 until 2019 with more than five games per club, to exclude interim coaches. According to Transfermarkt (2020), interim trainers in Germany coach less than a handful of games on average. Active coaches are also excluded because their overall club performance cannot be determined yet. In total, the final sample consists of a panel of 100 football clubs and 375 coaches. Transfermarkt (2020) served as the source for the sample. At first glance, the total number of coaches does not appear to be correct because 56 Bundesliga seasons multiplied by 18 coaches per season amount 1008 coaches, just for the Bundesliga. However, most trainers coach multiple clubs during their professional coaching career and stay longer than a single season during their tenure at one club. In total, the final sample includes 2051 seasons that have been fully or partially coached by trainers. Therefore, a season can also include more than one coach per club if coach transitions happened during a season.

Performance measures for coaches can be evaluated by different ratios, which are included in the sample. A manager's ability is often measured by winning percentages, which are also called winning ratios. A winning ratio of 0.45 indicates that a coach wins 45% of his matches on average. Total games, wins, draws, losses, and points per season are also important variables to compare coaches. The points per game ratio is commonly used in the media to evaluate coach performances, representing how many points on average a coach reaches per game when wins



lead to three points, draws to one point, and losses to zero points. Therefore, the ratio can range from 0-3. A ratio of 2.3 implies an average of 2.3 points per game. In order to win a match, a team has to score more goals than the opponent. Therefore, one can compare how many goals a team has scored versus conceded per season to assess coaching performances. A positive goal ratio per game indicates that teams have scored more goals than conceded per game, which positively impacts a team's success. Furthermore, trophies and tenures are also indicators that help to evaluate the overall trainers' performance. In order to be able to assess coach performances more effectively and precisely, each season is separately included in the sample. Every tenure is divided into its seasons. Additionally, it is shown if coaches have fully or partially coached a team during a season. A variable of 1 means that trainers spent the entire season with the team, whereas a value of 0 suggests a head coach' transition. The same applies to the trophy variable, which takes the value of 1 if a coach has at least won one trophy during a season and 0 if otherwise. Therefore, Full season and Trophy are both dummy variables. In total, 12 performance measures are being included in the sample. All ratios and differences in performance measures between average Bundesliga coaches and CPF are presented and summarized in *Table 1*.

**Table 1: Comparison of coach performance measures**

<b>Performance Measures</b>	<b>Average Bundesliga Coach</b>	<b>CPF</b>	<b>Difference</b>	<b>t-Value</b>	<b>p-Value</b>
Games per season	28.38	27.87	0.51	-0.656	0.512
Wins per season	11.42	10.88	0.53	-1.241	0.215
Draws per season	7.01	6.88	0.12	-0.518	0.605
Losses per season	9.96	10.10	-0.14	0.482	0.630
Goals scored per season	44.82	43.60	1.23	-0.787	0.432
Goals conceded per season	40.84	41.62	-0.78	0.661	0.509
Points per season	41.30	39.54	1.76	-1.228	0.220
Points per game	1.46	1.42	0.04	-1.094	0.275
Win ratio	40.23%	39.06%	1.17%	-1.142	0.254
Trophy	8.80%	4.05%	4.75%	-3.761	0.0002
Goalratio per game	0.004	-0.053	0.057	-1.316	0.189
Fullseason	46.10%	47.98%	-1.88%	0.637	0.525

One can assume that CPF have higher average performance measures because of additional club-specific knowledge and skills. To compare means, a two-sample hypothesis test is performed for every performance measure on the difference of the means of average Bundesliga coaches and CPF. Hence, the hypothesis is tested whether the population means are equal for the two groups. The null hypothesis assumes that the variances for the two groups are equal.

The first point that stands out is the fact that the null hypothesis is mostly not rejected. Consequently, for the major part of performance measures, there is no difference in the means of average Bundesliga coaches and CPF. Second, one can reject the null hypothesis and conclude that the two population means are different at the 0.01 significance level for winning a trophy. Generally, trophies carry a high priority in the public perception in terms of evaluating coaches. For the general public and media, the most successful manager is the one who has won the most trophies (Philip 2020). Sir Alex Ferguson won 49 major trophies, which makes him for a large part of media to the most successful manager of all time. Thus, winning trophies is one of the key performance measures. This is all the more remarkable because only 4.05% of CPF won at least one trophy during one season, whereas 8.80% is the average for Bundesliga coaches. Accordingly, the percentage of coaches who won a trophy during a season was approximately cut in half when former players became head coaches at their old clubs. Contrary to the expectation that CPF have higher average performance measures, a deterioration in one of the key performance measures was found.

Although for most performance measures, no difference of the means of average Bundesliga coaches and CPF was detected, it is noticeable that for almost every performance measure the indication point in the same direction, with the result that CPF performed below-average. However, the assumption can only be made very cautiously since trophies won per season is the only performance measure which provides confirmation. Therefore, additional analysis is required to confirm the cautious assumption to a greater extent.

### **3.2 Model**

To further examine the differences between CPF and average Bundesliga coaches and to consider factors that could explain these differences, a regression model is introduced and conducted in the following. The primary independent variable is a dummy variable, which reveals whether a coach was a former player of its club or not. The dependent variable could be any variable that helps to evaluate coaching performances. As already described in chapter **3.1**, evaluating coach performances could be reached by a wide range of ratios and indicators. The following dependent variables are considered as performance measures: Games per season, Wins per season, Draws per season, Losses per season, Goals scored per season, Goals conceded per season, Points per season, Points per game, Win ratio, Trophy, Goal ratio per game, and Full season.

Besides FPOTC as the primary independent dummy variable to evaluate the effect on various performance measures, additional independent variables must be included to explain the differences between average Bundesliga coaches and CPF. First, every coach has his own impact on the overall performance of a team. The same applies to football clubs since every club is unique. Hence, both string variables need to be converted into numeric variables and integrated into the regressions. Second, match performance parameters like overall sprint distances and pass completion rates develop over time (Bush et al. 2015, 9). This changes the way of how professional football is played and increases the intensity in football. Furthermore, football clubs became brands over the last decades and transformed into "media hubs" (PwC 2016, 20). Thus, digitalization enabled interactions with media platforms and closer contact with football fans. Additionally, more data becomes available for football clubs, which is used to analyze all kinds of parameters in a football club like tactics, scouting, and fitness with big data solutions (Rein & Memmert 2016, 8). All mentioned factors prove that football is changing and further developing. Therefore, a variable is required that considers the season in which the

trainer coached a team. In the following regressions, this variable is called "Season start of coaching". If SSOC takes the value of 1963, all other independent variables refer to that season. In the case of 1963, all performance measures refer to the inaugural season of the Bundesliga in 1963-64. In short, the regression includes four independent variables and indicates a specific club, if the coach was a former player of that club, the name of the trainer, and last but not least in which season the football trainer has coached the club:

Regression Model 1:

$$y_{i,t} = \beta_0 + \beta_1 fpotc_{i,t} + \beta_2 club_{i,t} + \beta_3 trainer_{i,t} + \beta_4 ssoc_{i,t} + \varepsilon_{i,t} + \alpha_{i,t} \quad (1)$$

With 56 and 57 years, Bayern München and Werder Bremen have the longest memberships in the Bundesliga (Fussballdaten 2020). The final sample indicates that coaches of Bayern München reach an average of 1.97 points per game, whereas coaches of Werder Bremen only achieve 1.53 points on average. Although both clubs played almost the same number of years in the Bundesliga, there is a tremendous difference in average points per game. Therefore, the problem arises of weighting club-specific impacts and to treat every club differently when evaluating coach performances.

Club fixed effects deliver a solution by taking out the different means and fix group means. The same principle applies to trainer and season fixed effects. After the reunification in Germany, two more teams were admitted for the Bundesliga season in 1991-92. Therefore, coaches completed 28.39 games per season on average, whereas in 1995, 25.61 was the average. Season fixed effects make it irrelevant whether head coaches took over a club in 1991 or 1995. Furthermore, trainer fixed effects control for innate qualities of professional leadership and coaching. The inclusion of fix effects controls for time-invariant unobserved club, coach, and season heterogeneities. Consequently, the means of club, trainer, and season are getting fixed, which keeps the average effect of these variables constant. Hence, one can actually interpret

the effect of FPOTC on coach performance measures as a real causal effect. Regression model

2 includes club, trainer, and season fixed effects:

Regression model 2:

$$y_{i,t} = \beta_0 + \beta_1 fpotc_{i,t} + \beta_2 i.club_{i,t} + \beta_3 i.trainer_{i,t} + \beta_4 i.ssoc_{i,t} + \varepsilon_{i,t} + \alpha_{i,t} \quad (2)$$

## 4 Effects of being a former player

### 4.1 Former player of specific clubs

The dummy variable FPOTC takes the value 1 if a coach was a former player of the club. Hence, associated regression coefficients show the effect of being a former player of the old club on any dependent variable that can measure coach performance. All values over 0 indicate a positive correlation between any variable that measures coach performance and being a former player, whereas values under 0 reflect negative correlations. Consequently, under the condition that the regression coefficients are statistically significant, the effect of FPOTC can be measured.

**Table 2: Former player of specific clubs effects** (\*, \*\*, \*\*\* indicates significance at the 10%, 5% and 1% levels)

Performance Measures (y)	Estimate ( $\beta_1$ )	Std. Error	t-Value	p-Value	Indication
Games per season	-2.336	1.271	-1.84	0.066	*
Wins per season	-1.456	0.695	-2.10	0.036	**
Draws per season	-0.426	0.405	-1.05	0.292	-
Losses per season	-0.462	0.494	-0.94	0.350	-
Goals scored per season	-4.455	2.456	-1.81	0.070	*
Goals conceded per season	-1.517	1.902	-0.80	0.425	-
Points per season	-4.746	2.331	-2.04	0.042	**
Points per game	-0.008	0.039	-0.20	0.841	-
Win ratio	-0.005	0.014	-0.36	0.717	-
Trophy	-0.054	0.027	-1.99	0.047	**
Goalratio per game	-0.026	0.072	-0.36	0.716	-
Fullseason	-0.043	0.050	-0.86	0.391	-

The first independent variable in *Table 2* represents overall games per season as a coach. Therefore, a higher number of games per season indicates, in most cases, a more successful season since coaches do not reach high numbers if they are being sacked during the season. Additionally, a higher number of games per season could mean that clubs achieved further rounds in tournaments like DFB Cup, UEFA Champions League, or UEFA Europa League. A p-value of 0.066 is considered statistically significant at a 10% level. Thus, if the coach is a former player of the club, the average games per season decrease by -2.34 matches when clubs, trainers, and seasons are fixed. This means there is a statistically significant negative correlation between FPOTC and the total number of games per season. The reason could lie within two factors. First, CPF could be eliminated earlier in knockout tournaments or do not reach these tournaments. Second, they are not even able to finish the season because of higher termination rates during seasons. Since no statistically significant linear dependence of the mean of Full season on FPOTC was detected, the first assumption's probability is higher.

The second dependent variable in *Table 2* is wins per season. The probability of coaching a full season increases by 5% on average, if wins per season increases by 1. Therefore, if wins per season rise, the likelihood of being terminated decreases. If trainers are former players of the clubs they coach, wins per season drop by -1.46 on average when clubs, trainers, and season are fixed. Consequently, when former players are head coaches of their old clubs, it reduces the number of games played and the total wins per season. No statistically significant linear dependence of the mean of loss and draw on FPOTC was detected.

In contrast, another statistically significant negative dependence of the mean of goals scored on FPOTC was found. If coaches are former players of their clubs, goals scored per season decrease by -4.46 on average when clubs, trainers, and seasons are fixed. Hence, teams of CPF score fewer goals per season. It is essential to score at least one goal to win a game. If goals per

season increases by 1 goal, wins per season increases by 0.26 on average. Thus, fewer goals scored per season decreases wins per season, which implies worse coaching performances.

As already described in chapter 3.1, trophies carry a high priority in the public perception in terms of evaluating coaches. Consequently, winning trophies during a season is essential as a dependent variable to evaluate coach performances. In *Table 2*, the effect of FPOTC on the probability of winning a trophy is statistically significant at a 5% level. Hence, if trainers are former players of their old clubs, the likelihood of winning a trophy decreases by -5.4% on average when clubs, trainers, and seasons are fixed. Thus, CPF decrease the probability of winning trophies, which negatively affects club success. No statistically significant linear dependence of the mean of Goals conceded per season, Points per game, Win ratio, Goal ratio per game, and Full season on FPOTC was detected.

The assumption that CPF are kicked out of tournaments prematurely or do not manage to qualify for these tournaments is further reinforced by each of the five statistically significant negative effects on coach performances. Bundesliga and 2. Bundesliga clubs have to play a minimum of 35 games per season, stemming from 34 league match days and the first DFB cup round. Additional matches can be added by progressing to the next rounds of a tournament. The only exception comes with relegation matches. Regardless, teams of CPF score significantly fewer goals and decrease wins per season. Both effects have an adverse effect on points per season. Therefore, CPF are either not gaining access to tournaments or are eliminated prematurely. International tournaments such as UEFA Champions League and UEFA Europa League can only be reached by a handful of teams with the highest points in their national leagues. The only competition in which the number of games is predetermined and independent of team performance is the national league. By being eliminated prematurely or not reaching tournaments, CPF cause a significant reduction in the number of games played per season and the probability of winning a trophy.

All statistically significant effects that arise from FPOTC on coach performance measures are adverse. CPF reduce the number of games played per season, number of total wins, goals scored per season, points per season, and the probability of winning a trophy. All these effects point in the same negative direction, which indicates a decrease in overall coaching success. As a result, club-specific human capital does not seem to have positive effects on coach performances. Quite to the contrary, one can witness adverse effects.

The presented model assumes that FPOTC represents all aspects of club-specific human capital. That should be critically scrutinized since football clubs are also confronted with change management (Cruickshank & Collins 2012). Internal processes and people vary over time. Therefore, a player who immediately becomes head coach of his former team has a higher coverage of club-specific human capital than someone who spent 20 years at other clubs and returns afterward. Furthermore, the model does not consider that coaches can also gain club-specific human capital if they have multiple tenures as head coaches at one club. According to the presented model, Jupp Heynckes did not gain club-specific human capital because he never played professional football at Bayern München. In total, Jupp Heynckes had three tenures as head coach and one as interim coach of Bayern München and therefore gained club-specific human capital, which is being ignored by the model. Hence, coaches do not always have to be a former player to acquire club-specific skills and knowledge. As long as an employee has worked for the club in the past, it is sufficient to gain at least the same level of club-specific human capital as former players.

#### **4.2 General former player model**

1676 seasons have been fully or partially coached by former players, whereas trainers without a professional football career merely coached 375 seasons. One can assume that clubs from professional German football leagues prefer former players because of their previous experience and football knowledge. Only 18% of all seasons in the dataset have been coached



by trainers without professional football playing experience. Most of them were able to gain experience as players in lower leagues, but none of them have reached professional football leagues. Besides previously analyzed club-specific human capital, one can further expand this approach to industry-specific human capital, known as football-specific human capital in the football industry.

Based on population surveys about job displacements, Neal (1995) proved empirically that employees earn significantly higher salaries due to factors, which are industry-driven, rather than just firm-specific. When this applies to the football industry, coaches' salaries include compensation for football-specific skills rather than club-specific skills. Furthermore, when employees switch industries, they suffer a significant wage loss (Weinberg 2001, 253). This can incentivize former football players to use their industry-specific knowledge to earn higher compensations after their professional football careers.

For clubs, the question is whether higher salaries for coaches with professional football player experience are justified and whether they can achieve higher performance metrics than coaches without industry-specific knowledge. For testing the hypothesis that industry-specific knowledge significantly increases coaches' performance measures, a similar regression model and the same dataset are being used as in chapter 3.2. The significant difference is that being a general former professional football player replaces being a former player of the club, where the coach played professional football. This crucial difference in the independent variable ensures that the effect of industry-specific human capital is being analyzed, rather than only club-specific human capital. Under the condition that former professional football players acquired industry-specific skills and non-former professional football coaches were not able to gain that particular human capital, a third regression model is required.

Regression model 3:

$$y_{i,t} = \beta_0 + \beta_1 fp_{i,t} + \beta_2 i.club_{i,t} + \beta_3 i.trainer_{i,t} + \beta_4 i.ssoc_{i,t} + \varepsilon_{i,t} + \alpha_{i,t} \quad (3)$$

### 4.3 Effects of general former player

The dummy variable FP takes the value 1 if a coach was a former professional football player and 0 otherwise. Hence, it can be evaluated for every dependent performance measure variable whether being a general former player provides significant effects on various performance measures. According to **3.1**, 12 performance measures are being considered to assess the success of coaches. Since firms and therefore clubs are willing to pay higher compensations for managers with industry-specific human capital, one can assume that coaches with football-specific human capital perform above average and that being a former player has significant positive effects on performance measures.

**Table 3: General former player effects** (\*, \*\*, \*\*\* indicates significance at the 10%, 5% and 1% levels)

Performance Measures (y)	Estimate ( $\beta_1$ )	Std. Error	t-Value	p-Value	Indication
Games per season	6.352	10.336	0.61	0.539	-
Wins per season	5.094	5.651	0.90	0.368	-
Draws per season	2.556	3.291	0.78	0.437	-
Losses per season	-1.299	4.014	-0.32	0.746	-
Goals scored per season	17.471	19.974	0.87	0.382	-
Goals conceded per season	5.363	15.458	0.35	0.729	-
Points per season	17.846	18.962	0.94	0.347	-
Points per game	0.225	0.318	0.71	0.479	-
Win ratio	0.060	0.110	0.54	0.586	-
Trophy	0.034	0.222	0.15	0.879	-
Goalratio per game	0.249	0.584	0.43	0.670	-
Fullseason	0.524	0.403	1.30	0.194	-

Contrary to expectations, there are no statistically significant effects of being a former player on coaches' performance measures. Hence, there is no statistically significant linear dependence of any performance measure's mean, which does not allow to interpret coefficients. The null hypothesis that being a former player has no correlation with a performance measure cannot be rejected for any of the 12 performance measures used as dependent variables. Consequently,

the data provides no evidence that the null hypothesis is false. Statistically, it is wrong to accept the null hypothesis and conclude that being a former player does not affect performance measures. The sample being used does not provide sufficient evidence to prove any statistically significant effect and fails to reject the null hypothesis. However, almost all coefficients point in the same positive direction. Without considering statistical significance, it appears that being a general professional former player increases coach performance. This opposite effect is indeed quite noteworthy but could not be empirically proven since the impact of being a general former player on coach performance measures is not statistically significant. For this reason, the following analysis merely focuses on negative statistically significant effects that arise from club-specific human capital on performance measures.

## **5 Preference for internal promotions**

### **5.1 Internal staffing**

Although coaches with club-specific human capital perform below-average, clubs stick to their idea to appoint their former players as head coaches. This can be witnessed in the latest engagement of Sebastian Hoeneß as head coach of TSG Hoffenheim for the 2020-21 Bundesliga season. During 2006-07, Sebastian Hoeneß was an attacking midfielder at TSG Hoffenheim and gained club-specific human capital. Accordingly, there are factors wherefore clubs hold on to their coaches with club-specific human capital, despite their worse performance. Thus, football clubs may have a bias towards internal appointments. Tracking CEO transitions among S&P 500 companies clearly shows that this bias also exists outside the football industry. During 2019, 56 new CEOs were installed, from which 79% represented internal appointments (Spencer Stuart 2020, 5). Therefore, only 21% were hired externally. This is counterintuitive because external promotions are more comfortably achievable and associated with less work for candidates (Harzing 2018).

However, promoting internally occurs also in academia and at universities. Academic inbreeding describes the practice of how universities hire Ph.D. candidates and professors who graduated from their institutions (Altbach et al. 2015, 317). Inbred faculty members are 35% less effective, which causes academic stagnancy and decreases scientific productivity (Inanc & Tuncer 2011, 893). Another research underlines these results by indicating that inbred colleagues publish 11 - 15% fewer scientific outputs on average compared to their non-inbred candidates (Horta et al. 2010, 422-424). Indeed, promoting within organizations has deleterious effects, which are consistent with the findings in chapter 4.1.

## **5.2 Behavioral bias**

One of the reasons firms and especially football clubs prefer internal promotions and appointments could be hiring biases. Although there are different types of unconscious cognitive biases that influence hiring decision-making, affinity bias is likely to be more appropriate. It describes the tendency to favor people with the same backgrounds or experiences (Nalty 2016, 46). Therefore, the board of directors of football clubs could prefer former players because of their background and already see them as a part of their club. People prefer what is familiar under pressure and choose options contrary to the problems' roots (Litt et al. 2011, 529). The football industry is a high-pressure environment because results are evaluated on a weekly basis and depend on easily measurable team performances. Therefore, if clubs have to find appropriate candidates for head coach vacancies, the board of directors is mostly under pressure to present efficient and long-term solutions in short times. This often leads to picking familiar options of former players, causing results contrary to initial expectation, based on chapter 4.1. Hence, former players receive a trust premium and prioritization over external appointments from their clubs. What remains unexplained is that clubs also make conscious decisions to appoint former players to head coaches in low-pressure scenarios. This is the case when candidates do not become head coach immediately but instead in the pre-season. Thus,

besides unconscious cognitive biases, there are alternative explanations for club decisions to appoint former players as head coaches, although their performance is below-average.

### **5.3 Fan satisfaction**

The football industry is struggling to shape its future. Since the beginning of the corona crisis at the end of 2019, initiatives have called for wide-ranging reforms and, above all, supporters represent an elementary component of football (Unser Fußball 2020). German football's restructuring initiative aims to ensure fairer competition, democracy, social responsibility, and sustainable financing (Unser Fußball 2020). The gap between football clubs and supporters is widening. Covid-19 forces matches to be played behind closed doors, adding to already existing adverse effects. This gap has surged since it has become clear that football clubs can continue their business without having supporters in their stadiums on match days. According to earnings, football clubs in Europe's top leagues mainly generate revenue by advertising, broadcasts, and match days in descending order (Deloitte 2020). In lower-ranked leagues, match day income with ticket sales, merchandise, and food and beverage consumption become revenue drivers. However, for almost all football league divisions, revenue drivers depend on supporters. On the one hand, without massive fandoms, the growing commercialization of the most successful professional football leagues in Europe is unimaginable. On the other hand, increasing commercialization harms the bond between clubs and fans. This should be taken into consideration by involving supporters in club decisions, avoiding them to turn their back on the club (Ronald & Jean-Pierre 2019, 27). A former player's appointment as head coach could increase the fandom's acceptance and satisfy supporters' demand for internal coach solutions. This could result in higher ticket and merchandise sales, club membership fees, and TV earnings.

## **6. Conclusion and Future Work**

The purpose of this work project was to find out if club-specific human capital accounts for higher success for football head coaches. Therefore, the principle of human capital was introduced and divided into general and firm-specific. After that, it was shown that in the football industry, firm-specificity equals club-specificity. Moreover, it was noted that former players who decided to start a career as head coaches gained club-specific human capital from their old clubs.

In total, 12 performance measures were introduced to assess coach performances. The regression analyses reveal that being a former player of a club where the coach played professional football has statistically significant negative effects on five performance measures. Quite the opposite of the positive effects one could assume, club-specific human capital contributes towards significantly less success for football coaches. Translating this into an organizational perspective, internal top leaders have deleterious effects on firms. However, the model ignores that coaches also gain club-specific human capital if they have multiple tenures as head coaches at one club. Therefore, future research could extend the model and consider that coaches do not always have to be former players to acquire club-specific skills and knowledge. In the next step, the regression model was adjusted so that the effect of being a general former player on performance measures could be measured. Therefore, firm-specificity was replaced by industry-specificity. Although no statistically significant effect could be detected, the positive indication of being a general former player on performance measures is remarkable. At this point, a further investigation with additional independent variables is recommended to prove the positive indication empirically.

Two explanations were provided as to why internal candidates are still in demand, despite below-average performances. First, affinity biases may lead the board of directors to prefer former players with the same background or experiences. Second, former players could be

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favorable because, to a large extent, revenues depend on supporters, and clubs could appoint former players to satisfy fans and benefit from higher revenues at the same time. This could be another starting point for research to test the hypothesis that clubs with former player head coaches significantly increase revenues during their tenures and positively impact the club's financials and fan satisfaction.

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## **DECLARATION OF AUTHORSHIP**

I hereby declare that, to the best of my knowledge and belief, this Work Project titled "Can club-specific human capital contribute towards more success for football head coaches?" is my own work. I confirm that each significant contribution to and quotation in this thesis that originates from others' work or works is indicated by proper use of citation and references.

Lisbon, 04. January 2021

A handwritten signature in blue ink, appearing to read 'B. Uysal', with a stylized flourish at the end.

Berkay Uysal



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