High Performers = Better Leaders?

Probing the Validity of Performance-based Promotion to Fill Leader Positions

Joyce Elena Schleu¹

Stefan Krumm²

Alfred Zerres³

Joachim Hüffmeier⁴

¹ Behavioural Science Institute, Radboud University, Nijmegen, Netherlands

² Institute of Psychology, FU Berlin, Berlin, Germany

³ Faculty of Economics and Business, University of Amsterdam, Amsterdam, Netherlands

⁴ Institute of Psychology, TU Dortmund University, Dortmund, Germany

Corresponding author: Joyce Elena Schleu, Radboud University, Behavioural Science Institute, Thomas van Aquinostraat 4, 6525 GD Nijmegen, Netherlands, E-Mail: joyce.schleu@ru.nl

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Abstract

Promoting high-performing employees to leadership positions is a pervasive practice and has high face validity. However, little is known about the actual link between employee and subsequent leader performance, as prior results are inconclusive. Given the prevalence of this performance-based promotion strategy, we conducted a study to address this inconsistency. To account for prior diverging results, we (a) competitively tested predictions from different theoretical perspectives (i.e., the performance requirements perspective, the follower-centric perspective, and the Theory of Expert Leadership), (b) considered possible changes in the predictive validity of this strategy over time, and (c) included job complexity as potential moderator of the link between employee and subsequent leader performance. In a high stakes context (i.e., the first German soccer division), we tested the predictive validity of employee performance for leader performance. Our results suggest a low validity of performance-based promotion, as we could not find evidence for a link between employee performance and later leader performance—neither initially following the promotion nor over time, which is consistent with the performance requirements perspective. We, thus, caution against the (sole) application of performance-based promotion principles.

Keywords: leader selection; Peter Principle; performance-based promotion; employee promotion; expert leadership

“Dr. Peter observed that one reason so many employees are incompetent is that the skills required to get a job often have nothing to do with what is required to do the job itself”

(Peter & Hull, 2011, xi).

It is common practice in organizations to promote high-performing employees to leader positions: A recent study revealed that performance is the strongest predictor for subsequent promotion (Church et al., 2021) and therefore has a gatekeeping-function when filling leadership positions (see Gallup, 2014). While this prevalent HR-strategy seems face-valid (i.e., rewarding high-performing employees with a more senior position; see Kim, 2019), empirical findings on the actual validity of employee performance (EP) for leader performance (LP) have been inconclusive: While some studies reported a positive link between EP and subsequent LP (e.g., Dawson & Dobson, 2002; Goodall & Pogrebna, 2015), others found a negative association between EP and LP (e.g., Benson et al., 2019; Muehlheusser et al., 2018). Hence, the validity of performance-based promotion is unclear which is troubling given its preponderance in current organizational practice (see Church et al., 2015). As invalid selection decisions for leadership positions result in particularly high costs (Brogden, 1949; Cronbach & Gleser, 1965; see also Schmidt & Hunter, 1998), learning about the validity of this performance-based promotion strategy is crucial.

To explain and account for the hitherto inconsistent findings (for an overview, see Schleu & Hüffmeier, 2021) we consider three theoretical perspectives to potentially explain the validity of performance-based promotion: (1) The performance requirements perspective (see Zaccaro, 2012), (2) the follower-centric perspective (see Uhl-Bien et al., 2014), and (3) the *Theory of Expert Leadership* (TEL; Goodall & Bäker, 2015). Based on these theoretical perspectives we derive contrasting hypotheses on the initial predictive validity of EP for LP as well as on potential changes in the predictive validity over time.

As a first contribution of our study, we empirically test the contrasting hypotheses

derived from the three theoretical perspectives mentioned above. This integrative approach will further the understanding of the predictive validity of performance-based promotion and facilitate an interdisciplinary discussion (e.g., personnel selection and management research) on the question of whether high-performing employees truly make successful leaders. Our study, furthermore, addresses the inconsistent pattern of results by examining two potential moderators. As the second contribution, our study provides the first systematic test of temporal changes of the validity of EP for LP (following recent calls, e.g., Fischer et al., 2017). More specifically, we tested hypotheses on the predictive validity of EP for LP immediately after the promotion and on temporal changes in predictive validity over time. Learning about potential short-term effects and changes across time facilitates evidence-based decisions concerning performance-based promotion strategies. Furthermore, we test whether EP is associated with overall LP (i.e., aggregated over time), which allows an assessment of the legitimacy of the use of high EP as a gatekeeper to leader positions. As our third contribution, we examine job complexity of the employee position as a potential moderator. One may argue that EP is more predictive of LP, when the previous employee position mirrors the subsequent performance requirements of a leader position (Zaccaro et al., 2018), which should be the case for more complex employee positions (Hunter et al., 1990). Learning about moderators of the predictive validity of EP for LP provides the opportunity to identify conditions with higher (and lower) predictive validity, to explain the hitherto inconsistent findings, and, thus, potentially enable a situation-contingent use of performance-based promotion strategies. Hence, as a fourth contribution, we derive practical implications from our results. We thereby focus on how to handle performance-based promotion strategies and point out potential improvements of this pervasive strategy.

Theoretical Background and Hypotheses

Despite the inconsistent evidence, the prevalence of performance-based promotion is

high in practice (Benson et al., 2019; Church et al., 2015). In this section, we consider three relevant theoretical perspectives to explain the relationship between EP and LP. The theoretical perspectives yield contrasting hypotheses concerning the predictive validity of EP for initial LP (i.e., immediately following the promotion to a leadership position), changes in predictive validity over time, and the predictive validity of EP for LP aggregated over time. In this study, we conceptualize EP (see Rich et al., 2010, p. 619) “as the aggregated value to an organization of the set of behaviors that an employee” exhibited in their previous subordinate’s position; further, we understand LP as the effect that a leader has on the performance of the led team (see Fischer et al., 2017).

I. The performance requirements perspective

Following the logic of the performance requirements perspective (see Zaccaro et al., 2018), which relies on individual differences to predict LP, performance-based promotion to leader positions should be a valid strategy only to the extent that the employee and the leader position have matching performance requirements (Asher & Sciarrino, 1974; Zaccaro et al., 2018). General taxonomies for the workforce (e.g., Bartram, 2005) as compared to managerial taxonomies (e.g., Borman & Brush, 1993; Tett et al., 2000), however indicate a low match between employee and leader tasks (Schleu & Hüffmeier, 2021): Many dimensions of the managerial taxonomies are rather specific to leader positions (such as guiding, directing, coordinating, and motivating subordinates; Borman & Brush, 1993; Tett et al., 2000), indicating a low match of performance requirements.

Further, to compare the performance requirements of employee and leader positions in more detail, it is instructive to focus on commonly accepted performance requirements of leader positions (for an overview, see Zaccaro et al., 2018), such as personality, job knowledge, and motivation. Concerning personality, performance requirements of leader positions seem to be context-dependent (see De Hoogh et al., 2005) and are also contingent

on employed performance criteria (e.g., rated leader performance versus group performance; for meta-analytic evidence, see DeRue et al., 2011). Taking into account the variability of required personality traits (i.e., of different leader positions), the performance requirements of employee and leader positions concerning personality may match only in some specific contexts: That is, while certain attributes influence EP positively (e.g., conscientiousness or agreeableness) they might not necessarily translate into high LP—but could in some cases translate in low LP. For instance, a successful, dutiful employee might become an ineffective micromanager or a conflict-avoiding supervisor (see Smith et al., 2018).

Job knowledge acquired as an employee might be helpful when becoming a leader, for instance, for structuring the employees' work (see Day et al., 2009). At the same time, previous experience might not translate to new positions or contexts (see Salomon & Perkins, 1989; van Iddekinge et al., 2019) and expertise might reduce a leader's cognitive flexibility facing changes (see Dane, 2010). Furthermore, the need for specific job knowledge acquired in an employee position should decrease with higher hierarchy levels (see Day et al., 2009; Katz & Kahn, 1978). Thus, the performance requirements concerning job knowledge again may match for some contexts (e.g., lower-level leadership positions), but not in general.

While the importance of motivation for performance is obvious and was recently reaffirmed (for meta-analytic evidence, see van Iddekinge et al., 2018), the manifestation of employee motivation could either be stable (i.e., more trait-like) or context-dependent (i.e., more state-like). Consequently, it is unclear to what extent motivation in an employee position transfers to leader positions (i.e., *motivation to lead*; Kark & van Dijk, 2007) due to the different tasks and responsibilities (Porter et al., 2016). To sum up, the performance requirements perspective allows predictions of positive (i.e., for highly overlapping performance requirements), null (i.e., for little overlap of performance requirements), and negative relations (i.e., if performance requirements of the employee position hinder high

performance as a leader) between EP and LP when considering the specific positions. On average, the explanatory value of EP for LP should be low, as the performance requirements of employee and leader positions match only to a limited degree.

II. The follower-centric perspective

We further consider the follower-centric perspective to understand potential links between EP and LP (see Steffens et al., 2021; Uhl-Bien et al., 2014). According to this perspective, leadership is a social construction of followers and it focuses on the requirements and processes to convince a team to follow (Lord et al., 1984; Lord & Maher, 2002) or to gain credibility in a team (Kouzes & Posner, 2011). Followers evaluate their leaders (see Lord & Dinh, 2014) based on past experiences and their socialization concerning typical characteristics of leaders (i.e., implicit leadership theories [ILTs]; Phillips & Lord, 1981; Schyns & Meindl, 2005). Based on their experiences, followers make sense of organizational processes (Weick, 1995): Prior high performance as an employee should increase the degree to which leaders are perceived to fulfill ILTs (Ensari & Murphy, 2003; Lord & Maher, 2002). This might facilitate the attribution of positive outcomes to them (e.g., Meindl, 1995).

Leaders who were promoted based on previous EP in particular should be perceived to embody core attributes of the group (i.e., be prototypical; Schleu & Hüffmeier, 2021). As a result, the leader has informative value for the group and might be perceived as a role-model (Hogg, 2001; Uhl-Bien et al., 2014). Consequently, followers attribute higher credibility to prototypical leaders and support them more (Uhl-Bien et al., 2014), which should result in more successful leaders (i.e., higher LP; Steffens et al., 2021). Thus, the follower-centric perspective suggests a moderate link between EP and LP.

III. Theory of Expert Leadership

The propositions of TEL (Goodall & Bäker, 2015) emphasize the importance of expert knowledge (i.e., acquired as an employee) to be a good leader, at least for knowledge-

intensive organizations. Expert knowledge is assumed to be acquired through technical education, practice, and working experience in a particular sector. Goodall and Bäker (2015) assume that expert knowledge is beneficial for LP due to the following main reasons: First, it is assumed to provide a particularly solid base for decision making (see Goodall & Bäker, 2015). Thus, expert leaders as compared to non-expert leaders profit from representing information holistically and rely on abstract concepts to solve problems (for a related overview, see Ericsson et al., 2006). Second, expert leaders should have a good understanding of the core workers' values, motivations, and typical challenges, due to a shared knowledge base with these workers. As they have a common background with their subordinates, they are potentially perceived "as being the first among equals" (Goodall & Bäker, 2015, p. 57, which is somewhat comparable to being prototypical). This constellation should enable them to create a productivity-enhancing working environment, to set realistic goals, and to evaluate the performance of employees appropriately. Third, Goodall and Bäker (2015) emphasize the advantages of expert leaders in personnel selection due to the homophily principle (cf. Rogers & Bhowmik, 1970): When expert leaders hire new personnel, they are assumed to hire applicants with a high potential (similar to themselves), instead of feeling threatened by capable applicants. This should improve the quality of personnel selection compared to non-expert leaders. In sum, TEL would assume that newly promoted leaders profit from their expert knowledge and, hence, that there is at least a moderate link between EP and LP.

Predictions on temporal changes of the validity

The three theoretical perspectives outlined above make contrasting predictions concerning the predictive validity of EP for LP initially and over time. According to the performance requirements perspective, EP should on average have limited explanatory value for predicting LP, as the performance requirements of employee and leader positions match

only to a rather limited degree. Consequently, the predictive validity of EP for initial LP (directly following the promotion [at t1]) should be weak at most (*Hypothesis 1a*).¹ As we report standardized path coefficients, which may be roughly assessed like correlation coefficients (i.e., small: .10; medium: .30; large: .50; Acock, 2014; Cohen, 1988), the proposed relation corresponds to a standardized path coefficient ranging from -.10 to .10. Further, we consider the effect of time on the relationship between EP and LP: Based on the performance requirements perspective, LP may change over time due to learning and adaptation to the requirements of the leader position. However, these processes are not necessarily related to previous EP. According to this perspective, the predictive validity of EP for LP should remain weak over time (*Hypothesis 1b*).

Based on the follower-centric perspective, prior high EP should increase the degree to which leaders are perceived as prototypical and to which they meet ILTs (Ensari & Murphy, 2003; Lord & Maher, 2002). Hence, followers should support promoted leaders more (Uhl-Bien et al., 2014), which should result in more leadership success (i.e., higher LP; Steffens et al., 2021). Thus, the predictive validity of EP for initial LP (directly following the promotion [at t1]) should at least be moderate (*Hypothesis 2a*), corresponding to a standardized path coefficient equivalent to or above .30. Over time, leaders do not only need to embody core attributes of the group to be perceived as a prototypical, but also need to prove their prototypicality through their engagement for the group (for instance by empowering group members; for pertinent overviews, see Haslam et al., 2011; Steffens et al., 2014). The leaders' engagement for the group should then maintain the support of their team (see Haslam et al., 2011; Steffens et al., 2014). However, the follower-centric perspective does not propose a

¹ Feedback on an earlier version of this manuscript suggested to analyze temporal changes in the validity of EP for LP and to account for the quality of the led team. To address this need, we derived and preregistered the outlined hypotheses (see <https://aspredicted.org/blind.php?x=cx9yu8>). The wording of the hypotheses differs from the preregistration due to space limitations for the preregistration. While the predictions did not change, we modified the wording and order of the hypotheses to improve the readability.

link between high EP and a leader's engagement for the group. Hence, early perceived prototypicality and its positive effect on the predictive validity of EP on LP should diminish over time (Haslam et al., 2011; Steffens et al., 2014). Consequently, the predictive validity of EP for LP should decrease over time (*Hypothesis 2b*).

Following the logic of TEL, leaders should profit from their expert knowledge when getting promoted (e.g., by creating a productivity-enhancing working environment). Thus, the predictive validity of expert knowledge—as indicated through EP—for initial LP (directly following the promotion [at t1]) should at least be moderate (*Hypothesis 3a*), corresponding to a standardized path coefficient equivalent to or above .30. Over time, the proposed processes, for instance, the positive effects of hiring applicants with high potential and of expert leaders creating a productivity-enhancing working environment, should unfold. Thus, the predictive validity of EP for LP should increase over time (*Hypothesis 3b*).

Moderating effect of job complexity

Leader positions as compared to employee positions are more complex (Hunter et al., 1990) and require “a variety of different activities in carrying out the work, which involve the use of a number of different skills and talents” (Hackman & Oldham, 1975, p. 161).

Following the logic of the performance requirements perspective, more complex employee positions may approximate the complexity (and respective performance requirements) of later leader positions (Hunter et al., 1990). Hence, (high) EP in complex positions should be a better predictor for (high) LP, as it indicates the required leader characteristics better.

Therefore, the predictive validity of EP for LP should be higher for more complex employee positions (see Quinones et al., 1995; Tesluk & Jacobs, 1998; *Hypothesis 4*), corresponding to a standardized path coefficient above .10. In comparison, the other two outlined theoretical perspectives are rather mute about the proposed moderation (i.e., complexity of the employee position).

Contrasting expert leaders to non-expert leaders

To provide another test of the outlined theoretical perspectives, we also derive contrasting predictions on having expertise as an employee versus not having such pertinent expertise. Specifically, we also test whether our previous predictions (i.e., H1a-b, H2a-b, and H3a-b) will hold if experience at a pertinent employee position (yes vs. no) instead of EP is used as a predictor of LP. As the overlap of performance requirements of employee and leader positions is on average rather limited (see Bartram, 2005; Borman & Brush, 1993), the performance requirements perspective predicts the following: Leaders, who have pertinent experience as an employee, should not show better LP than leaders without such experience and this should not change over time (*Hypothesis 1c*).

According to the follower-centric perspective, a leader's previous experience as an employee increases perceived prototypicality and follower performance (Steffens et al., 2021; Uhl-Bien et al., 2014). Experience as an employee, however, should not relate to other aspects of perceived prototypicality (e.g., empowering group members; see Haslam et al., 2011), thus its effect should decrease over time: Leaders, who have pertinent experience as an employee, should initially show better LP than leaders without such experience. This difference should, however, decrease over time (*Hypothesis 2c*).

TEL (Goodall & Bäker, 2015), in contrast, predicts that leaders with employee experience should have a better start (e.g., by creating a productivity-enhancing working environment) and this difference should become even more pronounced over time (e.g., due to the lagged consequences of better personnel selection decisions). Leaders, who have pertinent experience as an employee should, thus, initially show better LP than leaders who have no such experience. This difference should further increase over time (*Hypothesis 3c*).

Method

We tested our hypotheses on performance-based promotion strategies in the context

of professional sport (i.e., the Bundesliga, which is Germany's first soccer division). Due to clear and standardized rules in this sport, the relatively high number of performance episodes, and the reliable documentation of performance data, this context provides a rather controlled setting to examine organizational research questions (e.g., Wolfe et al., 2005). In addition, this context allows examining actual leaders (compared to artificial set-ups in the lab). Hence, this context helps to draw reliable conclusions about the initial predictive validity, changes over time, and the predictive validity aggregated over time. We collected the longitudinal data from the websites www.transfermarkt.de and www.kicker.de. To ensure the quality of the extracted data, all data were collected by two trained research assistants.

Participants

We included all head coaches of clubs competing in Germany's first male soccer division (i.e., Bundesliga). Thus, we went through every season of the Bundesliga from 1963/64 to 2018/19 on the homepage www.transfermarkt.de, identified all head coaches ($N = 407$) of the competing clubs, and extracted their data. We attempted to obtain comprehensive data on the career paths for all coaches in our sample. To do so, we included player and coach performance data from the first and second German soccer division, as well as data from every first and second foreign division included in the Union of European Football Associations (UEFA), if the data was available on the respective websites (for further details, please see below).² About $\frac{3}{4}$ of the coaches were former professional soccer players ($n = 309$; 75.92%). Among those, 222 played in the Bundesliga or a first soccer division of the UEFA, 17 played in Germany's second soccer division, and 70 coaches played only in lower soccer

² To account for quality differences between leagues we consulted the UEFA Coefficient (retrieved from www.5-jahres-wertung.de). As our analyses are based on a German sample, we set the first German soccer league as a reference. Consequently, we relativized all UEFA Coefficients (x) against the German UEFA Coefficient (z) separately for every season. Thereby, we obtained a weighting factor to put player and coach performance into context (e.g., Weighted Games = Number of Games * x/z). As there is no official coefficient to weight second soccer divisions relative to first soccer divisions, we weighted all matches of the second division by half of the original weighting factor.

divisions or detailed information about their professional player career could not be obtained. The remaining 98 coaches (24.08%) had no professional player experience. Coaches with professional player experience participated on average in 143.18 matches of the Bundesliga ($SD = 140.97$) during their player careers.

Operationalization and Measures

Employee performance. We used two indicators of EP: *Number of played matches* and *average player ratings*. The number of played matches was obtained for each soccer player (including foreign and lower league matches as described above). Typically, a player only takes part in a match if he is the strongest player available in the team for his position at the point of time (Frick, 2010). As the Bundesliga (and professional soccer in general) is a highly competitive environment (Frick, 2010), the overall number of played matches should be a valid indicator for individual player performance.

Average player ratings reflect the player's individual performance (Baumann et al., 2011) as well as his contribution to the team performance (Frick, 2010). The ratings are assigned by two expert sport journalists out of a trained, stable expert team from a German Soccer magazine called "Kicker". The experts evaluate the players' performance in a match based on their impression, while also taking into account the statistics of the match, such as running distance, goals, and assists (personal communication with N. Peer, who is responsible for the internal and external communication at Kicker). Player ratings are available for each match of the Bundesliga, in which a player participated for at least 30 minutes. The 6-point-scaling (from 1.0 = very good to 6.0 = insufficient) was inverted prior to the data analysis to ease the interpretation of the results such that high values represent good performance ratings. In our analysis, we included the averaged player rating (over the entire player career). Our data indicated that the average ratings decreased over time (i.e., worse grades nowadays compared to 1963). The correlation between date of recorded data (in

years) and the mean grades for each year showed a strong link ($r = .94, p < .001$). We controlled for this potentially confounding effect by including the temporal mid-point of a player's career (i.e., the mean of the years the respective player got graded).

Employee experience. We operationalized employee experience through a dummy variable (yes vs. no): All coaches who had a player profile on the respective homepage (i.e., www.transfermarkt.de) and played in (at least) one of the first or second soccer divisions of the UEFA were coded as having employee experience.

Leader performance. To operationalize LP, we relied on three indicators. As the coach is responsible for high team performance, we assessed his performance by evaluating team performance directly as research supports the assumption of a direct link between the behavior of a coach and the teams' performance (e.g., Crust & Lawrence, 2006). Thus, we operationalized LP via the formal performance criterion in the Bundesliga—the achieved *points per game* (PPG; wins = 3 points, ties = 1 point, and defeats = 0 points). As PPG only reflect the overall result of a game, we also operationalized LP via a measure with a finer resolution: the *goal ratio* of scored to conceded goals.

As a third indicator, we used the *number of coached matches* (including foreign and lower league matches as outlined above). In the highly competitive environment of professional soccer, bad match results are not tolerated, but result in coach succession (Cannella & Rowe, 1995). Hence, the number of coached matches reflects the performance of the coach in relation to the performance expectations of the club: As the decision makers will usually consider available resources and circumstances when evaluating coach performance and deciding on coach succession, the number of coached matches should be a valid measure of LP. As outlined above (see Footnote 2), all coach performance measures were weighted to account for quality differences of the soccer leagues in the UEFA. Further, all operationalizations of coach performance were sampled for each coached season.

Job complexity of the employee position. To operationalize job complexity of the employee position, we relied on the *Group Structure Model* (Chelladurai, 2013; Chelladurai & Carron, 1977; Grusky, 1963) to capture the complexity of different positions in sports. Across different team sport contexts, player positions vary in their propinquity (i.e., observability and visibility) and their degree of task dependence (Chelladurai, 2013; Chelladurai & Carron, 1977; Grusky, 1963; for an overview, see Carron & Eys, 2012). In this study, we applied the group structure model to the context of soccer. With increasing propinquity and task dependence a player receives more information about game-related processes and interacts more frequently with other players (Carron & Eys, 2012). Thus, we considered high manifestations of propinquity and task dependence for a position as operationalization of the complexity of the employee position.

To estimate the job complexity of the different player positions we invited soccer experts, such as (former) players, coaches, soccer managers, and sport journalists to participate in an online survey. Fifty-nine experts completed our questionnaire. We excluded five participants as they expressed doubts about their expertise. Thus, 54 experts ($M = 42.5$ years, 98.1 % males) remained in the sample. On average, our experts were engaged in competitive soccer for a duration of $M = 18.17$ ($SD = 8.92$) years as a player and of $M = 6.47$ years ($SD = 6.83$) as a coach. After a short introduction to the concepts of propinquity and task dependence, the experts were asked to rate each position in soccer (i.e., goalkeeper, defender, midfielder, and forward; see Table 1). All items were rated on a 4-point scale ranging from 1 (very poor) to 4 (very well). The experts rated the goalkeeper position to be the least complex ($M = 2.35$), followed by the defender ($M = 2.54$), the forward position ($M = 2.9$) and the midfielder position ($M = 3.25$; see Table 1). We included the rated job complexity as a moderator in our analyses (see Hypothesis 4). We obtained information on the former player position for almost all coaches with a prior player career ($n = 301$, 97.41%;

midfielders: 130, defenders: 96, forwards: 62, and goalkeepers: 13). For players who held more than one position, we recorded the most frequently played position (as listed on transfermarkt.de).

Control Variables

In soccer, the team performance is not only influenced by the coach, but also by the team quality. We therefore assessed the team quality (i.e., the *teams' ranking* in the league) before the start of a coach's appointment and included it as a control variable in our analyses. To receive a continuous ranking for the first and the second league we transformed the variable *teams' ranking*: After the transformation higher numbers represent a better ranking (i.e., more specifically, values between 2 and 1 represent the ranking for the first league and values between 1 and 0 represent the ranking for the second league). As the number of competing teams in the first and second league changed over time, the relative value of the ranks changed as well (e.g., the 10th rank in a league of 16 teams versus 20 teams). Hence, this transformation allows comparisons over time. Furthermore, to account for the effects of a coach's continued employment with a club (i.e., continuous coaching) as compared to a change in employment, we included a dummy variable (i.e., 1 = continued employment since the previous season; 0 = change in employment since the previous season).

Analytical Strategy

We analyzed our panel data with structural equation modeling (SEM), using the lavaan package (Rosseel, 2012) in R (version 4.0.2). We relied on maximum likelihood for model estimation and used bootstrapping (5,000 samples) to estimate standard errors. To account for missing data, we used the FIML estimator (e.g., Enders, 2010). In a preliminary confirmatory factor analysis (CFA), we modeled player performance and coach performance as latent factors for all measurement points. The CFA revealed negative residual variances and was therefore deemed inadmissible. Potentially, different measures of player or coach

performance reflect unique performance aspects and not a shared latent variable. Thus, we continued with manifest path models and conducted separate analyses for the different operationalizations of player and coach performance.

When analyzing the link between EP and LP (Hypotheses 1-4) we only considered those coaches who had been soccer players before ($n = 309$). Similarly, we included only those players in our analyses who were graded ($n = 181$) for the respective analyses (i.e., to ensure there is no missing data concerning the predictor variable). We gathered LP for multiple measurement points. One measurement point represents the coach performance of one season.³ As the number of available coach performance episodes drops drastically across time (i.e., only few coaches coached many seasons), we restricted our analyses to the first three measurement points ($t1 - t3$) for the longitudinal analyses (i.e., Hypotheses 1-3). To test for changes in predictive validity of player performance for coach performance over time we relied on model comparisons: We computed a restricted model where we restricted the path coefficients of the player performance to be equal over time and compared this model to the original models (i.e., with free path coefficients). Then we conducted χ^2 difference tests to investigate whether the restriction impaired the model fit. Furthermore, we also conducted analyses considering the aggregated career of the coach (i.e., by considering the aggregated coach performance) to test for the overall effect of performance-based promotion.

To account for different metrics, we standardized the predictor and criterion variables. More specifically, we standardized the coach performance of all measurement points simultaneously to allow for comparisons over time. As effect size measure, we report standardized path coefficients and used the following yardstick for their interpretation: small effects correspond to path coefficients of .10, moderate effects to coefficients of .30, and

³ If, however, a coach was fired during the season and if he was re-employed by another club in the same season, the coach performance for the second club was gathered as a second measurement point.

large effects to coefficients of .50 (Acock, 2014; Cohen, 1988). To correct for p -value deflation associated with multiple tests, we adjusted the p -values for each model through Benjamini and Hochberg's (1995) step-up Bonferroni procedure as recommended for structural equation models (Cribbie, 2007). In the following, we report p -values that are adjusted in accordance with this procedure.

Results

The descriptive statistics and correlations between predictor, criterion, moderator, and control variables are reported in Table 2. In view of the CFA results, we tested six different models (for model fit statistics, see Table 3) to realize all combinations of different player performance measures (i.e., number of played matches vs. average player rating) with coach performance measures (i.e., PPG, goal ratio, and the number of coached matches). As our analyses revealed a consistent results pattern (for more information see Table 3), we exemplarily describe the findings of the first model in more detail: The first model (see Figure 1) indicated no significant link between the number of played matches and coach performance (i.e., operationalized as PPG) directly after the promotion to the coach position ($t1: \beta = .01, SE = 0.06, p = .978$). Over time, the relationship remained non-significant ($t2: \beta = .02, SE = 0.06, p = .978$; $t3: \beta = -.04, SE = 0.06, p = .810$). To test for changes in the predictive validity, we restricted the path coefficients of player performance to be equal over time and conducted a χ^2 difference test. The results indicated no difference ($\Delta\chi^2 = 0.51, \Delta df = 2, p = .773$). Our further analyses (see Table 3, Model 2-6) mirror those findings. Overall, the results pattern, thus, supports Hypothesis 1a and 1b, as the relationship between player performance and coach performance was small and non-significant initially (at $t1$) as well as over time (at $t2$ and $t3$). Further, our results did not indicate a significant change of the relationship between player and coach performance over time.

Further, we also tested the relation between player performance and overall coach

performance (i.e., aggregated over the whole coach career) with 6 models (for model fit statistics, see Table 4). Model 1-6 indicated no significant link between player performance (operationalized via the number of played matches or the average player rating) and coach performance (operationalized via PPG, goal ratio or the number of coached matches).

Overall, those aggregated analyses again support the performance requirements perspective, as they indicate a weak, non-significant relation between player and coach performance.

Testing the moderating effect of job complexity

We included the hypothesized interaction of player performance and job complexity in our prior analyses (see Table 3 and 4). The main effects of job complexity (except for one analysis; see Table 4) and the interaction effects (i.e., player performance $\times$ job complexity) were insignificant, initially and over time. Thus, our analyses did not support Hypothesis 4.

Contrasting expert leaders to non-expert leaders

Finally, we tested the link between player experience (professional soccer player: yes vs. no) and all three operationalizations of coach performance over time with 3 models (for model fit statistics, see Table 5). The first model did not indicate a significant link between player experience and coach performance (i.e., operationalized via PPG) initially after the promotion to the coach position and over time (t1: $\beta = .07$, $SE = 0.11$, $p = .141$; t2: $\beta = .02$, $SE = 0.12$, $p = .761$; t3: $\beta = -.03$, $SE = 0.11$, $p = .761$). To test for changes in the predictive validity, we restricted the path coefficients of player experience to be equal over time and conducted χ^2 difference tests. The results indicated no difference ($\Delta\chi^2 = 1.98$, $\Delta df = 2$, $p = .371$). The second model indicated a significant relationship between player experience and coach performance (i.e., operationalized via goal ratio) directly following the promotion to the coach position, t1: $\beta = .09$, $SE = 0.12$, $p = .035$. Over time, the relationship became non-significant (t2: $\beta = .03$, $SE = 0.09$, $p = .587$; t3: $\beta = -.05$, $SE = 0.12$, $p = .422$). Testing for changes in the predictive validity, the results indicated no change ($\Delta\chi^2 = 4.27$, $\Delta df = 2$,

$p = .118$). The third model neither indicated a significant relationship between player experience and the number of coached matches directly after the promotion to the coach position ($t1: \beta = -.03, SE = 0.09, p = .551$) nor later ($t2: \beta = .08, SE = 0.11, p = .129$; $t3: \beta = .01, SE = 0.13, p = .817$). Accordingly, the predictive validity did not change over time ($\Delta\chi^2 = 3.02, \Delta df = 2, p = .221$). Overall, those aggregated analyses indicate support for Hypothesis 1c and 2c (cf. model 1).

Discussion

We derived and tested contrasting hypotheses on performance-based promotion from three different theoretical perspectives (i.e., the performance requirements perspective, the follower-centric perspective, and TEL) to resolve the inconsistency of prior findings. To do so, we focused on the role of time and job complexity of the employee position. The underlying assumption of performance-based promotion is that successful employees will make successful leaders. However, our analyses did not support this assumption as the range of effect sizes for the relationship between EP and LP mostly ranged from small negative to small positive effects in our sample (i.e., the population of Bundesliga coaches). Likewise, the relation between EP and LP was rather weak across time. Even when aggregating LP over the whole career, our analyses indicated no significant link with EP. Further, for professional player experience (yes vs. no), only one of three analyses indicated a positive link with initial LP. However, this association appears to depend on the operationalization of the criterion (i.e., LP operationalized as goal ratio) and was, thus, rather inconsistent.

Concerning positions with a higher overlap of performance requirements due to the complexity of the employee position, our analyses did not confirm the proposed moderation. While we could not identify conditions with higher (lower) predictive validity, our results suggest that the overall association between EP and LP—at least in the context of our study—is rather small and stable over time. Thus, there is no empirical reason to expect a

head start from previously high-performing employees (at least for the context of our study).

This results pattern is particularly remarkable, since we included all coaches of the Bundesliga in our analyses. Although this performance-based promotion strategy is prevalent (about $\frac{3}{4}$ of the coaches were former professional players), we did not find any evidence for the validity of performance-based promotion.

Theoretical Implications and Future Research

With this study, we aim to initiate an exchange between different disciplines (i.e., personnel selection and management research) on the question of whether high-performing employees may later truly make successful leaders. To do so, we relied on the performance requirements perspective (Zaccaro, 2012), the follower-centric perspective (Uhl-Bien et al., 2014), and TEL (Goodall & Bäker, 2015) to derive our hypotheses: In particular, we specified hypotheses on the initial validity of performance-based promotion, as well as on its validity over time. Due to different assumptions on mediating processes (such as performance requirements vs. perceived leader prototypicality vs. better strategic decision making) those perspectives led to contrasting hypotheses on the predictive validity of EP for LP. Our study results (i.e., mostly small associations between EP and LP) are consistent with the performance requirements perspective (see Zaccaro et al., 2018), but not with the follower-centric perspective or with TEL.

The performance requirements perspective specifies the predictive validity of EP for later LP by comparing the performance requirements of the employee and the leader position. Due to the different tasks of employee and leader positions (cf. Bartram, 2005; Borman & Brush, 1993), employee performance requirements match only to a small degree with the performance requirements for the leader. Our research supports this general reasoning and the importance of this theoretical perspective when predicting the overall EP-LP link.

With an increasing overlap of performance requirements of EP and LP, the validity of

performance-based promotion should increase. We tested job complexity (as one way to increase the overlap of performance requirements) of the employee position as a potential moderator of the relationship between EP and LP. Our results, however, indicated no support for the proposed moderation. To further clarify whether the theoretical rationale concerning an increasing overlap in the respective performance requirements is correct, more studies are needed to examine job complexity (and other proposed moderators) more comprehensively. This might allow a more informed use of performance-based promotion in the future.

Our results provided only very limited support for the follower-centric perspective concerning performance-based promotion in the context of our study. However, when testing the association between player experience (professional soccer player: yes vs. no) and coach performance, one specific analysis indicated an initial weak positive relationship. This effect, however, seemed to be contingent on the operationalization of LP (i.e., LP operationalized as goal ratio). Hence, experience as a professional soccer player could be sufficient to indicate prototypicality and, thus, may match the followers' ILTs initially. Future research could clarify under which conditions these findings hold (within and beyond sports) and thereby also improve the current understanding of the follower-centric perspective.

Our results provided no support for TEL (Goodall & Bäker, 2015) in the context of our study (i.e., professional soccer), as the analyses indicated overall a small (negative or positive) link between EP and LP. As TEL proposed processes that should unfold within an organization over time (e.g., positive effects of hiring applicants with high potential), those effects cannot be tested conclusively with leaders who change teams relatively frequently (as in our study). When restricting our sample to coaches that did not change their club for three seasons, our sample was too small to conduct SEM ($n = 77$; see Kline, 2011). Thus, in an exploratory analysis, we computed partial correlations (i.e., controlling for team quality) and consequently Steiger's z -test (Diedenhofen & Musch, 2015; Steiger, 1980) to test whether the

relationship between player and coach performance differed over time (e.g., comparing the link between the average player rating and PPG at t1 and t2). The link between player and coach performance increased descriptively over time for only two of the six combinations of operationalizations (i.e., average player rating with PPG, t1: $r = -.25, p = .151$; t2: $r = .01, p = .974$; t3: $r = .21, p = .244$; average player rating with goal ratio, t1: $r = -.19, p = .296$; t2: $r = .04, p = .838$; and t3: $r = .15, p = .388$). However, the correlations did not change significantly over time ($z_s < |1.95|, p_s > .05$). To properly test the proposed effects of TEL over time, a rather stable study context (i.e., avoiding power problems) or shorter time lags (i.e., coach performance per week or match day) might be beneficial, as the coaches oftentimes worked for only one season for a club.

As prior evidence on performance-based promotion is inconsistent (for an overview, see Schleu & Hüffmeier, 2021) and our results did not indicate a substantial link between EP and LP, the empirical evidence questions the general validity of the logic underlying performance-based promotion. A part of the variability in the results could potentially be explained by the varying importance of the different theoretical perspectives for explaining the EP-LP link. Hence, it might be promising to theorize on boundary conditions for the different theoretical perspectives to understand when, for instance, the follower-centric perspective is equally or even more important as the performance requirement perspective.

Limitations

Acknowledging the limitations of our research, we would like to point out, first, that we only examined the association between EP and LP and tested the three theoretical perspectives (on how EP relates to LP) independently. While we based our theorizing concerning the three perspectives on the respective assumptions about underlying mechanisms, our data did not allow testing these mechanisms. Obviously, research on performance-based promotion would profit from examining the proposed mediators. This

approach would also provide relevant insights about the explained variance of the different proposed mechanisms (see Schleu & Hüffmeier, 2021). Hence, we suggest that future research employs designs allowing for a comparative and more comprehensive evaluation of the underlying mechanisms of the three perspectives.

Second, as our study design is non-experimental (i.e., an observational field study), we could face endogeneity-related issues (see Antonakis, 2017; Antonakis et al., 2010). To limit the related risks, we relied on objective—rather than subjective—performance measures that provided us with data of high content validity (Quinones et al., 1995; Sturman, 2003) and avoided confounding effects due to biases (see Ciancetta & Roch, 2021; Kossek & Buzzanell, 2018). Further, we collected panel data (see Mackey, 2008) and included relevant (control) variables in our analyses to avoid omitted variable bias affecting the relation between EP and LP (see Antonakis et al., 2010), such as team-level variables (i.e., team quality measures).

Third, our sample is range-restricted in the criterion, which is common in personnel selection research (see Sackett & Yang, 2000): While our data entail all head coaches of Germany's first soccer division, obviously those who tried to obtain a head coach position but failed to do so are not represented. However, the common range-restriction scenarios (cf. Sackett & Yang, 2000) should not apply to our study, as we gathered data from several organizations (i.e., soccer clubs of the Bundesliga) and the whole population of Bundesliga coaches. Hence, our analyses should not be affected severely by range-restriction.

Practical Implications

Our results suggest that performance-based promotion has at most a low validity for leader selection, at least in the high-stakes context of our study. Considering the importance of leaders for an organization (see Montano et al., 2017), selection decisions based on low-validity methods are very costly (Cronbach & Gleser, 1965; Schmidt & Hunter, 1998). While we are cautious not to overstretch the implications of our results—as prior empirical evidence

is inconclusive (Schleu & Hüffmeier, 2021)—many practitioners would likely benefit from questioning and adapting their routine promotion procedures. Therefore, we would like to point out two ways to improve the validity of performance-based promotion. First, as our results indicated initial support for the performance requirements perspective, practitioners might focus on the performance requirements of the vacant leader position to improve the validity of the performance-based promotion strategy. To identify relevant performance requirements, conducting a systematic job analysis for the vacant leader position should be helpful. An additional job analysis of the respective employee position allows to identify the performance requirements indicated by EP (see Hesketh & Robertson, 1993). This approach would allow identifying positions with a high overlap of performance requirements of both (employee and leader) positions—and thereby ensure a preferably high validity of performance-based promotion. Further, this approach would allow considering only performance aspects of prior EP that are relevant for the later leader position. Thereby, this approach should improve the selection of candidates (see Wernimont & Campbell, 1968).

Second, organizations might review—and if necessary adapt—their performance assessment concerning the following criteria to maximize the validity: Does the performance evaluation follow a standardized approach (i.e., are relevant criteria defined and examples provided; see Schleicher et al. 2018)? Are the evaluating leaders trained in the procedure, but also in recognizing and avoiding potential biases (see Amis et al., 2020; Kossek & Buzzanell, 2018; van Dijk et al., 2020)? Could the performance be assessed by more than one rater (see Harari & Viswesvaran, 2018)? Could EP be complemented by another indicator (e.g., a personality test indicating central characteristics for the vacant position) to increase the validity (see Schmidt & Hunter, 1998)? All those adaptations have the potential to optimize the validity of the performance assessment and thereby performance-based promotion.

Beyond its validity, practitioners need to account for effects on the organizational

level (Wright & Boswell, 2002) when evaluating the overall merit of performance-based promotion. As performance-based promotion rewards good performance (Kim, 2019; Scully, 2002), this promotion strategy should influence the organization's work culture to focus on performance. Further, performance-based promotion should increase perceived career opportunities in the organization (Webster & Beehr, 2012), as employees perceive this approach as fairer than more arbitrary approaches (Beehr et al., 2004). Hence, performance-based promotion strategies should attract talented applicants and motivate employees (Gruman & Saks, 2011). Thus, when practitioners adapt performance-based promotion to increase its validity, they should be careful not to undermine the positive side effects of this strategy.

Conclusion

Performance-based promotion is a face-valid approach to fill leader positions and currently a prevalent strategy (Church et al., 2021). However, extant empirical evidence has been inconsistent regarding this strategy's merit (Schleu & Hüffmeier, 2021). Our work has contrasted three theoretical perspectives on performance-based promotion and tested two proposed moderators (i.e., time and job complexity of the employee position) to potentially resolve previously inconsistent results. Our results support the performance requirements perspective (Zaccaro et al., 2018) regarding the predictive validity of EP for LP. Further, we found only very limited and inconsistent evidence in accordance with the follower-centric perspective (see Uhl-Bien et al., 2014) and no evidence supporting TEL (Goodall & Bäker, 2015). Thus, practitioners may be well-advised to focus on the respective performance requirements of the leader (and the employee) position when evaluating the EP of potential candidates. Shifting the focus on required characteristics holds the potential to improve the validity of performance-based promotion decisions—and consequently leader selection.

References

- Acock, A. C. (2014). *A gentle introduction to Stata* (4th ed.). Stata Press.
- Amis, J. M., Mair, J., & Munir, K. A. (2020). The organizational reproduction of inequality. *Academy of Management Annals*, 14(1), 195–230. DOI: 10.5465/annals.2017.0033
- Antonakis, J. (2017). On doing better science: From thrill of discovery to policy implications. *The Leadership Quarterly*, 28(1), 5–21. DOI: 10.1016/j.leaqua.2017.01.006
- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly*, 21(6), 1086–1120. DOI: 10.1016/j.leaqua.2010.10.010
- Asher, J. J., & Sciarrino, J. A. (1974). Realistic work sample tests: A review. *Personnel Psychology*, 27(4), 519–533. DOI: 10.1111/j.1744-6570.1974.tb01173.x
- Bartram, D. (2005). The great eight competencies: A criterion-centric approach to validation. *Journal of Applied Psychology*, 90(6), 1185–1203. DOI: 10.1037/0021-9010.90.6.1185
- Baumann, F., Friehe, T., & Wedow, M. (2011). General ability and specialization: Evidence from penalty kicks in soccer. *Journal of Sports Economics*, 12(1), 81–105. DOI: 10.1177/1527002510371194
- Beehr, T. A., Nair, V. N., Gudanowski, D. M., & Such, M. (2004). Perceptions of reasons for promotion of self and others. *Human Relations*, 57(4), 413–438. DOI: 10.1177/0018726704043894
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society. Series B (Methodological)*, 57(1), 289–300. DOI: 10.1111/j.2517-6161.1995.tb02031.x
- Benson, A., Li, D., & Shue, K. (2019). Promotions and the Peter Principle. *The Quarterly Journal of Economics*, 134(4), 2085–2134. DOI: 10.1093/qje/qjz022
- Borman, W. C., & Brush, D. H. (1993). More progress toward a taxonomy of managerial

- performance requirements. *Human Performance*, 6(1), 1–21. DOI: 10.1207/s15327043hup0601_1
- Brogden, H. E. (1949). When testing pays off. *Personnel Psychology*, 2(2), 171–183. DOI: 10.1111/j.1744-6570.1949.tb01397.x
- Cannella, A. A., & Rowe, W. G. (1995). Leader capabilities, succession, and competitive context: A study of professional baseball teams. *The Leadership Quarterly*, 6(1), 69–88. DOI: 10.1016/1048-9843(95)90005-5
- Carron, A. V., & Eys, M. A. (2012). *Group dynamics in sport* (4th ed.). Fitness Information Technology.
- Chelladurai, P. (2013). A personal journey in theorizing in sport management. *Sport Management Review*, 16(1), 22–28. DOI: 10.1016/j.smr.2011.12.003
- Chelladurai, P., & Carron, A. V. (1977). A reanalysis of formal structure in sport. *Canadian Journal of Applied Sport Sciences*, 2, 9–14.
- Church, A. H., Rotolo, C. T., Ginther, N. M., & Levine, R. (2015). How are top companies designing and managing their high-potential programs? A follow-up talent management benchmark study. *Consulting Psychology Journal: Practice and Research*, 67(1), 17–47.
- Church, A. H., Guidry, B. W., Dickey, J. A., & Scrivani, J. A. (2021). Is there potential in assessing for high-potential? Evaluating the relationships between performance ratings, leadership assessment data, designated high-potential status and promotion outcomes in a global organization. *The Leadership Quarterly*, 32(5), 101516. DOI: 10.1016/j.leaqua.2021.101516
- Ciancetta, L. M., & Roch, S. G. (2021). Backlash in performance feedback: Deepening the understanding of the role of gender in performance appraisal. *Human Resource Management*, 60(4), 641–657. DOI: 10.1002/hrm.22059
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence

- Erlbaum Associates. DOI: 10.1037/cpb0000030
- Cribbie, R. A. (2007). Multiplicity control in structural equation modeling. *Structural Equation Modeling*, 14(1), 98–112. DOI: 10.1080/10705510709336738
- Cronbach, L. J., & Gleser, G. C. (1965). *Psychological tests and personnel decisions* (2nd ed.). University of Illinois Press Psychological tests and personnel decisions.
- Crust, L., & Lawrence, I. (2006). A review of leadership in sport: Implications for football management. *Athletic Insight: The Online Journal of Sport Psychology*, 8(4), 28–48.
- Dane, E. (2010). Reconsidering the trade-off between expertise and flexibility: A cognitive entrenchment perspective. *Academy of Management Review*, 35(4), 579–603. DOI: 10.5465/AMR.2010.53502832
- Dawson, P., & Dobson, S. (2002). Managerial efficiency and human capital: An application to English association football. *Managerial and Decision Economics*, 23(8), 471–486. DOI: 10.1002/mde.1098
- Day, D. V., Harrison, M. M., & Halpin, S. M. (2009). *An integrative approach to leader development: Connecting adult development, identity, and expertise*. Psychology Press. DOI: 10.4324/9780203809525
- De Hoogh, A. H. B., Den Hartog, D. N., & Koopman, P. L. (2005). Linking the Big Five-Factors of personality to charismatic and transactional leadership: Perceived dynamic work environment as a moderator. *Journal of Organizational Behavior*, 26(7), 839–865. DOI: 10.1002/job.344
- DeRue, D. S., Nahrgang, J. D., Wellman, N. E. D., & Humphrey, S. E. (2011). Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel Psychology*, 64(1), 7–52. DOI: 10.1111/j.1744-6570.2010.01201.x
- Diedenhofen, B., & Musch, J. (2015). cocor: A comprehensive solution for the statistical comparison of correlations. *PloS one*, 10(4), e0121945. DOI:

10.1371/journal.pone.0121945

Enders, C. K. (2010). *Applied missing data analysis*. Guilford Press.

Ensari, N., & Murphy, S. E. (2003). Cross-cultural variations in leadership perceptions and attribution of charisma to the leader. *Organizational Behavior and Human Decision Processes*, 92(1-2), 52–66. DOI: 10.1016/S0749-5978(03)00066-9

Ericsson, K. A., Charness, N., Feltovich, P. J., & Hoffman, R. R. (Eds.). (2006). *The Cambridge handbook of expertise and expert performance*: Cambridge University Press. DOI: 10.1017/CBO9780511816796

Fischer, T., Dietz, J., & Antonakis, J. (2017). Leadership process models: A review and synthesis. *Journal of Management*, 43(6), 1726–1753. DOI: 10.1177/0149206316682830

Frick, B. (2010). The football player's labor market: Recent developments and economic evidence. In J. Galí & X. Vives (Eds.), *Football Economics. Proceedings of the Armand Carabén Workshop on Sports Economics* (Vol. 4, pp. 103–140). Barcelona: IESE Business School, University of Navarra. Retrieved from <http://www.iese.edu/research/pdfs/ESTUDIO-135.pdf#page=105>

Gallup. (2014). *Engagement Index Deutschland 2014 [Engagement Index Germany 2014]*.

Goodall, A. H., & Bäker, A. (2015). A theory exploring how expert leaders influence performance in knowledge-intensive organizations. In I. Welpe, J. Wollersheim, S. Ringelhan, & M. Osterloh (Eds.), *Incentives and performance. Governance of research organizations* (pp. 49–67). Springer International Publishing Switzerland. DOI: 10.1007/978-3-319-09785-5_4

Goodall, A. H., & Pogrebná, G. (2015). Expert leaders in a fast-moving environment. *The Leadership Quarterly*, 26(2), 123–142. <https://doi.org/10.1016/j.leaqua.2014.07.009>

Gruman, J. A., & Saks, A. M. (2011). Performance management and employee engagement. *Human Resource Management Review*, 21(2), 123–136. DOI: 10.1016/j.hrmr.2010.09.004

- Grusky, O. (1963). The effects of formal structure on managerial recruitment: A study of baseball organization. *Sociometry*, 26(3), 345–353. DOI: 10.2307/2786074
- Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology*, 60(2), 159–170. DOI: 10.1037/h0076546
- Haslam, S. A., Reicher, S., & Platow, M. (2011). *The new psychology of leadership: Identity, influence, and power*. Psychology Press. DOI: 10.4324/9780203833896
- Harari, M., & Viswesvaran, C. (2018). Individual job performance. In D. S. Ones, N. Anderson, & C. Viswesvaran (Eds.). *The sage handbook of industrial, work and organizational psychology* (pp. 55–72). SAGE Publications. DOI: 10.4135/9781473914940.n4
- Hesketh, B., & Robertson, I. (1993). Validating personnel selection: A process model for research and practice. *International Journal of Selection and Assessment*, 1(1), 3–17. DOI: 10.1111/j.1468-2389.1993.tb00079.x
- Hogg, M. A. (2001). A social identity theory of leadership. *Personality and Social Psychology Review*, 5(3), 184–200. https://doi.org/10.1207/S15327957PSPR0503_1
- Hunter, J. E., Schmidt, F. L., & Judiesch, M. K. (1990). Individual differences in output variability as a function of job complexity. *Journal of Applied Psychology*, 75(1), 28–42. DOI: 10.1037/0021-9010.75.1.28
- Kark, R., & Van Dijk, D. (2007). Motivation to lead, motivation to follow: The role of the self-regulatory focus in leadership processes. *Academy of Management Review*, 32(2), 500–528. DOI: 10.5465/amr.2007.24351846
- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). Wiley.
- Kim, S. L. (2019). Enticing high performers to stay and share their knowledge: The importance of trust in leader. *Human Resource Management*, 58(4), 341–351. DOI: 10.1002/hrm.21955

- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford Press.
- Kossek, E. E., & Buzzanell, P. M. (2018). Women's career equality and leadership in organizations: Creating an evidence-based positive change. *Human Resource Management, 57*(4), 813–822. DOI: 10.1002/hrm.21936
- Kouzes, J. M., & Posner, B. Z. (2011). *Credibility: How leaders gain and lose it, why people demand it*. Jossey-Bass. DOI: 10.1002/9781118983867
- Lord, R. G., & Dinh, J. E. (2014). What Have We Learned That Is Critical in Understanding Leadership Perceptions and Leader-Performance Relations? *Industrial and Organizational Psychology, 7*(2), 158–177. DOI: 10.1111/iops.12127
- Lord, R. G., Foti, R. J., & Vader, C. L. de. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational Behavior and Human Performance, 34*(3), 343–378. DOI: 10.1016/0030-5073(84)90043-6
- Lord, R. G., & Maher, K. J. (2002). *Leadership and information processing: Linking perceptions and performance. People and organizations*. Routledge. DOI: 10.4324/9780203423950
- Mackey, A. (2008). The effect of CEOs on firm performance. *Strategic Management Journal, 29*(12), 1357–1367. DOI: 10.1002/smj.708
- Meindl, J. R. (1995). The romance of leadership as a follower-centric theory: A social constructionist approach. *The Leadership Quarterly, 6*(3), 329–341. DOI: 10.1016/1048-9843(95)90012-8
- Montano, D., Reeske, A., Franke, F., & Hüffmeier, J. (2017). Leadership, followers' mental health and job performance in organizations: A comprehensive meta-analysis from an occupational health perspective. *Journal of Organizational Behavior, 38*(3), 327–350. DOI: 10.1002/job.2124

- Muehlheusser, G., Schneemann, S., Sliwka, D., & Wallmeier, N. (2018). The contribution of managers to organizational success: Evidence from German soccer. *Journal of Sports Economics*, 19(6), 786–819. DOI: 10.1177/1527002516674760
- Murphy, K. R., & Cleveland, J. N. (1995). *Understanding performance appraisal: Social, organizational and goal-based perspectives*. Sage Publications.
- Peter, L. J., & Hull, R. (Eds.). (2011). *The Peter Principle: Why things always go wrong* (1st ed.). Harper Business.
- Phillips, J. S., & Lord, R. G. (1981). Causal attributions and perceptions of leadership. *Organizational Behavior and Human Performance*, 28(2), 143–163. DOI: 10.1016/0030-5073(81)90020-9
- Porter, T., Riesenmy, K., & Fields, D. (2016). Work environment and employee motivation to lead: Moderating effects of personal characteristics. *American Journal of Business*, 31(2), 66–84. DOI: 10.1108/AJB-05-2015-0017
- Quíñones, M. A., Ford, J. K., & Teachout, M. S. (1995). The relationship between work experience and job performance: A conceptual and meta-analytic review. *Personnel Psychology*, 48(4), 887–910. DOI: 10.1111/j.1744-6570.1995.tb01785.x
- Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal*, 53(3), 617–635. DOI: 10.5465/amj.2010.51468988
- Rogers, E. M., & Bhowmik, D. K. (1970). Homophily-heterophily: Relational concepts for communication research. *Public Opinion Quarterly*, 34(4), 523–538. DOI: 10.1086/267838
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling and more. Version 0.5–12 (BETA). *Journal of Statistical Software*, 48(2), 1–36. DOI: 10.18637/jss.v048.i02

- Sackett, P. R., & Yang, H. (2000). Correction for range restriction: An expanded typology. *Journal of Applied Psychology*, 85(1), 112–118. DOI: 10.1037/0021-9010.85.1.112
- Salomon, G., & Perkins, D. N. (1989). Rocky roads to transfer: Rethinking mechanism of a neglected phenomenon. *Educational Psychologist*, 24(2), 113–142. DOI: 10.1207/s15326985ep2402_1
- Schleicher, D. J., Baumann, H. M., Sullivan, D. W., Levy, P. E., Hargrove, D. C., & Barros-Rivera, B. A. (2018). Putting the system into performance management systems: A review and agenda for performance management research. *Journal of Management*, 44(6), 2209–2245. DOI: 10.1177/0149206318755303
- Schleu, J. E., & Hüffmeier, J. (2021). Simply the best? A systematic literature review on the predictive validity of employee performance for leader performance. *Human Resource Management Review*, 31(2), 100777. DOI: 10.1016/j.hrmr.2020.100777
- Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124(2), 262–274. DOI: 10.1037/0033-2909.124.2.262
- Schyns, B., & Meindl, J. R. (Eds.). (2005). *Implicit leadership theories: Essays and explorations*. Information Age Pub.
- Scully, M. A. (2002). Confronting errors in the meritocracy. *Organization*, 9(3), 396–401.
- Smith, M. B., Hill, A. D., Wallace, J. C., Recendes, T., & Judge, T. A. (2018). Upsides to dark and downsides to bright personality: A multidomain review and future research agenda. *Journal of Management*, 44(1), 191–217. DOI: 10.1177/0149206317733511
- Steffens, N. K., Haslam, S. A., Reicher, S. D., Platow, M. J., Fransen, K., Yang, J., ..., Boen, F. (2014). Leadership as social identity management: Introducing the Identity Leadership Inventory (ILI) to assess and validate a four-dimensional model. *The Leadership Quarterly*, 25(5), 1001–1024. DOI: 10.1016/j.leaqua.2014.05.002

Steffens, N. K., Munt, K. A., van Knippenberg, D., Platow, M. J., & Haslam, S. A. (2021).

Advancing the social identity theory of leadership: A meta-analytic review of leader group prototypicality. *Organizational Psychology Review*, 11(1), 35–72. DOI:

10.1177/2041386620962569

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological*

Bulletin, 87(2), 245–251. DOI: 10.1037/0033-2909.87.2.245

Sturman, M. (2007). The past, present, and future of dynamic performance research,

Research in Personnel and Human Resources Management, 26, 49–110. DOI:

10.1016/S0742-7301(07)26002-5

Tesluk, P. E., & Jacobs, R. R. (1998). Toward an integrated model of work experience.

Personnel Psychology, 51(2), 321–355. DOI: 10.1111/j.1744-6570.1998.tb00728.x

Tett, R. P., Guterman, H. A., Bleier, A., & Murphy, P. J. (2000). Development and content

validation of a "hyperdimensional" taxonomy of managerial competence. *Human*

Performance, 13(3), 205–251. DOI: 10.1207/S15327043HUP1303_1

Uhl-Bien, M., Riggio, R. E., Lowe, K. B., & Carsten, M. K. (2014). Followership theory: A

review and research agenda. *The Leadership Quarterly*, 25(1), 83–104. DOI:

10.1016/j.leaqua.2013.11.007

van Dijk, H., Kooij, D., Karanika-Murray, M., De Vos, A., & Meyer, B. (2020). Meritocracy

a myth? A multilevel perspective of how social inequality accumulates through work.

Organizational Psychology Review, 10(3-4), 240–269. DOI: 10.1177/2041386620930063

Van Iddekinge, C. H., Aguinis, H., Mackey, J. D., & DeOrtentiis, P. S. (2018). A meta-

analysis of the interactive, additive, and relative effects of cognitive ability and motivation on performance. *Journal of Management*, 44(1), 249–279. DOI:

10.1177/0149206317702220

Van Iddekinge, C. H., Arnold, J. D., Frieder, R. E., & Roth, P. L. (2019). A meta-analysis of

- the criterion-related validity of prehire work experience. *Personnel Psychology*, 72(4), 571–598. DOI: 10.1111/peps.12335
- Webster, J. R., & Beehr, T. A. (2013). Antecedents and outcomes of employee perceptions of intra-organizational mobility channels. *Journal of Organizational Behavior*, 34(7), 919–941. DOI: 10.1002/job.1823
- Weick, K. E. (1995). *Sensemaking in organizations (2nd ed.)*. Foundations for organizational science. Sage Publications.
- Wernimont, P. F., & Campbell, J. P. (1968). Signs, samples, and criteria. *Journal of Applied Psychology*, 52(5), 372–376. DOI: 10.1037/h0026244
- Wolfe, R. A., Weick, K. E., Usher, J. M., Terborg, J. R., Poppo, L., Murrell, A. J., ..., & Jourdan, J. S. (2005). Sport and organizational studies: Exploring synergy. *Journal of Management Inquiry*, 14(2), 182–210. DOI: 10.1177/1056492605275245
- Wright, P., & Boswell, W. R. (2002). Desegregating HRM: A review and synthesis of micro and macro human resource management research. *Journal of Management*, 28(3), 247–276. DOI: 10.1016/S0149-2063(02)00128-9
- Zaccaro, S. J. (2012). Individual differences and leadership: Contributions to a third tipping point. *The Leadership Quarterly*, 23(4), 718–728. DOI: 10.1016/j.leaqua.2012.05.001
- Zaccaro, S. J., Green, J. P., Dubrow, S., & Kolze, M. (2018). Leader individual differences, situational parameters, and leadership outcomes: A comprehensive review and integration. *The Leadership Quarterly*, 29(1), 2–43. DOI: 10.1016/j.leaqua.2017.10

Table 1

Experts (N = 54) rated the Complexity of Each Player Position Based on the Group Structure Model (Chelladurai & Carron, 1977; Grusky, 1963)

	Goalkeeper (SD)	Defender (SD)	Midfielder (SD)	Forward (SD)
Propinquity				
How well could a player at the respective position oversee the build-up of the match?	3.26 (0.85)	3.04 (0.70)	3.07 (0.67)	2.37 (0.76)
How central was a player on this position to the game for his team?	2.20 (1.07)	2.48 (0.75)	3.54 (0.61)	2.67 (0.82)
Averaged	2.73 (0.77)	2.76 (0.61)	3.31 (0.54)	2.52 (0.61)
Task Dependence				
To what extent were the players in all other positions dependent on the work of a player in this position?	1.96 (0.99)	2.31 (0.72)	3.20 (0.68)	3.28 (0.98)
Complexity				
	2.35 (0.77)	2.54 (0.58)	3.25 (0.49)	2.90 (0.62)

Table 2

Means, standard deviations, and correlations with confidence intervals

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Player Match Count	-0.00	1.00											
2. Average Player Rating	-0.00	1.00	.01 [-.13, .16]										
3. Complexity	-0.00	1.00	-.05 [-.17, .08]	-.24** [-.37, -.10]									
4. PPG & Goal Ratio t1	0.15	1.12	.04 [-.09, .16]	.06 [-.09, .21]	-.02 [-.13, .09]								
5. Coach Match Count t1	-0.19	0.91	.06 [-.07, .19]	.10 [-.04, .25]	.07 [-.05, .18]	.10 [-.01, .21]							
6. PPG & Goal Ratio t2	-0.04	0.84	-.00 [-.14, .13]	.16* [.01, .31]	-.04 [-.16, .08]	.38** [.27, .48]	.28** [.17, .39]						
7. Coach Match Count t2	0.11	1.00	-.03 [-.16, .10]	.18* [.02, .33]	-.03 [-.15, .09]	.14* [.02, .26]	.49** [.39, .57]	.51** [.41, .59]					
8. PPG & Goal Ratio t3	-0.07	0.86	-.03 [-.17, .12]	-.06 [-.23, .12]	.06 [-.07, .19]	.22** [.09, .34]	.19** [.07, .32]	.40** [.28, .50]	.28** [.16, .39]				
9. Coach Match Count t3	0.13	1.08	-.03 [-.18, .11]	-.02 [-.19, .15]	.01 [-.12, .14]	.13* [.00, .26]	.31** [.19, .42]	.38** [.26, .48]	.49** [.39, .58]	.58** [.49, .66]			
10. Teamquality t1	-0.05	0.97	.07 [-.08, .22]	.25** [.09, .40]	-.11 [-.25, .03]	.43** [.31, .53]	.17* [.03, .30]	.26** [.11, .39]	.06 [-.09, .21]	.16 [-.00, .32]	.08 [-.09, .24]		
11. Teamquality t2	-0.06	0.98	.00 [-.16, .17]	.29** [.11, .45]	-.07 [-.21, .08]	.37** [.24, .49]	.24** [.09, .37]	.46** [.34, .57]	.29** [.15, .42]	.38** [.23, .51]	.23** [.07, .38]	.63** [.53, .72]	
12. Teamquality t3	-0.05	0.95	.14 [-.04, .31]	.13 [-.08, .32]	-.10 [-.26, .07]	.15 [-.02, .30]	.23** [.07, .38]	.47** [.34, .59]	.35** [.20, .49]	.47** [.33, .59]	.37** [.22, .50]	.40** [.24, .54]	.72** [.63, .80]

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.

Table 3*Model 1-6 Testing Hypotheses 1 – 4***Model 1 - Criterion: PPG**Model fit: $\chi^2 = 51.10$, $df = 29$, $p = .007$, $CFI = 0.94$, $RMSEA = .05$, $SRMR = .05$, $n = 309$

	t1		t2		t3	
	β	SE	β	SE	β	SE
Number of played matches	0.01	0.06	0.02	0.06	-0.04	0.06
Complexity	-0.01	0.06	-0.00	0.05	0.06	0.06
Number of played matches x Complexity	-0.00	0.07	0.05	0.06	0.13	0.06
Team quality (t1)	0.46***	0.06				
Team quality (t2)			0.35***	0.06		
Team quality (t3)					0.40*	0.13
Leader performance (t1)			0.19*	0.06		
Continuous engagement with club (t1-t2)			0.16*	0.10		
Leader performance (t2)					0.20	0.11
Continuous engagement with club (t2-t3)					0.04	0.12

Model 2 - Criterion: Goal ratioModel fit: $\chi^2 = 35.39$, $df = 29$, $p = .192$, $CFI = 0.98$, $RMSEA = .03$, $SRMR = .05$, $n = 309$

	t1		t2		t3	
	β	SE	β	SE	β	SE
Number of played matches	0.03	0.09	-0.02	0.04	-0.05	0.05
Complexity	0.06	0.08	0.00	0.04	0.07	0.05
Number of played matches x Complexity	0.07	0.09	0.01	0.04	0.15	0.05
Team quality (t1)	0.34***	0.09				
Team quality (t2)			0.44***	0.05		
Team quality (t3)					0.38*	0.11
Leader performance (t1)			0.25	0.07		
Continuous engagement with club (t1-t2)			0.12	0.08		
Leader performance (t2)					0.33	0.15
Continuous engagement with club (t2-t3)					-0.01	0.09

(Continued on the next page)

Model 3 - Criterion: Number of coached matchesModel fit: $\chi^2 = 31.75$, $df = 27$, $p = .242$, $CFI = 0.99$, $RMSEA = .02$, $SRMR = .05$, $n = 309$

	t1		t2		t3	
	β	SE	β	SE	β	SE
Number of played matches	0.07	0.06	-0.01	0.15	-0.06	0.07
Complexity	0.11	0.05	0.04	0.15	0.04	0.06
Number of played matches x Complexity	0.02	0.06	0.12	0.11	0.06	0.08
Team quality (t1)	0.22***	0.05				
Team quality (t2)			0.36	0.29		
Team quality (t3)					0.15	0.11
Leader performance (t1)			-0.37	1.34		
Continuous engagement with club (t1-t2)			0.55	0.87		
Leader performance (t2)					0.57***	0.14
Continuous engagement with club (t2-t3)					0.12	0.16

Model 4 - Criterion: PPGModel fit: $\chi^2 = 52.99$, $df = 39$, $p = .067$, $CFI = 0.96$, $RMSEA = .05$, $SRMR = .08$, $n = 181$

	t1		t2		t3	
	β	SE	β	SE	β	SE
Average player rating	0.02	0.09	0.05	0.08	-0.16	0.11
Complexity	0.02	0.07	0.03	0.06	0.04	0.08
Average player rating x Complexity	-0.08	0.07	-0.10	0.07	0.01	0.08
Team quality (t1)	0.43***	0.07				
Team quality (t2)			0.46***	0.07		
Team quality (t3)					0.27	0.13
Leader performance (t1)			-0.21	0.14		
Continuous engagement with club (t1-t2)			0.29***	0.13		
Leader performance (t2)					0.65*	0.25
Continuous engagement with club (t2-t3)					-0.13	0.21

(Continued on the next page)

Model 5 - Criterion: goal ratioModel fit: $\chi^2 = 52.25$, $df = 40$, $p = .093$, $CFI = 0.97$, $RMSEA = .04$, $SRMR = .08$, $n = 181$

	t1		t2		t3	
	β	SE	β	SE	β	SE
Average player rating	-0.08	0.16	0.05	0.04	-0.01	0.04
Complexity	0.10	0.11	-0.02	0.04	0.06	0.04
Average player rating x Complexity	-0.10	0.11	-0.04	0.04	0.04	0.04
Team quality (t1)	0.30*	0.16				
Team quality (t2)			0.34***	0.05		
Team quality (t3)					0.30	0.08
Leader performance (t1)			0.30	0.08		
Continuous engagement with club (t1-t2)			0.17	0.09		
Leader performance (t2)					0.40***	0.09
Continuous engagement with club (t2-t3)					0.01	0.08

Model 6 - Criterion: Number of coached matchesModel fit: $\chi^2 = 44.94$, $df = 39$, $p = .237$, $CFI = 0.98$, $RMSEA = .03$, $SRMR = .07$, $n = 181$

	t1		t2		t3	
	β	SE	β	SE	β	SE
Average player rating	0.08	0.06	0.08	0.06	-0.11	0.08
Complexity	0.05	0.06	-0.04	0.06	0.05	0.08
Average player rating x Complexity	0.13	0.06	0.02	0.05	-0.07	0.08
Team quality (t1)	0.18*	0.06				
Team quality (t2)			0.15	0.07		
Team quality (t3)					0.15	0.12
Leader performance (t1)			0.28***	0.08		
Continuous engagement with club (t1-t2)			0.36***	0.13		
Leader performance (t2)					0.39***	0.09
Continuous engagement with club (t2-t3)					0.22*	0.17

Notes. All p -Values were adjusted with Benjamini and Hochberg's (1995) false discovery rate controlling step-up Bonferroni procedure as recommended for structural equation models.

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Table 4

Model 1-6 Testing the Predictive Validity of Player Performance for Aggregated Coach Performance (i.e., Aggregated Over the Entire Career)

	β	SE
Model 1 (criterion: PPG)		
Model fit: $\chi^2 = 0.35$, $df = 3$, $p = .951$, $CFI = 1.00$, $RMSEA = .00$, $SRMR = .00$, $n = 309$		
Number of played matches	-0.02	0.06
Complexity	-0.03	0.06
Number of played matches x Complexity	0.02	0.06
Model 2 (criterion: goal ratio)		
Model fit: $\chi^2 = 1.76$, $df = 3$, $p = .625$, $CFI = 1.00$, $RMSEA = .00$, $SRMR = .00$, $n = 309$		
Number of played matches	-0.01	0.06
Complexity	0.06	0.06
Number of played matches x Complexity	0.05	0.06
Model 3 (criterion: number of coached matches)		
Model fit: $\chi^2 = 8.55$, $df = 3$, $p = .036$, $CFI = 1.00$, $RMSEA = .00$, $SRMR = .00$, $n = 309$		
Number of played matches	-0.05	0.06
Complexity	0.12	0.06
Number of played matches x Complexity	0.10	0.06
Model 4 (criterion: PPG)		
Model fit: $\chi^2 = 0.80$, $df = 2$, $p = .669$, $CFI = 1.00$, $RMSEA = .00$, $SRMR = .02$, $n = 181$		
Average player rating	0.17	0.07
Complexity	0.04	0.06
Average player rating x Complexity	-0.09	0.07
Model 5 (criterion: goal ratio)		
Model fit: $\chi^2 = 1.23$, $df = 2$, $p = .541$, $CFI = 1.00$, $RMSEA = .00$, $SRMR = .02$, $n = 181$		
Average player rating	0.18	0.07
Complexity	0.09	0.05
Average player rating x Complexity	-0.07	0.06
Model 6 (criterion: number of coached matches)		
Model fit: $\chi^2 = 0.47$, $df = 1$, $p = .495$, $CFI = 1.00$, $RMSEA = .00$, $SRMR = .02$, $n = 181$		
Average player rating	0.12	0.07
Complexity	0.19*	0.06
Average player rating x Complexity	0.05	0.06

Notes. All p -Values were adjusted with Benjamini and Hochberg's (1995) false discovery rate controlling step-up Bonferroni procedure as recommended for structural equation models.

* $p \leq .05$

Table 5*Model 1, 2, & 3 Testing Hypothesis 1c, 2c, and 3c*

	t1		t2		t3	
	β	SE	β	SE	β	SE
Model 1 (criterion: PPG)						
Model fit: $\chi^2 = 39.65$, $df = 18$, $p = .002$, $CFI = 0.95$, $RMSEA = .05$, $SRMR = .05$, $n = 407$						
Player experience (dummy)	0.07	0.11	0.02	0.12	-0.03	0.11
Team quality (t1)	0.44***	0.05				
Team quality (t2)			0.31***	0.04		
Team quality (t3)					0.35***	0.10
Leader performance (t1)			0.21**	0.06		
Continuous engagement with club (t1-t2)			0.14**	0.09		
Leader performance (t2)					0.27**	0.09
Continuous engagement with club (t2-t3)					0.01	0.10
Model 2 (criterion: goal ratio)						
Model fit: $\chi^2 = 28.08$, $df = 18$, $p = .061$, $CFI = 0.98$, $RMSEA = .04$, $SRMR = .05$, $n = 407$						
Player experience (dummy)	0.09*	0.12	0.03	0.09	-0.05	0.12
Team quality (t1)	0.33***	0.07				
Team quality (t2)			0.39***	0.05		
Team quality (t3)					0.28*	0.09
Leader performance (t1)			0.24*	0.05		
Continuous engagement with club (t1-t2)			0.11*	0.07		
Leader performance (t2)					0.37*	0.14
Continuous engagement with club (t2-t3)					-0.06	0.10
Model 3 (criterion: number of coached matches)						
Model fit: $\chi^2 = 47.66$, $df = 19$, $p \leq .001$, $CFI = 0.95$, $RMSEA = .06$, $SRMR = .06$, $n = 407$						
Player experience (dummy)	-0.03	0.09	0.08	0.11	0.01	0.13
Team quality (t1)	0.25***	0.04				
Team quality (t2)			0.21***	0.05		
Team quality (t3)					0.18*	0.09
Leader performance (t1)			0.29***	0.05		
Continuous engagement with club (t1-t2)			0.31***	0.09		
Leader performance (t2)					0.36***	0.07
Continuous engagement with club (t2-t3)					0.21***	0.11

Notes. All p -Values were adjusted with Benjamini and Hochberg's (1995) false discovery rate controlling step-up Bonferroni procedure as recommended for structural equation models.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Figure 1

Visualization of Model 1 (testing Hypotheses 1–4)

Note. Visualization of Model 1 testing the predictive validity of player performance (i.e., number of played matches) for coach performance (i.e., points per game; PPG) testing Hypotheses 1 – 4.