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# The Relationship Between Employees' Objective Internal and External Pay Standing and Their Job Performance: A Within-Person Analysis

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## Abstract

**Purpose** Researchers have paid little attention to the relationship between employees' objective internal and external pay standing and their job performance. Moreover, few studies have considered that employees' objective pay standing is dynamic; that is, it changes over time. In this study, we analyze the relationship between changes in employees' objective internal and external pay standing and their job performance.

**Design/Methodology/Approach** We test the hypotheses using data for players in the National Basketball Association over a period of 12 seasons ( $n = 4830$ ).

**Findings** Decreases in employees' objective internal and external pay standing are negatively related to their task performance. Furthermore, decreases in employees' objective internal pay standing, but not in their external pay standing, are negatively related to their contextual performance.

**Implications** Analyzing the relationship between changes in employees' objective internal and external pay standing and their job performance adds to our understanding of the individual-level consequences of pay dispersion.

**Originality/Value** This is one of the first studies to analyze the relationship between employees' objective internal and external pay standing and their job performance. Moreover, this is one of the first studies that considers that employees' objective internal and external pay standing changes, for

example, because the external and internal labor markets change. The study contributes to research on employee compensation and salary, and to research on pay disparities.

**Keywords** Pay disparities · External and internal pay standing · Pay dispersion · Job performance · Salary · Within-person design

## Introduction

Employee compensation affects employee attitudes and behaviors (Downes and Choi 2014; Gupta and Shaw 2014) and organizational performance (see, e.g., Brick et al. 2006). Research indicates that an employee's actual pay level and relative pay level are important predictors of attitudes and behaviors (e.g., Rynes et al. 2004). Relative pay level refers to the individual's salary compared to other referents, such as colleagues or employees in other organizations. The consensus is that pay dispersion—that is, the extent of “differences in pay levels between individuals” in an organization (Shaw 2014, p. 522)—is crucial for organizations.

Much attention has been paid to the individual-level consequences of pay disparities (for a review, see Shaw 2014). Researchers have distinguished between internal pay disparities, which are defined as differences in employee pay within an organization, and external pay disparities, which refer to pay differentials between organizations. Studies have shown that employees' pay relative to colleagues (i.e., internal pay standing) and their salary relative to employees in other organizations who perform similar tasks (i.e., external pay standing) are related to employee behavior and attitudes, such as pay satisfaction

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(see, e.g., Harris et al. 2008; Williams et al. 2006), absenteeism (see, e.g., Della Torre et al. 2015), and turnover (see, e.g., Wade et al. 2006; Wang et al. 2015). These studies have contributed to our understanding of how employees react to pay disparities. However, two important gaps remain: First, although several studies analyzed the relationship between employees' internal pay standing and their job performance (see, e.g., Bloom 1999; Pfeffer and Langton 1993), researchers have paid little attention to the relationship between employees' external pay standing and their job performance, although job performance is one of the most important individual-level outcome variables (see Cascio and Aguinis 2008; Varela and Landis 2010); for instance, Campbell and Wiernik (2015, p. 48) argued that "without individual performance there is no team performance, no unit performance, no organizational performance, no economic sector performance, no GDP." Thus, scholars have called for research that analyzes the relationship between employees' external pay standing and their job performance (Leana and Meuris 2015).

Second, many prior studies have assumed that employees' internal and external pay standing is static. Thus, researchers (e.g., Bloom 1999; Seo et al. 2015) have analyzed differences between individuals with high and low pay standing (i.e., the *between*-person effect). However, internal and external pay standing might be subject to changes over time; for instance, employees might receive a pay raise, or the salary of external or internal pay referents might increase. This dynamic perspective has thus far received little attention, although this perspective on employee pay standing is different. Instead of focusing on differences *between* employees who differ in internal and external pay standing, the dynamic perspective focuses on the question how employees react if their internal and external pay standing changes (i.e., *within*-person effect).

This study aims to address these gaps by analyzing the relationship between changes in employees' objective external and internal pay standing and their job performance. The analysis is based on data from players in the National Basketball Association (NBA). This article contributes to the literature in two ways. First, we contribute to research on pay dispersion by introducing a dynamic perspective. Few studies have considered that employee objective pay standing is subject to changes, for example, if market wages increase (Williams et al. 2006). This study provides first insights into how such changes in employees' external and internal pay standing are related to their job performance.

Second, we contribute to research on the individual-level consequences of pay disparities. Although several prior studies analyzed the relationship between pay standing and employee attitudes (e.g., pay satisfaction,

see Williams et al. 2006) and behaviors (e.g., absenteeism, see Della Torre et al. 2015), scholars have rarely analyzed how employee pay standing is associated with job performance (for an exception, see Bloom 1999), particularly regarding employee external pay standing. The present study provides such an analysis. Furthermore, we distinguish between employees' task performance and their contextual performance to provide detailed insights into individual-level consequences of pay disparities.

## Theoretical Background and Hypotheses

### Pay and Job Performance

Managers often assume that pay is of little importance to employees (Rynes et al. 2004; Sanders et al. 2008), perhaps based on the self-reports of employees who say that they attach little significance to their salary. However, researchers have challenged this belief and provided evidence that pay is an important motivator for employees (see Leana and Meuris 2015).

Research on pay effects can be broadly classified into two perspectives (see Leana and Meuris 2015). The first perspective analyzes the effects of employees' actual pay. For instance, Jenkins et al.'s (1998) meta-analysis indicated that higher financial rewards (e.g., salary) are positively related to performance quantity, but not quality (see also Garbers and Konradt 2014). Salary is also related to employees' turnover decisions (see, e.g., Wade et al. 2006) and job satisfaction (see Judge et al. 2010). The second perspective focuses on the effects of income comparisons. According to this perspective, salary has a symbolic meaning; it expresses how much an organization values an employee. Theories such as relative deprivation theory (Crosby 1976) and equity theory (Adams 1963, 1965) indicate that whether employees perceive their pay as being fair depends on their pay compared to the pay of referent others (e.g., colleagues or employees in other organizations). Several studies have shown that employees' pay relative to referents is associated with work-related attitudes, such as pay equity perceptions (e.g., Trevor and Wazeter 2006), perceived pay fairness (e.g., Shore et al. 2006), and pay satisfaction (e.g., Williams et al. 2006), and behaviors, such as absenteeism (see, e.g., Della Torre et al. 2015) and turnover (see, e.g., Wade et al. 2006; Wang et al. 2015).

Both perspectives provide important insights into how pay affects employee attitudes and behavior. In the following, we concentrate on the income comparison perspective, although we acknowledge that actual pay is also associated with employee attitudes and behaviors.

## Pay Dispersion and Pay Standing

Today, many organizations have introduced a compensation system in which pay is dispersed among employees; researchers distinguish between horizontal pay dispersion, which refers to pay differences between employees at the same organizational level, and vertical pay dispersion, which refers to pay differences between employees at different hierarchical levels (see Trevor et al. 2012).

Employees give considerable attention to differences between their actual salaries and those of referents (Brown 2001; Trevor and Wazeter 2006). How employees react to pay differences depends on their pay standing—which is defined as their pay compared to referents' pay. Researchers broadly distinguish employees' internal pay standing—which is defined as their pay compared to the pay of colleagues within the same organization—and employees' external pay standing—which is defined as their pay compared to the pay of referents outside the organization. Because employees often lack information about referents' actual pay, employee pay standing is often subjective, which means that it depends on employees' beliefs about the salaries their referents received. However, in the context of this study, objective information about referents' salaries is available, which is why we focus on employees' objective pay standing.

The relationship between employees' pay standing and their work-related attitudes and behaviors is often explained using equity theory, which states that employees strive for a balance between their inputs (e.g., effort at work) and outcomes (e.g., salary) (Adams 1963). Individuals determine whether their inputs and outcomes are balanced by comparing their own input–outcome ratio with the referents' ratio (Downes and Choi 2014). If individuals believe that referents have a more favorable input–output ratio, they will reduce their efforts to improve their balance (Shaw 2014). Several studies have provided evidence for this prediction of equity theory. For instance, Trevor and Wazeter (2006) found that employees' internal and external pay standing influences their pay equity perceptions. Similarly, the meta-analysis by Williams et al. (2006) showed that employees' (perceived) internal and external pay standing influences their pay satisfaction (see also Harris et al. 2008).

Despite the contributions of these prior studies to our knowledge of the consequences of pay disparities, we can identify two gaps that impair our understanding: First, researchers have thus far paid much attention to the influence of internal and external pay disparities on employee attitudes and behaviors, but paid little attention to the relationship between employee pay standing and job performance (for exceptions, see Bloom 1999; Pfeffer and Langton 1993), particularly regarding external pay

disparities (see Leana and Meuris 2015). Because employee performance is an important individual-level outcome variable (see, e.g., Campbell and Wiernik 2015; Cascio and Aguinis 2008), we argue that an analysis of this relationship is needed.

Second, prior studies have ignored that an employee's objective internal and external pay standing is subject to change. For instance, an employee's internal pay standing increases if he or she receives a pay raise while his or her colleagues' salaries remain unchanged. Similarly, an employee's external pay standing decreases if his or her salary remains unchanged while employees who perform similar tasks in other organizations receive a pay raise. Thus far, we know little about how employees react to changes in internal and external pay standing, although such changes are not uncommon.

In the following section, we develop hypotheses regarding the relationship between changes in employees' internal and external pay standing and their job performance. Following prior studies (e.g., Motowidlo et al. 1997; Motowidlo and Van Scotter 1994), we distinguish two dimensions of employees' overall job performance: task performance and contextual performance. Task performance refers to an organization's technical core and involves activities such as transforming raw materials into products (Motowidlo et al. 1997). Contextual performance is related to maintaining the “organizational, social, and psychological environment in which the technical core must function” (Motowidlo et al. 1997, p. 75) and includes aspects such as helping and assisting colleagues. By distinguishing the dimensions of employee job performance, this study provides more detailed insights into the relationship between employee objective pay standing and job performance.

## The Relationship Between Employees' Objective Internal Pay Standing and Their Job Performance

In the first step, we focus on the relationship between changes in employees' objective internal pay standing and their task performance and contextual performance. Employees' objective internal pay standing increases if they receive a pay raise while their colleagues' salary remains unchanged, or if the employees' pay raise is higher than their colleagues' pay raise. Employees' objective internal pay standing decreases if their colleagues receive a pay raise while the employees' salaries remain unchanged, or if the employees' pay raise is lower than that of their colleagues.

We expect that decreases in employees' objective internal pay standing are negatively related to their task performance. Theories such as equity theory (Adams 1963, 1965) and the fair wage–effort hypothesis (Akerlof

and Yellen 1990) indicate that employees compare their salary with those of colleagues in their company (Trevor and Wazeter 2006; Wheeler and Miyake 1992). Such comparisons might result in perceptions of inequity if the employees believe that they earn less than they should compared to their colleagues or in perceptions of equity if the employees believe that their salary is fair compared to that of their colleagues (Shore et al. 2006; Trevor and Wazeter 2006). We contend that employees will perceive they are being treated unfairly if their internal pay standing decreases. As indicated by equity theory (Adams 1963), employees compare their input–output ratio to their colleagues' input–output ratio. If the employees' colleagues receive a pay raise, their input–output ratio improves because they receive more outputs for the same input. Although the (objective) input–output ratio of employees who received no pay raise is not affected by their colleagues' pay raise, the employees' input–output ratio becomes less favorable compared to that of their colleagues. Therefore, the employees will feel they are being treated unfairly by their employer.

Equity theory and the fair wage–effort hypothesis predict that employees will withdraw their effort when they perceive they are being treated unfairly by their employer, and empirical studies provide evidence for the relationship between perceptions of pay equity and employees' effort at work. For instance, Gächter and Thöni's (2010) laboratory experiment revealed that employees reduce their efforts if the individuals receive less money than their coworkers. Cohn et al. (2014) found that decreasing salaries undermines employee efforts, and that the negative effect was twice as large when only one worker's salary was cut while the referent's salary remained unchanged. Based on these findings and the predictions of the theories, we expect that decreases in employees' objective internal pay standing will be related to lower motivation and less effort at work, which negatively affects task performance. Therefore, we hypothesize:

**Hypothesis 1a** Decreases in employees' objective internal pay standing are negatively related to their task performance.

In addition, we expect that decreases in employees' objective internal pay standing are negatively related to their contextual performance. Equity theory (Adams 1963) indicates that employees will feel they are being treated unfairly by their employer when their objective internal pay standing decreases. The perception of being treated unfairly is negatively associated with employees' citizenship behavior (e.g., helping colleagues), as several studies has shown.<sup>1</sup> For instance, Skarlicki and Latham's (1996)

experimental study showed a positive relationship between employees' fairness perceptions and citizenship behavior toward the organization and toward colleagues. Similarly, the meta-analysis by Organ and Ryan (1995) showed a high correlation between perceived fairness and organizational citizenship behaviors. Therefore, we assume that employees will reduce their citizenship behaviors when their objective internal pay standing decreases, because they will feel they are being treated unfairly by their employer.

Furthermore, we argue that employees will refrain from cooperating with colleagues when the employees' objective internal pay standing decreases because of envy (see, e.g., Tai et al. 2012). If employees' objective internal pay standing decreases, they might think that their colleagues have taken money away from them. Consequently, the employees will avoid cooperating with their colleagues and assisting them, particularly those whose salary has increased. Following these arguments, we hypothesize:

**Hypothesis 1b** Decreases in employees' objective internal pay standing are negatively related to their contextual performance.

### **The Relationship Between Employees' Objective External Pay Standing and Their Job Performance**

In the second step, we focus on the relationship between changes in employees' objective external pay standing and their task performance and contextual performance. Employees' external pay standing increases if they receive a pay raise while market wages for a similar job remain unchanged or if the increase in the employees' salary exceeds the increases in market wages. Employees' objective external pay standing decreases if market wages increase while the employees' salary remains unchanged or if increases in the employees' salary lag behind the market.

We expect that decreases in employees' objective external pay standing are negatively related to their task performance. Similar to the arguments related to hypothesis 1a, we assume that decreases in employees' objective external pay standing influence their perceptions of equity and thus affect task performance. Particularly, decreases in employees' objective external pay standing indicate that the employees' input–output ratio compared to that of referents in other organizations worsens. Equity theory (Adams 1963) predicts that such a change will negatively affect the employees' equity perceptions. Thus, equity theory (Adams 1963, 1965) and the fair wage–effort hypothesis (Akerlof and Yellen 1990) indicate that the

<sup>1</sup> Although the construct's contextual performance and (organizational) citizenship behaviors are distinct, they capture similar

Footnote 1 continued behaviors (e.g., helping colleagues) (Motowidlo 2000). Therefore, we refer to both constructs.



employees will invest less effort in their work, which will negatively affect their task performance. Following these arguments, we hypothesize:

**Hypothesis 2a** Decreases in employees' objective external pay standing are negatively related to their task performance.

We further assume that decreases in employees' objective external pay standing are negatively related to their contextual performance. Again, we explain the hypothesis with equity theory (Adams 1963) and employees' fairness perceptions. Although employees will not be envious of their colleagues when the employees' objective external pay standing decreases, they will still feel they are being treated unfairly by their employer. Equity theory predicts that employees' motivation and effort at work will be negatively affected by the perception of unfair treatment, which will negatively influence employees' citizenship behavior. Furthermore, employees might also avoid cooperating with colleagues in order to harm their employer (see, e.g., Greenberg 1990). Therefore, we hypothesize the following:

**Hypothesis 2b** Decreases in employees' objective external pay standing are negatively related to their contextual performance.

## Methods

### Data and Sample

We test the hypotheses using a sample of professional NBA basketball players. We chose this research context for several reasons. First, the sports setting is well-suited to this study because salaries in that industry are almost completely transparent and because of the existence of objective information on employee job performance over time (Berri et al. 2007). Further, previous studies have shown that the findings from pay research in professional sports are generalizable to for-profit organizations (Day et al. 2012; Shaw 2014). Second, the NBA is a suitable research context because the NBA season is long enough (82 games) to avoid small sample bias in job performance, which is often the case in sports such as American football, which has fewer regular season games (16 games) and thus more variable job performance (see Stewart and Nandkeolyar 2007). Additionally, prior research on the effects of pay dispersion has mostly been conducted in settings with low task interdependence (see Trevor et al. 2012). However, work in organizations is often characterized by task interdependence. Unlike sports such as baseball, basketball is a highly interdependent activity (Timmerman 2000), which makes it a good context for this study.

We collected longitudinal data on players over a period of 12 seasons (from the 1999–2000 season to the 2010–2011 season). The time period was chosen because the previous and subsequent seasons (1998–1999 and 2011–2012 seasons) were affected by player strikes, which limit the comparability. We collected the data from [www.nba.com](http://www.nba.com) and [www.basketball-reference.com](http://www.basketball-reference.com); both websites provide extensive statistics about the NBA and have been used in previous studies (e.g., Beus et al. 2014; Sieweke and Zhao 2015). We included only athletes who had played at least 100 min over the course of a season in the analysis to avoid confounding effects due to small sample bias.<sup>2</sup> The final sample consisted of 1070 individuals who played, on average, 4.5 seasons ( $n = 4830$ ).

## Variables

### Task Performance

Various approaches to measuring the task performance of basketball players have been suggested (for an overview, see Berri 2012). Some studies operationalized task performance using a single performance measure (e.g., points scored per game, see Barnes et al. 2012). Although that approach is reasonable, we decided to follow a previous study (see Frey et al. 2013) that operationalized task performance by constructing an aggregated measure that considers that basketball players have to perform several tasks simultaneously on the court (e.g., defending opposing players, rebounding the ball, scoring). We used the following formula to measure player task performance (see Frey et al. 2013, p. 9):

$$\text{PERF}_{ij} = (\text{PTS} - \text{FGA} - (0.44 \times \text{FTA}) + \text{TREB} + \text{STL} - \text{TO})/\text{GP}$$

$\text{PERF}_{ij}$  is the task performance of player  $i$  in season  $j$ ; PTS is the total number of points scored by the player in the respective season; FGA is the number of field goals (two-point and three-point field goals) attempted by the player; TREB is the total number of (offensive and defensive) rebounds; STL is the total number of steals; and TO is the total number of turnovers, i.e., lost possessions of the ball (e.g., if an opponent steals the ball). The performance index is divided by the total numbers of games played (GP). The higher a player's PERF, the greater his task performance.<sup>3</sup> PERF correlates highly with several other measures of player performance in the NBA (Player Efficiency Rating:  $r(4830) = 0.71$ ,  $p < 0.001$ ; Win Score:  $r(4830) = 0.85$ ,

<sup>2</sup> To check the robustness of the findings, we ran all the analyses with altered parameters (at least 200 min played per season). The results were similar.

<sup>3</sup> Please note: the NBA is an exclusively male competition.

$p < 0.001$ ; Win Shares per 48 min:  $r(4830) = 0.69$ ,  $p < 0.001$ ), which provides evidence for the validity of the PERF measure.

### Contextual Performance

Employees' contextual performance refers to behaviors such as helping and assisting colleagues. In the context of the NBA, players can help each other in several ways, such as setting screens to free up teammates. However, prior studies (see, e.g., Berman et al. 2002; Beus and Whitman 2015) indicate that the most obvious form of collaboration is by passing the ball to colleagues to enable them to score a basket. Such passes that lead to a field goal are called "assists" in the NBA. In this study, we measured a player's contextual performance as the percentage of field goals the player assisted while on the court (for a similar approach, see Beus and Whitman 2015). The higher the percentage, the higher is a player's contextual performance.

### Player Salary

Player salary was measured as the annual amount of US dollars a player receives from his organization as compensation for his services. Following previous studies (e.g., Bloom 1999), we logarithmized player salary to take into account that the relative difference between a salary of US\$100,000 and US\$200,000 is larger than between a salary of US\$1,000,000 and US\$1,100,000.

### Internal Pay Standing

We operationalized objective internal pay standing as the logarithmized median player salary per team. This approach differs from previous approaches that used the average salary a team paid to its players (see, e.g., Frey et al. 2013) or the maximum salary (see, e.g., Bloom 1999). We argue that the median salary is more appropriate than the average salary because the median salary is less affected by outliers (e.g., maximum salaries of about US\$20 million). Additionally, the median salary is also more appropriate than the maximum salary, because it is likely that players compare themselves with average teammates instead of star players (see Frey et al. 2013).<sup>4</sup>

### External Pay Standing

We operationalized objective external pay standing as the logarithmized median player salary per position. We divided players into three groups according to the players'

position (guard, forward, and center), because we assume that the players compare themselves with employees who perform similar tasks in other organizations (Williams et al. 2006). The assumption is supported by anecdotal evidence from the NBA (see, e.g., Falk 2009). We used the median salary because we assume that players will compare their salaries with average players at their position instead of star players.

### Control Variables

We included several covariates. First, we control for players' *organization-specific experience* because it influences job performance (Quinones et al. 1995). We operationalized the variable as the number of seasons each player has played for his current NBA team. Second, we control for the influence of *player talent*, which might influence individual performance and future salaries. Following previous studies (Berman et al. 2002), we used players' draft number as a proxy for their level of talent. We logarithmized the variable to account for the fact that differences between two adjacent positions early in the draft are more significant than differences between two positions later in the draft (Berman et al. 2002). Third, college players often need some time to adjust to the NBA; for instance, the different game rules can undermine the players' performance in their first season. Therefore, we included a dummy variable that was coded 1 if the player played his *first season* in the NBA (0 otherwise). Fourth, all rookies drafted in the first round of the NBA draft receive a 2-year guaranteed contract with a fixed salary (see National Basketball Association 2010). To control for whether these players react differently to their pay standing, we included a dummy variable that was coded 1 if the player received a *rookie salary scale* (0 otherwise). Finally, we included a dummy variable for each season to control for period effects.

### Data Analysis

Our data resemble a nested structure. At the lowest level (level 1), there are observations at different points of time that are nested within players (level 2), who are nested within teams (level 3). The nesting might violate the assumption of independence of observations, which biases standard errors (Raudenbush and Bryk 2002). We calculated the intraclass correlation (ICC)—the proportion of the variation in the dependent variable that is explained on each level—to determine whether to use ordinary least squares (OLS) or multilevel models. For task performance, the ICC for level 2 was 0.70, and the ICC for level 3 was 0.00; for contextual performance, the ICC for level 2 was

<sup>4</sup> We are indebted to an anonymous reviewer for this suggestion.

0.90, and the ICC for level 3 was 0.002. The high ICC values for level 2 indicate that the observations are not independent, which violates the assumptions of OLS (Hofmann 1997). Therefore, we used multilevel regression.

Because the ICC for the team level was very low for both dependent variables, we estimated a two-level model (level 1: within-person level; level 2: between-person level) with random intercepts, which allows intercepts to vary across individuals. Because the residuals of the dependent variable deviated from normality, we followed recommendations in the literature (see Maas and Hox 2004) and used maximum likelihood estimation with robust standard errors (*mixed, mle vce(robust)* command in Stata 14).

To test the hypotheses regarding changes in employees' objective internal and external pay standing, we followed recommendations in the literature (Curran and Bauer 2011) and decomposed the independent and control variables into their between and within components (for a detailed description, see Enders and Tofghi 2007). In the first step, we calculated the mean for each cluster (player, team, and position) over all seasons; this variable represents the between effects (i.e., level 2). In the second step, we subtracted this mean from the season-specific observation to obtain a variable that is centered within the context; this variable represents the within effect (i.e., level 1). Between and within variables have different meanings. For instance, the between variable of employee salary refers to the average salary a player earned during his career, whereas the within variable of employee salary should be interpreted as (temporary) deviation from the usual salary (i.e., the career average).

Some previous studies on pay standing created difference scores to test for the relationship between pay standing and job performance, for example, by subtracting the average team salary from the player salary (see, e.g., Frey et al. 2013). Although this approach is plausible, some researchers (Edwards and Parry 1993; Shanock et al. 2010) argued that difference scores suffer from unnecessary constraints. Most importantly, the difference score approach assumes that the coefficients of the variables that form the difference score (e.g., player salary and median player salary per team) are equal in magnitude. To avoid such unnecessary constraints, researchers recommend including the predictors as separate variables instead of creating a difference score (Edwards and Parry 1993; Shanock et al. 2010).<sup>5</sup> This study follows this recommendation; we included player salary, median player salary per team (i.e., objective internal pay standing), and median player salary per position (i.e., objective external pay standing) as predictors in the multilevel regression. We test

the hypotheses by analyzing how player performance is related to changes in the median player salary per team and median player salary per position, while controlling for player salary (see Harris et al. 2008).

## Results

Table 1 summarizes the descriptive statistics, correlations, and variance inflation factors (VIFs) for all variables. The findings show significant correlations between employee task performance and the within effect of objective external pay standing [ $r(4828) = 0.05$ ;  $p < 0.001$ ] and objective internal pay standing [ $r(4828) = 0.06$ ;  $p < 0.001$ ], which support the hypotheses. Moreover, we find that employee salary is positively correlated with job performance at the between-person level [ $r(4828) = 0.53$ ;  $p < 0.001$ ] and the within-person level [ $r(4828) = 0.08$ ;  $p < 0.001$ ]. According to a recent study on correlational effect size benchmarks in organizational psychology (Bosco et al. 2015), the median correlation between job performance and objective person characteristics was about  $r = 0.09$ . Therefore, the correlational effect sizes on the within-person level represent small effects, whereas the between-person correlation between employee salary and task performance represents a large effect size.

There are also several high correlations between covariates; for instance, between the between-person effect of employee salary and player talent [ $r(4828) = 0.62$ ;  $p < 0.001$ ], which might indicate problems with multicollinearity. Table 1 shows that the VIFs for all variables were below the critical level of 5 ( $VIF_{\max} = 4.37$ ;  $VIF_{\text{mean}} = 2.22$ ), which indicates that multicollinearity did not bias the findings.

The results of the multilevel analysis are presented in Table 2, Models 1–6. Model 1 and Model 4 are the null models, which include only the dependent variable (task performance and contextual performance). Model 2 and Model 5 include the control variables; the independent variables are added in Model 3 and Model 6.

Hypothesis 1a posits that decreases in employees' objective internal pay standings are negatively related to the employees' task performance. The results of the multilevel analysis (Table 2, Model 3) support the hypothesis; the coefficient of the within effect of internal pay standing is negative and significant ( $\gamma = -0.30$ ;  $p < 0.001$ ). The finding indicates that a one standard deviation increase in the median salary within an organization is related to an approximate 3 % decrease in employee task performance.

Hypothesis 1b states that decreases in employees' objective internal pay standing are negatively related to their contextual performance. The coefficient of the within effect of internal pay standing is negative and significant

<sup>5</sup> We are indebted to an anonymous reviewer for this suggestion.



**Table 1** Descriptive statistics, correlations, and variance inflation factors

Variable	Mean	SD	VIFs	1	2	3	4	5	6	7	8	9	10	11	12
1. Task performance	3.74	2.79													
2. Contextual performance	13.10	9.13		-0.15											
3. Organizational experience (b)	2.48	1.52	1.45	0.38	0.14										
4. Organizational experience (w)	0.00	1.45	1.20	0.10	0.06	0.00									
5. Player talent <sup>a</sup>	1.24	0.46	1.74	-0.40	-0.09	-0.27	0.00								
6. First season (1 = yes)	0.13	0.34	1.43	-0.19	-0.07	-0.18	-0.21	0.11							
7. Rookie salary scale (1 = yes)	0.14	0.34	1.34	-0.08	-0.04	-0.08	-0.20	-0.15	0.44						
8. Salary <sup>a</sup> (b)	14.69	0.90	2.39	0.53	0.18	0.55	0.00	-0.62	-0.29	-0.02					
9. Salary <sup>a</sup> (w)	0.00	0.64	1.36	0.08	0.04	0.00	0.37	0.00	-0.26	-0.23	0.00				
10. Internal pay standing (b)	14.73	0.17	1.01	0.02	-0.01	0.03	0.01	-0.03	-0.04	-0.01	0.09	0.06			
11. Internal pay standing (w)	0.00	0.37	1.16	0.06	0.001	0.06	0.07	-0.07	-0.08	-0.03	0.13	0.18	0.00		
12. External pay standing (b)	14.75	0.11	1.02	0.39	-0.64	0.05	0.00	-0.11	-0.02	-0.02	0.10	0.00	0.00	-0.01	
12. External pay standing (w)	0.00	0.15	3.87	0.05	-0.03	-0.03	0.12	0.00	-0.02	0.00	-0.04	0.24	0.00	0.26	0.00

*n* = 4830; all correlations  $r \geq 0.03$  are significant at  $p \leq 0.05$  (two-tailed tests)

*b* between-person effect; *w* within-person effect

<sup>a</sup> Logarithmized

( $\gamma = -0.58$ ;  $p = 0.001$ ), which supports the hypothesis (see Table 2, Model 6). The finding indicates that a one standard deviation increase in the median salary within an organization is related to an approximate 1.6 % decrease in employee contextual performance.

Hypothesis 2a predicts that decreases in employees’ objective external pay standing are negatively related to their task performance. The results of the multilevel analysis (Table 2, Model 3) support the hypothesis; the coefficient of the within effect of external pay standing is negative and significant ( $\gamma = -0.62$ ;  $p = 0.025$ ). The finding indicates that a one standard deviation increase in the median salary on the external labor market is related to an approximate 2.5 % decrease in employee task performance.

Finally, hypothesis 2b states that decreases in employees’ objective external pay standing are negatively related to their contextual performance. The coefficient (Table 2, Model 6) is positive and nonsignificant ( $\gamma = 0.63$ ;  $p = 0.339$ ); therefore, the hypothesis was rejected.

### Discussion

Employee compensation is an important topic for management research and practice. In addition to employees’ actual pay, differences in employees’ salaries have been found to influence employee attitudes and behaviors. Previous studies have paid little attention to the relationship between employees’ job performance and their pay relative to that of their colleagues (i.e., internal pay standing) and relative to that of employees in other organizations who perform similar tasks (i.e., external pay standing). Moreover, most prior studies assumed that employees’ objective pay standing is static, although changes in pay standing are common in practice. The current study addressed these gaps. The findings of an empirical study conducted in the NBA showed a negative relationship between decreases in players’ objective internal and external pay standing and their task performance. We also found that decreases in players’ objective internal pay standing are negatively related to their contextual performance.

Overall, this study contributes to the literature in several ways. First, the study contributes to research by introducing a dynamic perspective on pay dispersion. Previous research often assumed that employees hold a static position in the pay hierarchy. Consequently, prior work has analyzed to what extent the attitudes and behaviors of employees with high and low pay standing differ from each other. These prior studies provided important insights into between-person relationships. However, employees’ pay standing is often dynamic and subject to changes over time. Thus, the

**Table 2** Results of multilevel analysis

Variable	Model 1 Task performance	Model 2 Task performance	Model 3 Task performance	Model 4 Contextual performance	Model 5 Contextual performance	Model 6 Contextual performance
<b>Control variables</b>						
Organizational experience (b)		0.38*** (.07)	0.20*** (.06)		0.60* (0.26)	0.42 (0.27)
Organizational experience (w)		0.15*** (.02)	0.12*** (.02)		0.36*** (0.05)	0.29*** (0.05)
Player talent		-1.94*** (.19)	-0.95*** (.21)		-1.04 (0.69)	-0.57 (0.70)
First season (1 = yes)		-0.67*** (.07)	-0.45*** (.07)		-0.66*** (0.19)	-0.44* (0.19)
Rookie salary scale (1 = yes)		-0.75*** (.09)	-0.66*** (.09)		-0.67*** (0.21)	-0.64** (0.21)
Season dummies included	No	Yes	Yes	No	Yes	Yes
<b>Independent variables</b>						
Salary <sup>a</sup> (b)			0.77*** (0.09)			0.84* (0.34)
Salary <sup>a</sup> (w)			0.27*** (0.05)			0.62*** (0.11)
Internal pay standing <sup>a</sup> (b)			-0.01 (0.20)			-2.04*** (0.53)
Internal pay standing <sup>a</sup> (w)			-0.30*** (0.07)			-0.58*** (0.17)
External pay standing <sup>a</sup> (b)			5.16*** (0.44)			-17.47*** (1.37)
External pay standing <sup>a</sup> (w)			-0.62* (0.28)			0.63 (0.65)
Number of persons	1070	1070	1070	1070	1070	1070
Log pseudolikelihood	-10,328.83	-9,720.18	-9580.95	-15,041.26	-14,183.91	-14,047.24
Wald $\chi^2$		476.00***	704.21***		155.08***	367.24***

*n* = 4830. Unstandardized coefficients are shown with robust standard errors in parentheses

<sup>a</sup> Logarithmized

<sup>b</sup> between-person effect; *w* within-person effect

\* *p* ≤ 0.05, \*\* *p* ≤ 0.01, \*\*\* *p* ≤ 0.001; two-tailed tests

question is: how do employees react to such changes in their pay standing? As researchers in disciplines such as psychology (e.g., Curran and Bauer 2011) and management studies (e.g., Dalal et al. 2014) indicated, relationships at the within-person level can differ in sign, form, and magnitude from relationships at the between-person level. Thus, we would commit an ecological fallacy if we assume that findings from the between-person level can be transferred to the within-person level. This study provides first insights into the dynamic perspective on pay dispersion and shows that a within-person perspective can contribute to a better understanding of the consequences of pay dispersion. However, future research should analyze in more detail the within-person perspective. In particular, it will be interesting to see whether the relationships identified in between-person studies can be confirmed in within-person studies.

Second, in line with previous research (e.g., Trevor and Wazeter 2006; Wade et al. 2006), this study indicates the need to consider employees' internal *and* external pay standing, because employee perceptions of the fairness of their salaries are influenced by comparisons with internal and external referents. However, previous research tended to pay greater attention to the consequences of internal pay comparisons (Dulebohn and Werling 2007; Shaw 2014), particularly regarding the relationship between employee pay standing and job performance (e.g., Bloom 1999; Pfeffer and Langton 1993). Therefore, Leana and Meuris (2015) recently recommended—based on a comprehensive review—that research on pay dispersion should also focus on the consequences of employees' comparisons with external referents. The findings of the present study support the claim. Changes in employees' objective internal and external pay standing are related to their job performance. An implication of this finding is that researchers should include internal and external perspectives when analyzing the consequences of pay dispersion. Whereas such an approach is common for employee attitudes (see, e.g., the meta-analysis conducted by Williams et al. 2006), it is less common for employee behaviors (Leana and Meuris 2015). However, we expect that external comparisons will become more important in the near future because of the growing pay transparency in the external labor market. Whereas in the past, employees had difficulty obtaining accurate information about the salaries of employees who perform similar tasks in other organizations, such information is relatively easy to gather today, because websites such as salary.com offer employees an opportunity to collect information about market wages. Therefore, we expect that employees will increasingly compare their salary (also) to referents in other organizations, which emphasizes the importance of the external perspective for research on pay dispersion.

Third, this study contributes to research on the consequences of employees' objective external pay standing. We build on previous studies that analyzed the relationship between external pay disparities and employee perceptions of fairness and pay satisfaction; this study advances this line of research by providing the first insights into the relationship between employees' objective external pay standing and their task performance and contextual performance. In addition to the relationship with employee behavior, such as turnover (Wade et al. 2006) and absenteeism (Della Torre et al. 2015), external pay disparities are related to employee task performance, but not to their contextual performance. Thus, this study provides a more comprehensive picture of the individual-level consequences of external pay disparities.

### Practical Implications

This study has implications for managerial practice. In particular, the study highlights the complexity of compensation systems. The findings indicate that companies should consider the external labor market and the internal labor market in their compensation systems, because employees react to changes in their external and internal pay standing. If market wages increase, for example, because of a shortage of employees with the required human capital, employees will react negatively if their pay remains unchanged. Similarly, if the salary of employees' internal reference group increases, our findings suggest that their job performance will decrease. Therefore, we argue that it is important for managers to consider this dynamic perspective, because it indicates that changes in the external and internal labor markets can affect employees' task performance and contextual performance.

We also assume that the relevance of the dynamic perspective for managerial practice will increase in the next few years. Whether increases in salaries in the external and internal labor markets affect employee performance depends on whether an employee has information about such changes (Belogolovsky et al. 2016). We have reasons to expect a growing pay transparency in the external and internal labor markets. First, it is easy today for employees to collect information about salaries on the external labor market, because websites (e.g., salary.com) publish the information. Therefore, managers should consider salary increases in the external labor market to avoid skilled employees moving to companies that pay higher salaries. Second, in several countries we can see attempts to promote pay transparency within organizations, to reduce discrimination, for example, against women or minorities. For instance, US President Barack Obama issued Executive Order 13665, which forbids

companies, as long as they are federal contractors, from discharging employees who discuss or disclose their pay (see Office of Federal Contract Compliance Programs 2015); similar laws are being discussed in countries such as Germany (see Zdrzalek 2015). Thus, managers must be aware that their employees have information about their colleagues' salaries, which indicates the need to take approaches to reduce the potential negative effects of the transparency.

However, it is important for managers to recognize that paying higher salaries to employees is positively related to an organization's financial performance only if the additional outputs produced by employees exceed the costs of higher wages. When costs outstrip benefits, higher salaries might negatively affect organizational profitability in the long run.

### Limitations and Future Research

The results should be interpreted in light of the study's limitations. First, the findings are constrained by the object of investigation, namely, sports teams. For instance, salaries in the NBA are higher than in most companies, which might influence individuals' reactions to external wage disparities, as indicated in previous studies (Bloom and Michel 2002). Moreover, the NBA has several rules (e.g., salary cap, maximum pay) that influence the teams' compensation decisions. Such rules are not found in other industries, which also limits the generalizability of the findings. Finally, the NBA is an exclusively male competition, which might further limit the generalizability. However, a recent review of the pay dispersion literature concluded that "the findings of these studies [conducted in the sport context] seemed no more disparate than those found in the broader literature" (Shaw 2014, p. 523). Additionally, studies indicate that men and women react similarly to pay disparities (see Gilsdorf and Sukhatme 2008). Therefore, we are confident that these findings apply to other work environments. Nonetheless, we recommend future research should analyze the consequences of changes in an employee's external and internal pay standing in other industries.

Second, the panel data used in this paper have drawbacks, although they are often regarded as superior to cross-sectional data because they allow researchers to analyze changes over time (Ployhart and Ward 2011). Most notably, panel data do not allow researchers to infer a causal relationship between the independent and dependent variables. For instance, the relationship between objective external pay disparities and job performance might be biased by unobserved effects or problems of reverse causation. Although we tried to reduce the confounding effects by including variables that control for influences on the individual level, we cannot preclude that these findings are biased by unobserved

variables. To test for a causal relationship between external wage disparities and individual performance, we recommend field experiments (see, e.g., King et al. 2013), which have the advantage of high internal and external validity.

Third, this study provides no insights into the mechanisms that mediate the relationship between employees' objective external and internal pay standing and their job performance. It is important for researchers to gain more insights into these mediators to better understand why changes in employees' internal and external pay standing are related to job performance. Following previous research (e.g., Bygren 2004; Trevor and Wazeter 2006), we recommend focusing on mediators such as employees' effort and (pay) satisfaction.

Fourth, we lack information about the referents used by NBA players when they compare their salaries. Although prior studies indicated that it is reasonable to assume that players compare their salaries with the salaries of players who play the same position and perform similar tasks on the court (Trevor and Wazeter 2006), it is possible that players choose other referents; for instance, a player might compare his salary with the salary of players who score a similar number of points or with players who play a similar number of minutes. Therefore, we recommend future research that collects primary data on the referents with which employees compare their salary.

Finally, some top players (e.g., Tim Duncan, Dirk Nowitzki) recently accepted salaries below their market value to allow their teams to add top players to increase the team's chances of winning an NBA title. Because this trend is new in the NBA, we expect no significant impact on the findings. However, we recommend that future research analyze which player characteristics (e.g., total amount of salary received), organizational characteristics (e.g., small market vs. large market team), and situational characteristics (e.g., teammates who signed contracts below their market value) that influence the decision.

### Conclusions

Employees compare their salary with referents within and outside their organization. We argue—and this study shows—that it is important to consider the internal and external perspectives in research on pay disparities. Moreover, we extend the current research on pay dispersion by focusing on within-person relationships; that is, how employees react if their (internal and external) pay standing changes. We hope that this study stimulates further research on the consequences of internal and external pay disparities and helps practitioners design effective compensation systems.

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