Front. Bus. Res. China 2016, 10(4): 576–604
DOI 10.3868/s070-005-016-0021-6

RESEARCH ARTICLE

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Incorporating Pay Basis into Pay Comparison: The Relationships among Over/Underpayment, Pay for Performance and Pay Level Satisfaction

Abstract Drawing on the discrepancy model, we re-examine the impact of pay comparison on employees' pay level satisfaction by taking pay basis and pay program into account. Actual pay data from 382 Chinese employees, along with their self-reported pay level satisfaction, provides support for our research model. Specifically, results show that the positive effect of over/underpayment on pay level satisfaction is more robust than that of internal pay standing, indicating the importance of pay basis for pay satisfaction perception. In addition, the positive relationship between internal pay standing and pay level satisfaction is weaker among employees who are in a pay program of high pay-for-performance intensity. We conclude by discussing the theoretical and practical implications of these findings.

Keywords pay basis, pay comparison, pay level satisfaction, pay for performance

1 Introduction

Pay is considered to be one of the most important organizational decisions for managers, because a successful and equitable pay strategy has positive effects on

Received June 2, 2016

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attracting, motivating, and retaining talented employees in the business market (Gerhart, 2000), which will further enhance organizational performance and effectiveness (Rodwell and Teo, 2008; Teo, Clerc, and Galang, 2011). Consequently, significant effects such as these make it easy to see why researchers have been interested in understanding pay for a long time (Gerhart and Rynes, 2003; Lawler, 1971; Milkovich and Newman, 2005).

However, these positive outcomes rely largely on employees' attitudes towards pay (Heneman and Judge, 2000), of which one typical form is pay level satisfaction. That is, the importance of pay is primarily reflected by the popularity of pay satisfaction as a prominent research topic (Rice, Phillips, and McFarlin, 1990). Indeed, extensive research has demonstrated that pay level satisfaction—satisfaction with the amount of pay including salary or base pay, bonuses, incentives, and commissions (Williams, Brower, Ford, Williams, and Carraher, 2008: p. 660)—conceptualized as the most important sub-dimension of pay satisfaction (i.e., satisfaction with pay benefits, raises, structure and administration) comprises about 50 percent to 60 percent of the total variance in pay comparison (Heneman and Schwab, 1985; Heneman, Greenberger, and Strasser, 1988; Miceli and Lane, 1991). Therefore, we focus only on satisfaction with pay levels in line with the preponderance of existing research (Bordia and Blau, 1998; Williams, McDaniel, and Nguyen, 2006; Kim, Mone, and Kim, 2008). As the focal attitude, it plays a vital role in generating positive attitudinal and behavioral work outcomes from employees, including increased work performance, job satisfaction, and affective commitment, and even reduced turnover intention, voluntary turnover behavior and absenteeism (e.g., Heneman and Judge, 2000; Schreurs, Guenter, Schumacher, Van Emmerik, and Notelaers, 2013, 2015; Williams et al., 2006, for a meta-analysis). Given these influential effects, it is imperative for both scholars and practitioners to recognize which factors can effectively increase employees' pay level satisfaction. Prior research on determinants of pay level satisfaction mainly focused on the effects of demographic variables (Levine, 1993; Rice et al., 1990), pay levels (Till and Karren, 2011; Williams et al., 2008), pay comparison (Bordia and Blau, 1998; Harris, Anseel, and Lievens, 2008; Scholl, Cooper, and Mckenna, 1987), organizational justice (Heneman and Judge, 2000; Miceli and Lane, 1991; Tremblay and Roussel, 2001), and pay for performance perception (Heneman et al., 1988; Miceli and Lane, 1991). Although Heneman and Judge (2000) have

indicated all models of pay satisfaction suggest that the amount of pay itself should have a direct impact on pay satisfaction, pay comparison has been ascertained as the fundamental antecedent most strongly related to pay level satisfaction (e.g., Berkowitz, Fraser, Treasure, and Cochran, 1987; Sweeney, McFarlin, and Interrieden, 1990; Williams et al., 2006, 2008). Furthermore, the research has largely engaged in an appraisal process in which actual pay is compared simultaneously with several referents (Miceli and Lane, 1991; Rice et al., 1990), and extensive studies involving multiple standards of comparison have generally used respondent perceptions of discrepancies to operationalize the discrepancy concept (e.g., Ronen, 1986; Scholl et al., 1987).

Moreover, most studies focus on the referents of pay comparison that individuals use in assessing pay level satisfaction, including internal or similar comparison ("people in the same occupation and/or organization," e.g., internal comparison, Scholl et al., 1987; Sweeney et al., 2005; inside comparison, Bordia and Blau, 2003; Goodman, 1974; Ronen, 1986), and external or dissimilar comparison ("people in other occupations and organizations," e.g., external comparison, Scholl et al., 1987; Sweeney et al., 2005; outside comparison, Bordia and Blau, 2003; Ronen, 1986). The choice of referent is critical for engendering the special comparison process (Summer and DeNisi, 1990). In fact, individual comparison is less under-investigated among the three classes of comprehensive pay referent comparisons (i.e., internal, external and individual comparisons) to reflect individual self-referent comparison (Bordia and Blau, 1998; Goodman, 1974; Scholl et al., 1987; Summer and DeNisi, 1990). That is, the research rarely implies the direct comparison effects based on the individual own contributions and inputs (Tremblay and Blau, 2001), which is widely accepted as the pay basis in particular (Gerhart and Milkovich, 1990; Gerhart and Rynes, 2003). And it remains largely unknown which type of pay comparisons has the greatest impact on employees (Till and Karren, 2011). Additionally, the methodological flaws also limit the validity and accuracy of effects of comparative referents upon pay level satisfaction (Rice et al., 1990). Based on the above analysis, although it may appear easy to understand that the discrepancy of pay comparison usually has important and undesirable impacts (Heneman and Judge, 2000), especially that peer comparison may harm cohesiveness and harmony in organizations (Harrison, Price, and Bell, 1998), this vein of research has produced relatively little insight into pay level satisfaction. It

behooves researchers to investigate if effective pay allocation systems mitigate the undesired influences of pay comparison.

Therefore, the primary goal of the present study is to seek a better understanding of the individual comparison component of pay level satisfaction. Considering that pay basis (e.g., individual inputs) is vital for individuals in the pay comparison process (Lawler, 1971, 1981), we bring over/underpayment into pay level satisfaction research. Specifically, over/underpayment as defined in this study refers to the situation in which one's actual amount of pay is more or less than the amount that one is supposed to receive, based on a set of legitimate pay bases that employers implement in their workplaces (Levine, 1993; Wowak, Hambrick, and Henderson, 2011). Meanwhile, as a single continuous variable to represent the extent of discrepancy of individual pay comparison, the measure of over/underpayment is supported with factual data on pay levels and pay basis, in contrast to previous measurements, which usually adopts indirect ways of measuring either by employees self-reporting the perceived extent of relative pay assuming that they compare themselves with scenario referents who work in similar jobs within or outside their organizations (e.g., Blau, 1994; Bordia and Blau, 2003; Law and Wong, 1998), or by calculating the internal/external standing of actual pay levels as the vicarious indicator of pay comparison (e.g., Pfeffer and Davis-Blake, 1992; Trevor and Wazeter, 2006). Thus, we take the legitimate pay basis into adequate account by calculating the residuals of actual pay and predicted pay, and gain implications from the computations of this study. Moreover, as proposed and examined by Rice et al. (1990) assuming that pay level satisfaction is based on the simultaneous consideration of multiple sources of pay comparison, we concurrently compare the impact of employees' over/underpayment on their pay level satisfaction with that of internal pay standing. This outcome-focused measure of pay comparison (Trevor and Wazeter, 2006), allows for a more robust inference of the importance of absorbing pay basis into pay comparison research.

Second, with the aim of alleviating the increased discrepancy of pay level satisfaction generated from employees' pay comparison, we examine the constraint effect of pay-for-performance intensity on the relationship between employees' pay comparison and their pay level satisfaction. Pay-for-performance (PFP) intensity reflects the proportion of performance-based pay in the employees' pay package (Du and Choi, 2010). Tighter PFP linkages between

performance and pay systems may generate greater pay satisfaction for those performing at higher levels (Kim et al., 2008). More specifically, such a pay program of high PFP intensity makes pay more sensitive to performance, which is considered to be more equitable compared to a pay program of low PFP intensity (Bebchuk and Fried, 2006). That is, even employees who are in a disadvantaged situation of pay comparison may feel more satisfied with their pay in a pay program of high PFP intensity, rather than in a program of low PFP intensity. Accordingly, we intend to examine whether PFP intensity can play a constraining role in the process of pay comparison and subsequently lessen the negative aspect of pay comparison. This actively answers the call of Heneman and Judge (2000) and Williams et al. (2006) to explore the interactive effects of pay comparison and pay programs on pay satisfaction.

Third, two methodological considerations should be taken fully into account. On the one hand, common method bias (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003) threatens the widespread understanding of the impact of pay comparison on pay level satisfaction. Heneman and Judge have pointed out, "We are struck by researchers' use of surveys to gather both independent and dependent variables (often within a single instrument for cross-sectional studies)" (2000, p. 82), which emphasizes the hazard of common method bias in compensation research. On the other hand, as documented in Heneman and Judge (2000) and Williams et al. (2006), a mass of empirical studies of pay satisfaction have failed to control for actual pay levels, producing ambiguous estimates of the strength of some preconditions. However, there is still an essential need for controlling for actual pay levels when testing the relationship between pay comparison and pay level satisfaction (Rice et al., 1990). In response to these methodological deficiencies, we have used multi-source data to test our hypotheses, and controlled for actual pay levels in this study.

The overall research model is depicted in Figure 1. We seek to address the above research questions and make two contributions to the literature on the relationship between pay comparison and pay level satisfaction under the constraint of pay for performance. First, by incorporating the legitimate pay basis into over/underpayment, we compensate for the theoretical deficiency of individual self-referent pay comparison, and thereby evidence the salient importance of pay basis in the comparison process of pay satisfaction perception by comparing over/underpayment with inter pay standing. Second, by

investigating the moderating role of pay-for-performance intensity in the relationship between pay comparison and pay level satisfaction, we contribute to the pay for performance literature to imply the contingent effects of pay for performance to ameliorate the negative discrepant influence of pay level satisfaction. Moreover, in view of the flaw of common method bias in the pay level satisfaction literature, we apply multi-source data to test our hypotheses, especially using objective data of *pay level* and pay basis to evaluate pay comparison. Also, we control for actual pay levels, in order to make a more robust and sober estimation of the impact of pay comparison on pay level satisfaction.

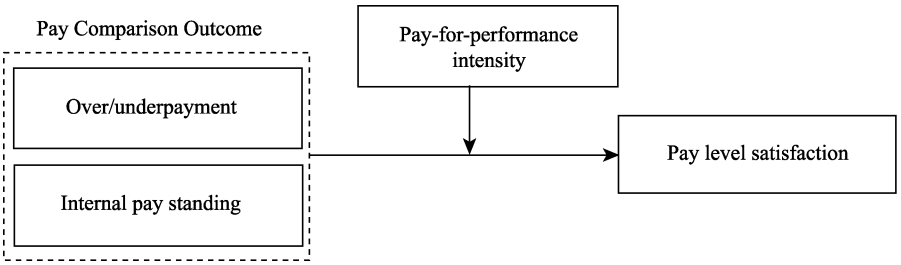

Figure 1 Research Model

2 Theory and Hypotheses

2.1 Pay Comparison and Pay Level Satisfaction

According to discrepancy theory (Lawler, 1971, 1981), employees' pay level satisfaction depends primarily on the outcome of the comparison between "should receive" perceptions and "does receive" perceptions. Particularly, "should receive" perceptions are based on personal job inputs, job characteristics, and inputs and outcomes of the referents; whereas, "does receive" perceptions are derived according to the pay actually received and the pay of referents (Heneman and Judge, 2000). Hence, not only the pay level of the focal employee and referents but also the pay basis, should be taken into consideration in pay comparison.

On the basis of the discrepancy model, we propose a positive relationship between over/underpayment and pay level satisfaction, measured with objective pay data, which takes the legitimate pay basis involving individual,

organizational, and market/environmental characteristics into account (Werner and Ones, 2000; Werner and Ward, 2004). In theory, the discrepancy model suggests that when the degree of discrepancy between individuals' perceptions of the amounts of pay that they should receive and what they actually *do* receive decreases, the perceived pay satisfaction of individuals will increase as a result (Lawler, 1971, 1981). Similarly, as the relative deprivation theory explains, an individual generally feels deprivation generated in situations when one believes he/she deserves more pay than current earnings (Crosby, 1976). Particularly, in a context in which organizations distribute compensation among employees unequally, low-paid employees may feel inadequately compensated when they compare themselves to standards of reference. If they feel they deserve or are entitled to more, this then leads to their dissatisfaction with current pay levels (Crosby, 1976; Martin, 1981; Sweeney et al., 1990). Accordingly, when the focal employee's over/underpayment increases, which captures the extent of discrepancy between expected and actual pay levels, his or her perceived target pay discrepancy will decrease, and even may be eliminated. In turn, the focal employee's pay level satisfaction will go up. In other words, the focal employee with higher over/underpayment shows a total pay surplus compared to others, and this pay surplus subsequently improves higher individual pay level satisfaction, whereas lower over/underpayment results in lower individual pay level satisfaction for the pay insufficiency (Folger and Konovsky, 1989; McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1993).

Prior empirical research has provided indirect evidence to support our argument that over/underpayment increases employees' pay level satisfaction. Lambert (2011) has inferred under the discrepancy approach, employees' satisfaction should be low for underpayment and high for overpayment in employees' appraisal of pay and work. On the one hand, Brown (2001) has evidenced the positive relationship between overpayment and pay level satisfaction; Levine (1993) has found that, after controlling for demographic and human capital variables, workers who receive high wages (overpayment) are more satisfied with their pay and less likely to quit. On the other hand, Sweeney et al. (1990) have indicated that underpayment is associated with lower pay satisfaction. Fong et al. (2010) have found that underpayment is related to increased voluntary CEO withdrawals. Additionally, differing from these typical studies of over/underpayment, we manipulate over/underpayment as a single

continuous variable to represent and calculate rather than two separate associated variables (overpayment-underpayment), thus we use this single variable to propose the following hypothesis:

Hypothesis 1. Employees' over/underpayment is positively related to their pay level satisfaction.

Compared to over/underpayment, which includes individual inputs and other pay basis, internal pay standing refers to the relative standing of individual pay levels in an organization's internal pay hierarchy (Pfeffer and Davis-Blake, 1992), and is solely an outcome-based representation of an internal pay referent comparison. As the discrepancy model suggests (Lawler, 1971, 1981), employees with higher internal pay standings generally intend to assess whether they have already earned comparatively more amounts of pay than their internal colleagues, and their perceptions of pay discrepancy may be weakened, thus lead to higher pay level satisfaction. More importantly, as discrepancy theory is a derivative of equity theory (Currall, Towler, Judge, and Kohn, 2005; Till and Karren, 2011), the latter provides a general framework to understand causes of perceived inequity and its consequences in pay comparison with others (Adams, 1965). Employees compare the inputs and outcomes for themselves and their coworkers in the organization, and develop comparative ratios considering the pay of coworkers. If an individual's ratio is lower than others, the individual is underpaid and feels dissatisfied with his/her own current pay (Law and Wang 1998; Shin, 2013; Summers and DeNisi, 1990; Sweeney et al., 1990; Sweeney and McFarlin, 2005). Hence, some studies have demonstrated that internal pay standing is positively related to an employee's work attitude and behavior, such as increased pay equity perceptions (Trevor and Wazeter, 2006) and decreased turnover behavior (Pfeffer and Davis-Blake, 1992).

Therefore, we posit that over/underpayment is more predictive and important than internal pay standing in predicting employees' pay level satisfaction for the following reasons. First, according to the discrepancy model (Lawler, 1971, 1981), an employee's pay level satisfaction is determined fundamentally by the focal employee's comprehensive comparison between the pay that he/she should receive and that which he/she actually receives. In particular, the *pay level* of the focal employee and referents, and pay basis both play essential parts in the

comparison process. With regards to over/underpayment, it captures all of the fundamental elements (e.g., individual, organizational, and market/environmental characteristics) of pay basis and focuses on the individual self-referent in the comparative process. Therefore, over/underpayment indicates an overall pay surplus or insufficiency for an individual compared to others, and this pay surplus or insufficiency in turn fosters high or low individual pay level satisfaction (Folger and Konovsky, 1989; McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1993). Second, internal pay standing is solely an outcome-based internal pay comparison between the focal employee and the referents (Pfeffer and Davis-Blake, 1992), which neglects the pay basis. Some researchers suggest that the pay comparison, when based on more complete information, may be more influential on individuals' pay attitudes (Heneman and Judge, 2000). As the results of Scholl et al.'s (1987) comparative testing of 161 employees shows, employees' individual referents are more strongly related to pay satisfaction than internal comparisons. Hence, internal pay standing may be less predictive of employees' pay level satisfaction than over/underpayment is. We thus posit the following hypotheses:

Hypothesis 2. Employees' internal pay standing is positively related to their pay level satisfaction.

Hypothesis 3. Employees' over/underpayment is more predictive of their pay level satisfaction than internal pay standing is.

2.2 Moderating Effect of Pay-for-Performance Intensity

We will use pay-for-performance intensity as the reflection of the pay-for-performance program in this study. A pay program of high PFP intensity means that performance-based pay forms the majority of an employee's pay package, and vice versa. In accordance with the rationale of equity theory (Adams, 1965), the more employees believe that their pay is based on their performance, the more fairly they believe they are paid (Greenberg, 2003; Heneman, 1984). With regards to employees in a pay program of high PFP intensity, their pay is based fundamentally on their performance, which is widely accepted as the pay basis (Gerhart and Milkovich, 1990; Gerhart and Rynes, 2003). It increases the likelihood that input-to-reward ratios will be perceived by

employees as more equitable compared to a pay program of low PFP intensity, thus enhancing their pay satisfaction (Schaubroeck, Shaw, Duffy, and Mitra, 2008). Moreover, Williams et al. (2006) have shown that individually perceived performance-reward contingency is strongly related to pay level satisfaction, indicating that employees are generally more amenable to equity-based pay allocation programs. The PFP program is widely accepted as a type of equity-based compensation program (Bebchuk and Fried, 2006; Gerhart and Fang, 2014), and pay discrepancy, based on a pay program of high PFP intensity, is more acceptable to employees (Broderick and Mavor, 1991; Harder, 1992). Hence, employees in a pay program of high PFP intensity may consider the pay comparison results as more fair and acceptable, compared to the employees in a pay program of low PFP intensity. Employees are therefore more inclined to enhance their attention and inputs to attain their performance goals and valued outcomes (Greenberg, 2003), thus their "discrepancy cognitions" will be weakened, in turn increasing their pay level satisfaction (Kim et al., 2008). Accordingly, in the pay program of high PFP intensity, those employees in a disadvantaged situation with regards to their pay comparison may feel more satisfied with their pay level than their counterparts in a pay program of low PFP intensity.

To sum up, we infer that the discrepancy of pay level satisfaction between the employees who dominate in a pay comparison situation and the employees who are the underdogs may be smaller among employees who are in a pay program of high PFP intensity, compared to those in a program of low PFP intensity. In other words, we consider that the relationship between employees' pay comparison and their pay level satisfaction is weaker among employees in a pay program of high PFP intensity than among those in a program of low PFP intensity. Prior empirical research has provided indirect evidence supporting our argument. For example, Harder (1992) has found that PFP contingencies can lessen the negative effect of individual underreward on his or her performance. We thus construct the following hypothesis:

Hypothesis 4. Pay-for-performance intensity will attenuate the relationship between pay comparison and pay level satisfaction: a) The positive relationship between over/underpayment and pay level satisfaction will be weaker when the pay-for-performance intensity is high; b) The positive relationship between

internal pay standing and pay level satisfaction will be weaker when the pay-for-performance intensity is high.

3 Method

3.1 Sample and Procedure

We collected our data from 14 Chinese firms, located in 6 different cities. All firms had previous experience cooperating with our research team. More importantly, one of the TMT executives in each firm gave permission for our data collection, which included sharing their employees' annual objective pay data with us. The 14 firms were scattered across a wide range of industries, including manufacturing, electronics, electricity, financing and services. This helped avoid the contextual constraints associated with the use of limited industries (Rousseau and Fried, 2001).

The investigation within each firm followed a three-step procedure. First, with the executive's permission, the HR manager made a list of employees who were willing to participate in our work-related investigation, covering various job categories and job levels. Second, all participants gathered in a meeting room to complete a pencil-and-paper-based questionnaire assessing their demographic information, occupational characteristics and pay level satisfaction. We ensured confidentiality throughout the data collection, and each participant was compensated with a gift valued at about 10 Chinese yuan (about 1.50 US dollars). Finally, after collecting all questionnaires, the researchers obtained the participants' annual pay data, including pay level and performance-based pay level, from the firm's HR manager. Note that all of the surveys were conducted at the beginning (March to April) of the Chinese Lunar New Year of 2009. Hence, the objective pay data we collected represented the overall income of the participants in the year of 2008.

In total, we surveyed 446 employees from 14 firms. Unluckily, because the HR manager of one manufacturing firm lost the coding sheet, all of the 48 questionnaires surveyed from this firm could not be matched to the participants' objective pay data. As well, 16 participants in our sample were undergoing a probationary period of employment, and their pay standard did not belong to the firm's formal pay system. Hence, these 16 participants' data and responses were

deleted from the sample. As a result, the final sample consisted of 382 employees coupled with actual pay data from 13 firms, leading to a validity rate of 85.7 percent.

Of the 382 participants, 53.9% were male and 76.1% were married; as for age, 13.5% were below 25, 19.9% were between 26–30, 22.9% were between 31–35, 21.3% were between 36–40, 10.8% were between 41–45, 7% were between 46–50, and the remaining 4.6% were above 50. Also, 64.7% of our sample had completed vocational college or university education. With regards to position level, 35.5% were managers (27.4% line managers and 8.1% middle or high level managers); as for occupation, 36.8% were manual workers, 29% were technicians, 29.8% were administrators and 4.3% were marketing staff. In addition, 38.5% of the participants were from state-owned firms, 33.2% were from private firms, 9.4% were from foreign-owned firms, and 18.4% were from joint-venture firms.

3.2 Measures

Because the scales we used were originally developed in English, we followed Brislin's (1980) back-translation procedure and developed the Chinese measures.

Over/underpayment. In our study, we followed Levine (1993) and manipulated over/underpayment as a single continuous variable wherein positive value indicated overpayment and negative value reflected underpayment. As such, the measurement of over/underpayment in our study incorporated employees' input elements (i.e., age, gender, marital state, education, position level, job and firm), which are widely accepted as the legitimate pay basis (Dyer, Schwab, and Theriault, 1976; Freedman and Montanari, 1980; Lawler, 1966; Miceli and Lane, 1991; Werner and Ones, 2000). To estimate over/underpayment, we constructed a two-step procedure. First, we constructed a log pay level equation to evaluate each employee's predicted pay, following prior related research (e.g., Fong et al., 2010; Levine, 1993; Wade, O'Reilly, and Pollock, 2006):

$$\text{Ln (pay)} = \beta_1 * \text{Age} + \beta_2 * \text{Gender} + \beta_3 * \text{Marital state} + \beta_4 * \text{Education} + \beta_5 * \text{Position level} + \beta_6 * \text{Job}_1 + \beta_7 * \text{Job}_2 + \beta_8 * \text{Job}_3 + \beta_9 * \text{Firm}_1 + \beta_{10} * \text{Firm}_2 + \beta_{11} * \text{Firm}_3.$$

In this log pay level equation, gender and marital state are dummy variables

where 1 represents female and married employees respectively; jobs are manipulated as occupation dummy variables: (1) marketing staff, (2) technicians, and (3) administrators, with the base group being manual workers; firms are manipulated as ownership dummy variables: (1) private-owned, (2) foreign-owned, and (3) joint-venture, with the base group being state-owned firms. We also included five city dummy variables (not presented in the equation) for unobserved market and environmental influences on employees' pay. Even though we were unable to control for employees' performance because of the limited performance data, the R value for this equation is 0.78 and the R^2 value is 0.61, indicating that more than 60 percent of employees' pay level variances are explained. Thus, each employee's predicted value of pay level from the above regression represents his or her value that should be paid.

Second, the residuals (actual pay – predicted pay) were used to objectively measure the over/underpayment. The measure of regression residuals has been successfully applied as predictors in previous compensation research (e.g., Levine, 1993; Trevor and Wazeter, 2006; Wade et al., 2006).

Internal pay standing. Internal pay standing, which represents employees' location in the internal pay hierarchy, was calculated by the ratio of the focal employee's pay level divided by the average pay of samples from the same firm, as previous studies have done (Pfeffer and Davis-Blake, 1992; Trevor and Wazete, 2006).

Pay level satisfaction. Employees' pay level satisfaction was evaluated using part of the Pay Satisfaction Questionnaire (Heneman and Schwab, 1985). The four items of the pay level satisfaction scale are (1) "my taken home pay," (2) "my current salary," (3) "my overall level of pay," (4) "size of my current salary" (1= "very dissatisfied"; 3= "neutral"; 5= "very satisfied"). The Cronbach's alpha for this scale is 0.89.

Pay-for-performance intensity. Given the multiple aspects of the pay-for-performance program (Gerhart, Rynes, and Fulmer, 2009; Rynes, Gerhart, and Parks, 2005), we focused only on the moderating effect of PFP intensity in this study. Pay-for-performance intensity describes the degree of the link between pay and work performance, and reflects the percentage of an employee's performance-based pay in his or her overall pay (e.g., Bloom and Milkovich, 1998; Donoher, Reed, and Storrud-Barnes, 2007; Gerhart and Milkovich, 1990). Following the previous research, we calculated PFP intensity as the ratio of the

focal employee's performance-based pay level divided by his or her overall pay.

Control variables. In accordance with the previous research on pay level satisfaction, the demographics and occupational information have been defined as controls to avoid potentially confounding effects, including gender, age, education, position level, and firm ownership (e.g., Harris et al., 2008; Law and Wong, 1998; Summers and DeNisi, 1990; Sweeney and McFarlin, 2005; Sweeney et al., 1990). It has been recognized that women are generally more satisfied with pay level than men (e.g., Loscocco and Spitze, 1991; Graham and Welbourne, 1999); older employees usually have higher levels of pay satisfaction than younger (e.g., McFarlin and Sweeney, 1996); higher-educated and higher position level employees exhibit less satisfaction with their pay than lower-educated employees (e.g., Berkowitz et al., 1987; Klein and Maher, 1966); position level is positively related to pay level satisfaction (e.g., Williams et al., 2006); and firm ownership has diverse associations with pay satisfaction for multiple ownership types.

Based on the aforementioned methodological considerations, we controlled for employees' actual pay level (Heneman and Judge, 2000; Rice et al., 1990; Williams et al., 2006), because pay level has been proved to positively predict pay level satisfaction (e.g., Dyer and Theriault, 1976; Judge, 1993; Sweeney et al., 1990).

4 Results

Descriptive statistics and correlations of all variables are presented in Table 1. Of all the individual and occupational characteristics, position level is the only variable that correlated significantly with pay level satisfaction ($r = 0.13$, $p < 0.05$). Furthermore, two of the three ownership dummy variables, private-owned and joint-venture, are related to pay level satisfaction positively ($r = 0.14$, $p < 0.01$) and negatively ($r = –0.17$, $p < 0.01$) respectively. Regarding pay systems, employees' pay level satisfaction is not only positively correlated with the CPI-adjusted actual pay level ($r = 0.26$, $p < 0.01$) and PFP intensity ($r = 0.23$, $p < 0.01$) – which is consistent with the conclusions of existing reviews (Heneman and Judge, 2000; Williams et al., 2006) – but is also positively correlated with the predictors of over/underpayment ($r = 0.32$, $p < 0.01$) and internal pay standing ($r = 0.28$, $p < 0.01$), which we have posited in our study.

Table 1 Means, Standard Deviations, and Correlations [a]

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender [b]	0.46	0.50													
2. Age [b]	3.35	1.62	–0.09												
3. Marriage [c]	0.76	0.43	0.03	0.59**											
4. Education [c]	1.91	0.80	0.05	–0.24**	–0.21**										
5. Position level [c]	1.44	0.64	–0.09	0.08	0.12*	0.20**									
6. Private-owned [b]	0.33	0.47	0.01	–0.23**	–0.08	0.23**	0.13**								
7. Foreign-owned [b]	0.09	0.29	–0.07	–0.17**	–0.14**	–0.02	0.10*	–0.23**							
8. Joint-venture [b]	0.19	0.39	0.01	0.17**	0.22**	–0.02	0.04	–0.34**	–0.16**						
9. Actual pay level [d]	28,044.66	18,391.86	–0.14**	0.29**	0.25**	0.34**	0.49**	0.05	–0.13*	0.20**					
10. Over/underpayment [e]	0.00	0.36	–0.00	–0.00	–0.00	0.00	–0.00	0.00	0.00	–0.00	0.62**				
11. Internal pay standing [f]	1.00	0.51	–0.12*	0.23**	0.22**	0.18**	0.50**	0.00	0.00	0.00	0.75**	0.61**			
12. Pay-for-performance intensity [g]	0.20	0.16	–0.02	–0.01	0.04	0.38**	0.23**	0.02	–0.22**	0.01	0.62**	0.31**	0.24**		
13. Pay level satisfaction [h]	2.64	0.87	–0.07	–0.06	0.01	0.10	0.13*	0.14**	0.02	–0.17**	0.26**	0.32**	0.28**	0.23**	(0.89)

Notes. [a] N=382; * $p < 0.05$, ** $p < 0.01$; Internal consistency reliability appears in the parenthesis.

[b] Dummy coded: Gender, 0 = male, 1 = female; Marriage, 0 = single, 1 = married; Private-owned/Foreign-owned/Joint-venture, 0 = no, 1 = yes.

[c] Category coded: Age, 1 = less than 25 years old, 2 = 26–30 years old, 3 = 31–35 years old, 4 = 36–40 years old, 5 = 41–45 years old, 6 = 46–50 years old, 7= more than 50 years old; Education, 1 = high school, 2 = vocational college, 3 = undergraduate education in university, 4 = graduate education in university; Position level, 1 = non-managers, 2 = line-managers, 3 = middle- and upper-level managers.

[d] The mean and standard deviation of actual pay level is CPI-adjusted and is in *yuan,* and the range is from 5,000 to 135,000.

[e] The range of over/underpayment calculated by the residuals is from −130,000 to 130,000.

[f] The range of internal pay standing calculated by the ratio is from 0 to 6.

[g] The range of pay-for-performance intensity calculated by the ratio is from 0 to 1.

[h] The range of pay level satisfaction measured by the 5-point Likert scale is from 1 to 5.

Following Cohen, West, and Aiken's (2003) procedures, we applied three-step multilevel regression analyses in this study. First, control variables were entered into the regression equation; second, the independent variables and moderator were entered in the regression equation; finally, the interactions, which were constructed by multiplying the grand mean-centered predictor and moderator, were included in the regression. Results of the multicollinearity tests showed that the VIF of the variables in all models was less than 10.0, indicating no serious multicollinearity problems in our regression models.

As shown in Table 2, Model 1 provides the baseline results of the effects of the control variables, which show that actual pay level is positively related to pay level satisfaction ($\beta = 0.36$, $p < 0.001$). In Model 2 of the joint models, which includes both over/underpayment and internal pay standing as predictors, results suggest that pay level satisfaction is significantly predicted by over/underpayment ($\beta = 0.31$, $p < 0.01$) but not by internal pay standing ($\beta = 0.08$, *n.s.*). Therefore, Hypothesis 1 is supported, and Hypothesis 3 is partially supported, but Hypothesis 2 is not supported. Furthermore, Model 3 shows that the two interactions weakly increase the proportion of explained variance for pay level satisfaction ($\Delta R^2 = 0.02$, $p < 0.05$), in general. Specifically, this additional prediction is solely attributable to the impact of the interaction between internal pay standing and PFP intensity on employees' pay level satisfaction ($\beta = -0.14$, $p < 0.05$). Hence, Hypothesis 4b is partially supported. Considering the high correlation between over/underpayment and internal pay standing ($r = 0.61$) in this study, we further investigated the main effects and the moderation effects of over/underpayment, internal pay standing and PFP intensity on employees' pay level satisfaction in separate models for robustness testing.

In further support of Hypothesis 1, employees' over/underpayment is positively related to their pay level satisfaction ($\beta = 0.37$, $p < 0.001$) in the independent regression model (Model 4) as well. Without employees' over/underpayment as a covariate, internal pay standing is also positively related to their pay level satisfaction, as shown in Model 6 of Table 2 ($\beta = 0.24$, $p < 0.01$). Thus, Hypothesis 2 is supported conditionally. Moreover, in order to determine the relative importance of over/underpayment and internal pay standing in predicting employees' pay level satisfaction, we applied Budescu's dominance analysis (1993). Based on Budescu's rationale (1993), dominance analysis can identify the variables' relative importance by meeting the following

Table 2 Regression Analyses on Pay Level Satisfaction [a]

Variable	Base model	Joint models		Over/underpayment models		Internal pay standing models	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Control variables							
Gender	–0.00	–0.08	–0.08	–0.08	–0.08	–0.02	–0.03
Age	–0.18*	–0.03	–0.01	–0.02	0.01	–0.12	–0.10
Marriage	0.07	0.10	0.10	0.12†	0.12†	0.05	0.05
Education	–0.04	0.06	0.04	0.08	.08	–0.06	–0.07
Position level	0.00	0.09	0.10	0.13*	0.13*	–0.06	–0.05
Private-owned	0.03	0.10	0.13†	0.09	0.11†	0.11†	.14*
Foreign-owned	0.01	0.02	0.04	0.01	0.03	0.05	0.06
Joint-venture	–0.26***	–0.14*	–0.12†	–0.15*	–0.14*	–0.16*	–0.15*
Actual pay level [b]	0.36***	–0.14	–0.16	–0.15	–0.17	0.10	0.07
Independents							
Over/underpayment		0.31**	0.30*	0.37***	0.40***		
Internal pay standing		0.08	0.11			0.24**	0.26**
Pay-for-performance intensity		0.13†	0.19*	0.11	0.15*	0.15*	0.22**
Interactions							
Over/underpayment × pay-for-performance intensity			.01		–0.09		

(*To be continued*)

(*Continued*)

Variable	Base model	Joint models		Over/underpayment models		Internal pay standing models	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Internal pay standing × pay-for-performance intensity			–0.14*				–0.14*
F value	6.17***	6.32***	5.92***	6.84***	6.47***	6.09***	6.21***
R^2	0.14	0.18	0.20	0.18	0.19	0.17	0.19
ΔR^2		0.04	0.02	0.04	0.01	0.03	0.02

Notes. [a] N=382; † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Numbers in parentheses are standardized coefficients.

[b] Actual pay levels controlled in regression are the natural logarithm value of the CPI-adjusted real pay levels.

three conditions: "(a) Importance should be defined in terms of a variable's 'reduction of error' in predicting the criterion; (b) The method should allow for direct comparison of relative importance instead of relying on inferred measures; (c) Importance should reflect a variable's direct effect (i.e., when considered by itself), total effect (i.e., conditional on all other predictors), and partial effect (i.e., conditional on subsets of predictors)" (Budescu, 1993: 544). We followed the procedures of Budescu (1993), and found that the dominance measures of over/underpayment and internal pay standing in predicting pay level satisfaction are 0.14 and 0.08 respectively. Thus, we concluded that employees' over/underpayment is more predictive than internal pay standing of their pay level satisfaction, and further confirmed Hypothesis 3.

In addition, PFP intensity has a major effect on individual pay level satisfaction in both models (β = 0.15, $p < 0.05$; β = 0.22, $p < 0.01$), but its moderating effect is only significant on the relationship between employees' internal pay standing and their pay level satisfaction (β = –0.14, $p < 0.05$, see Model 7). However, the relationship between employees' over/underpayment and their pay level satisfaction is not moderated by PFP intensity as shown in Model 5 (β = –0.09, *n.s.*), which is consistent with the results in the joint model shown above. Hence, our assumption regarding the moderating effect of PFP intensity on the relationship between employees' over/underpayment and their pay level satisfaction (H4a) is not supported.

To clarify this interaction effect further, we followed Cohen et al. (2003) and conducted simple slope regression analyses of employees' pay level satisfaction on their internal pay standing, by differentiating PFP intensity from high (*Mean* + 1*SD*) versus low (*Mean*－1*SD*). As shown in Figure 2, employees' internal pay standing is positively related to their pay level satisfaction among employees with low PFP intensity (β = 0.40, Z= 3.15, $p < 0.01$), but is not significantly associated with pay level satisfaction among those with high PFP intensity (β = 0.12, Z= 0.17, *n.s.*), indicating that PFP intensity mitigates the relationship between employees' internal pay standing and their pay level satisfaction. Meanwhile, the pay level satisfaction of employees in the pay program of high PFP intensity is generally higher than those in the pay program of low PFP intensity. Accordingly, the discrepancy of pay level satisfaction is less for employees in the pay program of high PFP intensity, compared to those in the pay program of low PFP intensity. Taking these findings together, Hypothesis 4b,

as it applies to the moderating effect of PFP intensity on the relationship between employees' internal pay standing on their pay level satisfaction, is supported.

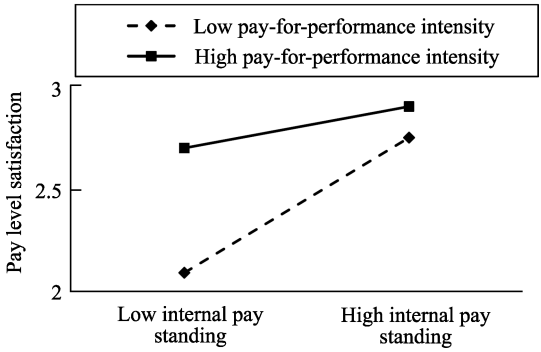

Figure 2 Moderating Effect of Pay-for-Performance Intensity on the Relation between Internal Pay Standing and Pay Level Satisfaction

5 Discussion

In this study, we reconsider the influence of pay comparison on employees' pay level satisfaction by taking pay basis and pay program into account. The results of 382 employees in 13 Chinese firms show a significant positive relationship between the objectively calculated over/underpayment and employees' pay level satisfaction. Our findings suggest that the smaller the discrepancy between the amounts of pay that employees actually receive and the amounts that they are supposed to receive, a higher level of pay level satisfaction is perceived. Meanwhile, employees' over/underpayment is more predictive of their pay level satisfaction than internal pay standing, because the latter is an outcome-based measure of internal pay comparison, and its impact on pay level satisfaction is found to be significant only when over/underpayment is not controlled. Moreover, the relationship between employees' internal pay standing and their pay level satisfaction is constrained among employees whose pay packages are comprised larger amounts of performance-based pay. Next, we will discuss the theoretical and practical implications derived from these findings.

5.1 Theoretical Contributions

The first contribution that the present study makes to the pay level satisfaction

literature is the introduction of a comprehensive individual pay comparison concept of over/underpayment into the pay level satisfaction research. Employees' over/underpayment refers to the degree of discrepancy between the amounts of pay that one actually earns and the amounts that one is supposed to receive, which takes employees' pay basis into account simultaneously. Our finding in this regard demonstrates a robust positive impact of employees' over/underpayment on their pay level satisfaction, beyond the influence of absolute and relative pay levels. This finding not only answers Williams et al.'s (2006) call for direct proof of the discrepant perceptions in determining individual pay level satisfaction, but also highlights the importance of considering pay basis when extending existing theoretical models of pay level satisfaction.

Moreover, although we found that both of the pay comparison results, namely employees' over/underpayment and internal pay standing, are positively related to their pay level satisfaction, we consider that over/underpayment is more influential and predictive in the process of pay comparison than internal pay standing. As shown in our findings, the positive relationship between employees' internal pay standing and their pay level satisfaction is not significant when the effect of employees' over/underpayment on their pay level satisfaction is controlled. This finding further supports the importance of pay basis, because internal pay standing is solely an outcome-focused measure of internal pay comparison that reflects the relative standing of one's actual pay level among internal colleagues, whereas over/underpayment is an integrative reflection of individual pay comparison that jointly evaluates the amount of pay that employees should receive and what they actually do receive. Comparatively speaking, according to the discrepancy model (Lawler, 1971, 1981), over/underpayment captures the pay comparison outcome in a more rational way than internal pay standing does, due to its inclusion of legitimate pay basis. Furthermore, by incorporating a set of legitimate *pay bases,* employees' over/underpayment reflects the overall outcome of pay comparison using multiple referents, while internal pay standing simply estimates the pay comparison using internal referents. Accordingly, based on the discrepancy model (Lawler, 1971, 1981), more complete and comprehensive referents of pay comparison should be considered in the pay level satisfaction research (Bordia and Blau, 1998, 2003; Law and Wang, 1998; Sweeney and McFarlin, 2005).

The second contribution of our research is to reveal the constraining role of the pay-for-performance program in the relationship between employees' pay comparison and their pay level satisfaction. We found that the pay-for-performance program can mitigate the relationship between employees' pay comparison and pay level satisfaction. Two specific contributions can be drawn from this finding. First, although a handful of studies have explored the relationship between pay comparison and individual pay level satisfaction (Berkowitz et al., 1987; Oldham et al., 1986; Rice et al., 1990; Sweeney et al., 1990), some researchers have advocated that such relationships may be influenced by pay programs (Heneman and Judge, 2000; Williams et al., 2006). However, limited empirical research has explored the interaction effect of pay comparison and pay programs on individual pay level satisfaction. We make a beneficial attempt, and answer Heneman and Judge's (2000) call to investigate the interactive effect of pay comparison and the pay-for-performance program on individual pay level satisfaction. Second, some scholars and practitioners have argued that there exists an undesirable aspect of pay comparison resulting from increased discrepancy between employees' satisfaction and their pay levels, which in turn might damage the cohesiveness and harmony of organizations (Harrison et al., 1998). However, little research has been devoted to settling this issue. We found that the pay-for-performance program could weaken the magnified discrepancy of pay level satisfaction between employees in the ascendant and those at a disadvantage, because the pay-for-performance program reflects that employees' pay is largely dependent on their performance, which is a key component of pay basis (Gerhart and Milkovich, 1990; Gerhart and Rynes, 2003). This finding of PFP intensity's constrained effect further demonstrates that pay basis should be taken fully into account in pay comparison.

In contrast with our prediction, the positive influence of employees' over/underpayment on their pay level satisfaction remains unchanged regardless of whether the PFP intensity is high or low. One possible explanation for this finding is the strong main effect of employees' over/underpayment on their pay level satisfaction, as discussed earlier. Another plausible reason may be attributed to the conceptual distinction between over/underpayment and internal pay standing. As explained above, internal pay standing is an outcome-focused measure of internal pay comparison, calculated by directly sorting employees' actual pay amounts. However, over/underpayment is a comprehensive concept of

pay comparison that considers employees' inputs and other legitimate *pay bases*. Hence, over/underpayment reflects a more exact and equitable evaluation in the process of pay comparison than internal pay standing does. Also, employees' psychological reactions toward over/underpayment do not interact closely with the pay-for-performance program.

5.2 Limitations and Future Research

Admittedly, our research has several limitations as well. The major limitation of this study is the measure of over/underpayment. Despite the fact that more than sixty percent of variances of actual pay levels are explained by the pay basis included in our study, two aspects of pay basis were still unfortunately ignored because of our restricted empirical data. The first aspect is employees' performance, which is deemed to be the most decisive factor of pay allocation in Western firms (Gerhart and Milkovich, 1990; Gerhart and Rynes, 2003). We could not incorporate employees' performance in the evaluation of over/underpayment because the job characteristics of samples in our study vary substantially. Hence, the performance evaluation criteria are not consistent among employees with various occupations in our study. Moreover, we controlled for PFP intensity by testing our hypotheses in order to minimize the threat of robustness of our findings.

The second aspect is industry-related information. Both economists and compensation scholars have demonstrated that the industrial context plays an indispensable part in determining employee pay levels (Gerhart and Rynes, 2003). Our samples, being collected from limited industries, make it impossible to control for industry-related information as the pay basis in the evaluation of employees' over/underpayment. Meanwhile, considering that industry-related information has strong correlations with the information of ownership and city—which has already been included in the pay regression equation—we could not incorporate industry as the dummy variable. Hence, future research should conduct either some industry-specific studies or multilevel analysis to estimate the between-industry and within-industry variances simultaneously. Moreover, multi-year data with longitudinal research design, and sufficient data from all of the individual, firm and industry levels, should be encouraged in future research on pay comparison and employees' pay level satisfaction.

5.3 Practical Implications

Our findings provide several meaningful insights into compensation management for practitioners in organizations. One straightforward suggestion that we can offer to managers is that they should pay special attention to the equity rule behind pay design. Our research found that the closer the equivalent between one's actual earnings and the amount that one is supposed to earn, the higher the perceived pay level satisfaction of employees. More importantly, we suggest that compensation managers should highlight the importance of pay basis, such as education and position level, in compensation design. Furthermore, our study found that the pay-for-performance program could weaken the relationship between employees' internal pay standing and their pay level satisfaction. Hence, in order to attenuate the negative aspect of pay comparison for organizations cohesiveness, we recommend a pay-for-performance program to be used as an important human resource practice in these organizations.

6 Conclusion

Drawing from the discrepancy model, the present research extends the pay level satisfaction literature through re-examining the influence of pay comparison, by taking pay basis and pay program into account. Extending the previous research, we find that employees' over/underpayment and internal pay standing are positively related to their perceived pay level satisfaction. Furthermore, we provide initial evidence that employees' over/underpayment, which is a more comprehensive reflection of pay comparison, has a more robust impact on pay level satisfaction than internal pay standing does. More importantly, the positive effect of employees' internal pay standing on their pay level satisfaction is constrained by pay-for-performance intensity in such a way that the positive effect is weaker among employees in the pay program of high pay-for-performance intensity. These findings indicate the necessity of incorporating pay basis into the evaluation of the impact of pay comparison on employees' pay level satisfaction.

Acknowledgements This research is supported by the National Science Foundation of China (71232001, 71402061).

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