THE IMPORTANCE OF CONTEXT TO PAY-FOR-PERFORMANCE EFFECTS ON FUTURE EMPLOYEE PERFORMANCE: HOW TIME, PAYMENT TYPE, AND EMPLOYEE CHARACTERISTICS CLARIFY THEORETICAL PREDICTIONS

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ABSTRACT

Despite strong interest in pay-for-performance's (PFP) impact on employee performance, understanding this dynamic has been constrained by narrow approaches to PFP context and measurement. In response, we incorporate time and dual pay components into PFP's operationalization; we also explain how PFP's influence on future effort, and thus the applicability of popular PFP-relevant theories, increases when contextual factors heighten the attention paid to PFP. We test our approaches with 14,443 employees over five years, finding that single and multi-year measures of merit and bonus pay predict future performance, interact with each other, and vary in effect across employee tenure and performance.

Aggregated employee performance influences organizational success (Barnard, 1938; Wright, Dunford, & Snell, 2001). Pay-for-performance (PFP), usually composed of merit and/or bonus pay, is a critical human resource practice designed to influence this employee performance (Gerhart & Rynes, 2003), as evidenced by its use in over 90% of firms and for most employees in those firms (Cohen, 2006). This usage is widespread, in part, because (1) monetary incentives are the most instrumental medium of exchange (Locke, Feren, McCaleb, Shaw, & Denny, 1980), (2) PFP can direct employee action (Jenkins, Mitra, Gupta, & Shaw, 1998; Shaw & Gupta, 2007) and attitudes (Shaw, Duffy, Mitra, Lockhart, & Bowler, 2003), and (3) firms often have more discretion in setting PFP than in setting pay level (Gerhart & Milkovich, 1990).

Despite considerable PFP research, few studies explicitly address the influence of PFP on future employee performance. This is surprising given that PFP's presumed link to subsequent performance (as well as to attraction and retention) is why it is so popular in organizations and occupies a central position in several fundamental theoretical approaches to reward systems. Scholars have stipulated that PFP will have a positive effect on future performance via such mechanisms as high instrumentality (expectancy theory), an equitable outcomes-to-inputs ratio (equity theory), and met obligations by the employer (psychological contracts). Hence, because the PFP-future performance relationship is predicted by an array of theories addressing pay's link to motivation and job performance (hereafter "PFP-relevant theories") and is a fundamental assumption underlying the ubiquitous use of PFP, so few tests of the relationship is cause for some alarm.

Further, the few studies that have looked at PFP as a precursor to performance (most PFP studies look at performance as a precursor to pay) have not taken a comprehensive, context-based, or longitudinal approach to the question (see Jenkins et al.'s 1998 meta-analysis for a

variety of approaches to how performance and PFP co-vary). Minimal work considers the more complex (and more realistic) scenarios in which a major role is played by such contextual factors as time (e.g., short-term and long-term PFP effects), simultaneous pay influences (e.g., merit and bonus pay), and employee characteristics. Moreover, widespread PFP usage, PFP-relevant theories, and occasional positive PFP effects notwithstanding, PFP efficacy is questioned both by academic researchers (e.g., Lawler, 2000) and the popular press (e.g., Green, 2010; Kohn, 1993). Specific concerns are that these systems are not motivating (Pfeffer, 1998) or that they motivate undesirable behavior, such as increased employee competition (Deming, 1986).

Such equivocal conclusions indicate that the PFP construct may be more complex and context dependent than can be captured in simple bivariate relationships (Schwab, 1991). As such, we suggest two contextual factors that potentially clarify how PFP influences future employee performance over time. First, we broaden PFP's operationalization by including both distinct payment types (merit and bonus) and multiple timeframes, the latter of which allows us to theorize and test how PFP relationships evolve over time. Second, building on our broad operationalization of PFP, we present a new conceptualization of PFP's effects, in which the PFP context drives PFP effectiveness by determining the level of *attention* (defined as a close or careful observing) that is focused on PFP. By identifying potential interdependencies involving PFP, this attention perspective also stipulates conditions under which our fundamental PFP-relevant theories are most (and least) germane. The results reported here, which are based on five years of observations for 14,443 insurance company employees, generally support our expanded operationalization of the PFP construct, our attention-based conceptual model, and the importance of context to understanding when PFP-relevant theories best apply. Moreover, our findings yield clear implications for management practice by identifying environments in which

PFP will be most (and least) likely to produce employee performance gains.

THEORY AND CONTEXT IN PFP

Pay-for-performance (PFP) is defined as "Pay that varies with some measure of individual or organizational performance…" (Milkovich, Newman, & Gerhart, 2011: 661). While several organizational theories address PFP, our focus here is on establishing key conceptual and empirical contingencies that qualify the extent to which these theories apply. We use fundamental "*effort triggers*" from three theoretical frameworks commonly associated with reward systems to illustrate how context determines the relevance of both the theories and the PFP-future performance relationship itself. Expectancy theory (Vroom, 1964) suggests that if pay is commensurate with performance, employees will be motivated to increase effort due to perceptions of high instrumentality (i.e., a clear line-of-sight between performance and pay). If pay, however, is not proportional to performance (i.e., it is in excess or deficient), instrumentality suffers and employees will reduce their effort (Porter & Steers, 1973; Vroom, 1964). Equity theory (Adams, 1963) addresses distributive justice and, similar to pay discrepancy (Lawler, 1971) and relative deprivation frameworks (Crosby, 1976, 1984), suggests that when the perceived ratio of work outcomes (e.g., pay) to work inputs (e.g., performance) is less than the perceived ratios from socially relevant referents, employees will perceive inequity and experience psychological distress. These equity-based theories also predict that employees will respond to inequity perceptions by attempting to remove the inequity through either seeking out additional outcomes (e.g., asking for more pay) or by reducing inputs such as effort (Raja, Johns, & Ntalianis, 2004). Similarly, psychological contracts theory, which draws from Barnard (1938) and Simon's (1947) "organizational equilibrium" and Blau's (1964) social exchange theory, is based on the employee's perception of existing mutual employee-organizational obligations

(Dulac, Coyle-Shapiro, Henderson, & Wayne, 2008; Nicholson & Johns, 1985; Robinson, Kraatz, & Rousseau, 1994; Robinson & Rousseau, 1994; Rousseau, 1988; Schein, 1965; Shaw, Delery, Jenkins, & Gupta, 1998). These perceptions suggest that deficient levels of pay compared to employee perceptions of deserved pay reduce employee feelings of obligation to the company, consequently lowering effort and performance.

The key effort triggers from these three theories (i.e., perceptions of instrumentality, equity, and met obligations) all indicate that PFP should enhance future performance because employees exert effort, in part, based on their expectations of the organizational rewards that will result from that effort (Gerhart & Rynes, 2003; Schaubroeck, Shaw, Duffy, & Mitra 2008). While the application of these theories to PFP is straightforward, we argue that greater recognition of context has considerable potential for advancing PFP's theoretical development and empirical findings. Cappelli & Sherer (1991), among others (e.g., Becker & Gerhart, 1996; Delery & Shaw, 2001; Gerhart, 2005; Hausknecht & Trevor, 2011; Joshi & Roh, 2009), extolled the need to examine context in management research to improve our understanding of the causal processes underpinning the relationships studied. However, despite the ubiquitous usage of PFP in organizations, the role of context has been surprisingly absent from PFP research. This absence may help to explain both the disparate research results and the differing opinions about the efficacy of PFP. Thus, our goal here is to draw on context to improve the practical and conceptual understanding of PFP effects on employee performance; to do so we first operationalize the PFP construct more broadly and then provide a general attention contingency that qualifies the relevance of standard theories underlying PFP usage.

CONTEXTUAL CONSIDERATION 1: OPERATIONALIZING PFP

The first contextual aspect we explore is the PFP construct operationalization. Most PFP

studies use cross-sectional data and focus on a single pay component (e.g., Harris, Gilbreath, & Sunday, 1998; Heneman, 1992; Shaw, et al., 2003), which suggests narrow conceptualizations of PFP. Yet, research indicates that people do not focus solely on current (Albert, 1977; Carver & Scheier, 1990; Hsee & Abelson, 1991; Sturman & Trevor, 2001) or on single employment outcomes (Brockner & Weisenfeld, 1996; Trevor & Wazeter, 2006). In turn, we broaden the PFP operationalization by including both a *type* and a *timeframe* dimension. Here, we focus on the two most common types of PFP used by firms (i.e., merit and bonus pay) and consider both the short- and long-term effects of each type.

Short-term Merit and Bonus Pay and Future Employee Performance

Firms use both *merit pay*, defined as an incremental increase in base salary due to past performance (Milkovich et al., 2011), and *bonus pay*, defined as a lump sum cash payment used to recognize past performance (Milkovich et al., 2011), to reward past performance and set expectations for future rewards. Unlike merit pay, bonus pay does not permanently change an employee's base salary (Sturman & Short, 2000) or an organization's fixed labor costs (Kahn & Sherer, 1990; Sturman & Short, 2000). Thus, bonus pay can be advantageous for an organization trying to mitigate expenditures during fluctuating organizational business cycles (Gerhart & Milkovich, 1990) by providing the organization with greater financial flexibility (Gerhart & Trevor, 1996).

Conceptually, these two distinct PFP types are believed to motivate in a similar fashion. Merit and bonus pay's influence on future performance depends on their amounts and the degree to which they are related to past performance (Gerhart & Rynes, 2003). Greater amounts of both should motivate employees to work to maximize future rewards and fulfill their perceived reciprocal obligation to their firm (Maertz & Campion, 2004; Shaw, Dineen, Fang, & Vellella,

2009). In contrast, merit pay and bonuses not commensurate with performance should reduce confidence that effort will be rewarded, due to perceptions of low instrumentality, inequity, and unmet obligations.

Discrepant findings cloud the existing merit pay research. For instance, Pearce, Stevenson, and Perry (1985), in research widely cited as a demonstration that merit pay is not motivational, concluded that merit pay plans were not related to firm performance. Yet, other researchers (e.g., Heneman, 1992; Heneman & Werner, 2002; Kopelman & Reinharth, 1982; Park & Sturman, 2009) have found a modest positive merit pay-performance relationship. Consequentially, these equivocal findings have prompted much debate as to the efficacy of merit pay. Gerhart, Rynes, and Fulmer (2009: 264), for example, concluded that merit pay "can positively influence performance." In contrast, Lawler (2000: 154) stated that merit pay "does little to motivate performance," and Pfeffer (1998) referred to the idea that individual incentive pay can motivate behavior as a "myth." Importantly, these discrepant findings have been attributed, in part, to contextual factors associated with merit pay implementation, research design, and the salience of the rewards rather than problems endemic to merit pay (e.g., Gerhart & Rynes, 2003; Jenkins et al., 1998; Lawler & Jenkins, 1992; Mitra, Gupta, & Jenkins, 1997).

There is surprisingly little theoretical or empirical research on bonus pay, despite potential cost savings and motivational properties (Heneman, 1992; Sturman & Short, 2000). The existing handful of studies regarding bonus pay for employees other than the top management team (e.g., Banker, Lee, Potter, & Srinivasan, 2000; Kahn & Sherer, 1990; Park & Sturman, 2009; Schwab & Olson, 1990) are generally supportive. Banker et al. (2000), for example, found that employees' subsequent sales productivity increased following the implementation of a bonus program. Similarly, Kahn and Sherer (1990) found a positive effect of

bonus pay on future performance, although the relationship was stronger for high-level managers than for low-level managers (a finding indicative of the importance of context in PFP).

In sum, merit pay and bonus pay are distinct organizational attempts to foster future performance by tying past performance to pay. Given the strong conceptual support that expectancy, equity, and psychological contract theories provide for PFP in general, and the merit and bonus literatures' support, albeit limited and nuanced, we expect that merit and bonus pay will be positively related to employees' future job performance.

Hypothesis 1. Merit pay will be positively associated with future performance.

Hypothesis 2. Bonus pay will be positively associated with future performance.

Long-term Merit and Bonus Pay and Future Employee Performance

Our expansion of the PFP operationalization also involves extending PFP measurement beyond the short-term. From an expectancy theory standpoint, prior PFP experience creates expectations about the degree to which future performance will be rewarded, thus influencing instrumentality beliefs. Equity theory stipulates that employees may compare their current outcome-to-input ratio to their past ratios (in addition to the ratios of socially relevant others). Finally, the psychological contract perspective suggests that, over time, employees feel they owe the company less but that the company owes them more (Robinson et al., 1994), thus possibly changing their focus from single- to multi-year pay components. Together, these theories indicate that long-term PFP effects may be as or more important than short-term effects on key effort triggers. However, in the PFP realm, most studies examine a single instance of pay, ignoring the long-term effects (Gerhart & Rynes, 2003). To the degree that long-term effects are important, results of cross-sectional studies potentially underestimate the link between pay and future employee performance. Thus, we next examine how long-term PFP effects should emerge.

PFP trend. The importance of the unique effects of trends in employment outcomes (separate from effects of the most recent outcome) has been demonstrated in studies of salary change effects on satisfaction (Hsee, Abelson, and Salovey, 1991), job satisfaction change on turnover intention (Chen, Ployhart, Thomas, Anderson & Bliese., 2011), and performance trends (and subsequent pay trends, given the samples) on turnover (Harrison, Virick, & William, 1996; Sturman & Trevor, 2001). The principles underlying such trend effects are the beliefs that employees are motivated to maximize material outcomes from the employment relationship (Thibaut & Walker, 1975), and that trends in employment outcomes can affect employee expectations of the likelihood of future outcomes (Brockner & Wiesenfeld, 1996). Thus, when merit and bonus pay trends (i.e., the trajectories, or slopes, of pay outcomes over time) are positive, employees should experience optimism and increased confidence that they will continue to be rewarded, thereby strengthening instrumentality perceptions. Similarly, optimism regarding pay in the future increases perceptions of pay equity (Crosby, 1984). In contrast, when a PFP trend is negative, an employee may lose confidence in PFP systems and perceive inequity and unmet employer obligations. Consequently, greater PFP trends should lead to increased effort and future job performance.

Hypothesis 3a. Merit trend will be positively associated with future performance.

Hypothesis 3b. Bonus trend will be positively associated with future performance.

PFP average. Paralleling the PFP trend arguments, PFP average across time should yield expectations of future rewards unique from those prompted by the most recent PFP outcome. Higher PFP averages should provide greater optimism that performance inputs will be well rewarded; hence, the perceptions of instrumentality, equity, and met obligations will be greater, resulting in enhanced effort and subsequent employee job performance.

Hypothesis 3c. Merit average will be positively associated with future performance.

Hypothesis 3d. Bonus average will be positively associated with future performance.

PFP variability. An additional consideration regarding the influence of PFP over time is the degree to which employees can understand and predict how PFP outcomes will be allocated. Stable employment outcomes over time suggest fair procedures and the likelihood of similar outcomes in the future (Brockner & Wiesenfeld, 1996). Hence, when PFP outcomes are reliable over time (i.e., less volatile), employees should have greater confidence in the validity of the PFP system. This should then be associated with higher levels of instrumentality because PFP will be seen as less random and more predictably determined. In contrast, because highly variable outcomes may lead to the inference that unfair or arbitrary procedures were used (Brockner & Wiesenfeld, 1996), we expect that when an employee's PFP varies more over time, the employee will have less faith in the PFP process, resulting in reduced motivation and, consequently, lower performance.

Hypothesis 4a. Merit variability will be negatively associated with future performance.

Hypothesis 4b. Bonus variability will be negatively associated with future performance.

CONTEXTUAL CONSIDERATION 2: ATTENTION PAID TO PFP

Building on our expanded operationalization of PFP, our second contextual consideration is the level of attention paid to PFP. We argue that the effort triggers we have identified in expectancy, equity, and psychological contract theories, as well as employees' resultant effort levels, are not simply functions of organizational pay policy or the employee's prior year's pay situation, as has often been assumed in PFP research. Rather, employees' perceptions of instrumentality, equity, and met obligations, and thus their subsequent effort and performance levels, are dependent on an array of situational and individual characteristics that determine the

attention paid to PFP. As a result, the appropriateness of the underlying PFP-relevant theories themselves is similarly dependent on such contextual factors and the subsequent employee attention levels.

Our primary contention is that contextual characteristics drive employee attention focused on PFP amounts, with heightened attention better allowing PFP to yield the instrumentality, equity, and met obligations inferences that subsequently trigger effort and future performance (see Figure 1). Thus, PFP works through these effort triggers, which are the central effort explanations from expectancy, equity, and psychological contract theories. In this characterization of the positive effects of PFP being strengthened as the attention focused on the PFP amount increases, the attention determinants include both employee attributes (e.g., employee tenure and employee performance) and situational factors (e.g., the reliability of PFP information, the likelihood of a high PFP amount, and the presence of additional PFP types).

Insert Figure 1 about here

The specific rationale for how each of the contextual factors affects attention paid to PFP is provided below. In each case, the hypothesized interdependence between context and PFP requires that employees' heightened attentional focus on PFP amount actually leads to stronger PFP effects on future job performance. It is, in fact, generally argued that the level of attention to an employment outcome corresponds to the level of influence from the outcome (e.g., Brockner & Wiesenfeld, 1996). This general principle appears to hold in terms of our PFP outcomes as well, given that attention is fundamental to the calculations required in the effort triggers of expectancy, equity, and psychological contract predictions. That is, attention increases the extent

to which the effort trigger computations correspond to theory predictions, as attention increases the ability to accurately infer instrumentality (likelihood that performance will be rewarded), equity (proportionate outcomes to inputs ratios), and the extent to which the employer has met its obligations. Conversely, relative inattention to PFP amounts should produce inaccurate calculations, or no calculations, of instrumentality, equity, and met obligations. Hence, positive PFP effects conforming to PFP-relevant theories' predictions are more likely under conditions that encourage higher attention paid to the critical PFP circumstances. Thus, in contrast to PFP-relevant theories' implicit assumption that attention levels are adequate, our position is that a variety of contextual factors should influence the attention paid to PFP and, subsequently, the degree to which PFP manifests in effort and performance (and, thereby, the degree to which the PFP-relevant theories themselves are applicable).

Situational Determinants of the Attention Directed to PFP

We first examine the situational determinants of the attention focused on a single PFP outcome (i.e., amount). These contextual factors include three long-term PFP outcomes (trend, average, and variability), as well as the presence of an alternative PFP outcome.

PFP trend, average, and variability. Earlier we argued that employees are motivated to maximize material outcomes from the employment relationship (Thibaut & Walker, 1975), and that employment outcome history can affect employee expectations of the likelihood of future outcomes (Brockner & Wiesenfeld, 1996). Thus, when merit and bonus pay trends are positive and averages are high, employees should experience optimism and increased confidence that they will continue to be rewarded. Similarly, stable employment outcomes over time suggest fair procedures (Brockner & Wiesenfeld, 1996), which in turn yield optimism regarding future rewards. Such optimism about future outcomes also results in employees being relatively

unaffected by a single, short-term outcome (Brockner & Wiesenfeld, 1996). Hence, when past PFP experience is favorable, attention to, and influence from, a current PFP outcome (i.e., a merit or bonus award) will be diminished because the positive past experience engenders greater optimism about the likelihood of maximizing PFP rewards in the future. In other words, employees attend less to a single short-term PFP disappointment (or success) when the PFP future seems bright. Similarly, if, over time, a firm has generally abided by the implied contract to reciprocate an employee fairly for work performed, the employee may overlook a single contract violation. That employee may attribute the single violation to circumstances, rather than to the firm itself (Morrison & Robinson, 1997). In contrast, however, if there have been unfavorable pay experiences that suggest pessimism about future rewards and perceptions of unfair or unreliable resource allocation procedures (e.g., negative trend, low average, or high variability), the short-term PFP outcome will warrant more attention and thus have a larger effect on subsequent effort and performance. This prediction is consistent with the substantial support documented by Brockner and Wiesenfeld (1996) for the tendency of a single employment outcome to be more attended to and influential when it emerges from unfair procedures.

Hypothesis 5a. When PFP trend is low, the PFP-future performance relationship will be stronger.

Hypothesis 5b. When PFP average is low, the PFP-future performance relationship will be stronger.

Hypothesis 5c. When PFP variability is high, the PFP-future performance relationship will be stronger.

Additional PFP type present. In addition to considering PFP over time rather than as a single event, we also expect that most employees respond to the entire PFP package, rather than

only to a single PFP type (i.e., merit or bonus pay). Building on earlier work that has investigated multiple PFP types as independent effects (e.g., Gomez-Mejia & Balkin, 1989; Kahn & Sherer, 1990; Park & Sturman, 2009; Schwab & Olson, 1990) we examine potential interdependence among our two PFP components of interest. While no PFP research to date has addressed such interdependence, conceptual support exists in treatments of employee sense-making in the face of unfavorable outcomes. Brockner and Wiesenfeld (1996: 202) maintained that because employees desire favorable outcomes they tend to respond to unfavorable outcomes by attempting to make sense of the situation, which often entails seeking out additional information. When in this sense-making mode, employees are quite attentive to (and hence influenced by) new relevant data. Specifically, the authors argued that ". . . if individuals experience a lack of outcome favorability in one area of an exchange relationship, they may start to pay greater attention to (and therefore be more affected by) other outcomes associated with the exchange relationship". Trevor and Wazeter (2006: 1265) used the Brockner and Wiesenfeld rationale to hypothesize an interaction between two pay conditions (standing in the internal pay hierarchy and standing in the external pay hierarchy), finding empirical support for their contention that ". . . because people want favorable pay conditions, a lack of favorable internal pay standing will lead to greater attention paid to and, thus, a larger effect for external pay standing." This sense-making and attentional explanation should similarly apply to dual PFP components, in that the desire for favorable PFP outcomes will, in the presence of an unfavorable PFP outcome (e.g., merit), lead to greater attention to (and thus influence of) an alternative PFP outcome (e.g., bonus).

Hypothesis 6. When merit pay is low, the bonus pay-future performance relationship will be stronger.

Employee Determinants of the Attention Directed to PFP

To better explain PFP effects and the applicability of standard PFP-relevant theories, we have described a general attention contingency identifying specific contextual influences on PFP's ability to motivate performance (see Figure 1). In addition to the above situational determinants of employee attention focused on PFP, two employee determinants are also included.

Employee performance. The preceding interaction hypotheses, as well as temporal considerations, are grounded in the belief that the relationship between PFP and future performance is more complex than is evident in prior research and theorizing. Further complexity could be due to a potential ceiling effect on performance ratings. When past performance is high, it becomes increasingly difficult, and at times impossible, for employees to respond to the resulting high merit or bonus pay with improved performance. For instance, an employee who receives a perfect performance rating in one period, regardless of the PFP outcome and subsequent motivation level, will be unable, due to the rating ceiling, to earn an improved future performance rating, even if the underlying performance improves. These employees may then focus less attention on PFP, due to the impossibility of increasing their performance rating and the subsequent reward tied to that rating. This indicates that, because performance ratings typically have a maximum score, merit and bonus pay may be less strongly related to future performance for those receiving high performance ratings.

Hypothesis 7a. When performance is high, the merit pay-future performance relationship will be weaker.

Hypothesis 7b. When performance is high, the bonus pay-future performance relationship will be weaker.

Because the high performers in the preceding hypotheses will also be the most likely recipients of high merit and bonus pay, an alternative test of the performance rating ceiling effect can be constructed with nonlinear predictions. That is, PFP effects should be weaker when job performance, and thus (at least on average) PFP, is high. Such an alternative approach is important because it may identify nonlinearity as one explanation for weak effects in, and mixed support for, previously reported relationships between PFP and future employee performance.

Hypothesis 7c: A curvilinear relationship exists between merit pay and future performance, such that the positive effect will be attenuated at high levels of merit pay.

Hypothesis 7d: A curvilinear relationship exists between bonus pay and future performance, such that the positive effect will be attenuated at high levels of bonus pay.

***Employee tenure*.** We described earlier the general tendency for historical employment outcomes that yield optimism about future outcomes to lead employees to attend less to a single, current outcome (Brockner & Wiesenfeld, 1996). That is, short-term outcomes warrant less attention when there is evidence that future long-term outcomes will be positive. Low tenured employees, however, have no such historical employment outcome evidence to fall back on (and thus no resultant sense of optimism regarding future long-term outcomes). Consequently, they should be particularly likely to attend to the most recent PFP outcome; and because attention corresponds to influence (Brockner & Wiesenfeld, 1996; Trevor & Wazeter, 2006), current PFP effects on effort and future performance should then be stronger for newer employees.

Hypothesis 8a. When tenure is low, the merit pay-future performance relationship will be stronger.

Hypothesis 8b. When tenure is low, the bonus pay-future performance relationship will be stronger.

METHOD

Sample

The data are from a large United States-based insurance company. The company made available HR data on all employees who were not paid on commission and were positioned below the director level for the time period between January 1, 2001 and December 31, 2006. After removing observations that did not have at least three consecutive years of performance data, the final count consisted of 14,443 employees from 651 different departments located in 599 offices located throughout the United States. Employees ranged in age from 19 to 74 with a mean of 42 years, averaged 12 years of tenure with the organization (minimum 2 years and maximum 53 years), worked in 934 specific job classifications, and represented the 17 different grade levels from entry level positions through senior vice presidents (just below director level). About three fourths of the employees were female, and the sample was closely split between exempt and non-exempt employees. Employees earned, on average, about $49,000 per year.[1]

Measures

Merit pay. We calculated merit pay as the raw dollar change in salary from one year to the next. The company allocates merit pay by providing the manager with a budgeted merit pay guideline for each employee. These guidelines are based on a calculation that includes the employee's current pay, pay relative to the external market, and performance. Managers are then given some discretion to set employee merit pay within plus or minus 15% of the budgeted values, but must seek special permission to exceed these parameters, which, according to conversations with senior compensation executives at the company, rarely occurs.

[1] We chose not to adjust the dollar values for inflation, which would effectively have replaced "no" merit increase with a pay cut. Further, inflation was low during the study window and adjusting for inflation yields no material differences in our results, but complicates their interpretation.

Bonus pay. Bonus pay is the raw, non-wage dollar amount paid to employees as a lump sum reward for individual performance during the previous period. The firm allocates bonus pay based on an employee's salary, pay grade, and performance, and all employees are eligible for bonus pay. An employee's strategic business unit's profit and growth targets can also affect the size of the bonus (if any). Managers also have some discretion to adjust bonus pay within plus or minus 10% of the budgeted values, but generally allocate the precise budgeted value.

Merit trend. Merit trend is the slope of the line of best fit that results from regressing (separately for each employee) observation-year merit pay on the number of consecutive years that an employee was in the sample prior to and including the observation year. For instance, for an employee in the sample from 2001 to 2003, the year 2003 merit trend value is the slope of the regression line fitting three data points: (year one in sample, 2001 merit pay), (year two in sample, 2002 merit pay), and (year three in sample, 2003 merit pay). This is similar to Sturman and Trevor's (2001) performance trend measure.

Bonus trend. Bonus trend was created in the exact same manner as merit trend, but using bonus pay, instead of merit pay, in the calculation.

Merit average. Merit average is the mean merit pay over the consecutive previous and current observations for that employee. For example, an employee in the sample from 2001 to 2003, the year 2003 merit average would be the average of merit pay for the years 2001-2003.

Bonus average. Bonus average was created in the exact same manner as merit average, but using bonus pay in the calculation instead of merit pay.

Merit variability. Merit variability is the merit pay coefficient of variation over the full range of observed data prior to and including the observation year. Thus, we created this measure by dividing the employee's standard deviation of merit pay over the relevant years by the

employee's mean of merit pay over the same timeframe.

Bonus variability. Bonus variability was created in the exact same manner as merit variability, but using bonus pay, instead of merit pay in the calculation.

Performance. We used annual employee performance extracted from company data. Performance scores, which are generated by an employee's immediate supervisor, vary from 75-125. Supervisors are first required to classify each employee into one of five performance categories based on three achievement ratings (i.e., degree of achievement, degree of importance of the achievement, and degree of difficulty of the achievement) and four behavior ratings(i.e., daily role behavior, skills, effectiveness, and consistency). Managers are specifically trained on the appropriate techniques for conducting performance ratings, and employee merit and bonus allocations are tied directly to these ratings.

The mean future performance score across employees was 102.20. The distribution of employee ratings was a follows: 75-84 (i.e., lowest performance) – 1%; 85-94 – 15%; 95-105 – 68%; 106-115 – 15%; and 116-125 (i.e., highest performance) – 1%. To evaluate the reliability of supervisor evaluations, we first estimated the mean inter-year performance evaluation correlation (.53). Entering the employee average number of performance ratings (M = 4.18) into the Spearman-Brown prediction formula led to a predicted reliability of current performance ratings of .87.

We used two different performance measures. *Future performance*, which is the dependent variable in all equations, is an employee's performance rating in year t+1 (i.e., the year following the year in which our independent variables were measured). *Average performance* is the mean employee performance rating across all periods up through and including year t. We used average performance as the key control variable in all future

performance predictions. Without such a control, any PFP effects could be interpreted as merely indicating that better performers tend to both receive PFP and perform well in the future.

Covariates. We included several covariates that might be expected to influence both PFP amount and employee performance. *Average performance* was included to control for past performance, as it is likely to be a strong predictor of PFP amounts and future performance. We used dummy variables for *male* (1 = male) to account for possible gender differences in PFP and performance. We also included employee *tenure*, operationalized as years with the organization, because tenure can be related to performance (Schmidt & Hunter, 1998) and to PFP amount. *Age*, measured in years, can also predict performance. Additionally, organizations can manage (and pay) exempt and non-exempt employees differently (Gerhart & Trevor, 1996; Lepak & Snell, 1999), and the employee distinction may also be associated with different levels of performance evaluation; therefore we created an *exempt* control variable by coding exempt workers as "1" and non-exempt workers as "0." We also controlled for average *promotions*, which can lead to pay changes (Trevor, Gerhart, & Boudreau, 1997) and performance changes. We also controlled for *salary* to account for the effects of positional importance.

Analyses

We analyzed our pooled cross-sectional data by regressing future performance from year t+1 on the independent variables from year t. Because a Hausman test ($X^2 = 13.03$; $d.f. = 8$; $p < .0001$) suggested the presence of unobserved heterogeneity, we used fixed-effects estimation for our regression analyses (Greene, 2003; Halaby, 2004; Hausman, 1978). We clustered the fixed-effects around supervisor (4,080) in order to partial out any supervisor effects that might emerge because supervisors are responsible both for assigning year t merit and bonus pay amounts and for rating future performance in year t+1. All variables, with the exception of male and exempt,

were standardized.

RESULTS

Table 1 presents descriptive statistics for the variables in their natural metrics to facilitate interpretation. Table 2 presents the correlations of the variables of interest. It is worth noting that while performance over time is highly correlated, substantial variance in future performance remains after accounting for past performance. For instance, while average performance (the performance control in our models) correlates with future performance at .49, it still explains less than one quarter of the variance in future performance (i.e., $r^2 = .24$). It is also notable that male and salary are highly correlated ($r = .42$). This reflects the company's staffing of entry-level jobs with a high percentage of women. As expected, there is also a high correlation between exempt and salary ($r = .75$), and among salary, merit, and bonus pay variables. Although high correlations among independent variables can lead to multicollinearity concerns, all variables used in the equations returned a value on the variance inflation factor (VIF) test of less than three, at which point multicollinearity is not believed to be a problem (Neter, Wasserman, & Kutner, 1985). Additionally, removing variables to reduce collinearity did not substantively affect our results.

Insert Tables 1 and 2 about here

Short-term and Long-term Main Effects of PFP

Table 3 provides multivariate tests of short-term PFP effects on future performance. The Model 1 baseline reveals that average performance, tenure, male, age, and salary are statistically significant predictors of future employee performance. Consistent with our correlations, average

performance appears to have the largest effect.

In support of Hypothesis 1, Model 2 reveals that the coefficient for merit pay is positive and statistically significant ($p < .001$) The .12 merit pay coefficient indicates that a one standard deviation increase in merit pay ($2,461, or about 5% of mean salary) is associated with a .12 standard deviation increase in future performance, or a .64 performance rating increase (.12 times the 5.32 performance standard deviation). We also find support for Hypothesis 2, as the .37 bonus pay coefficient in Model 3 is statistically significant ($p < .001$). Thus, increasing bonus pay by $3,595 (one standard deviation) is associated with a future performance rating improvement of 1.97 points. Support persists for Hypotheses 1 and 2 when merit and bonus pay are modeled together (Model 4). Additionally, the coefficients for merit and bonus pay are statistically different from each other ($p < .01$), suggesting that bonus has a more potent effect on future performance. Specifically, Models 2 through 4 indicate that merit pay would need to be increased by approximately three to five standard deviations to yield the same performance payoff as a one standard deviation increase in bonus pay.[2]

Insert Table 3 about here

Table 4 displays the results of future performance regressed on long-term PFP. The positive merit trend (Model 1) and bonus trend (Model 2) effects on future performance are both statistically significant ($p < .001$), supporting Hypotheses 3a and 3b. A one standard deviation

[2] To aid comparability we report *R*-square values using both the *within* measure based on STATA's *xtreg, fe* function and the *total* measure based on the dummy variables approach using STATA's *areg* function. These result in a different reported model *R*-square, but yield identical parameter estimates, etc. (Woodridge, 2002, 2009), and the overall pattern of hierarchical analysis results is the same (Nyberg, Fulmer, Gerhart, & Carpenter, 2010).

increase in merit trend (bonus trend) results in a .07 (.14) standard deviation increase in performance, or a .37 (.74) performance rating increase. We included merit trend and bonus trend together in Model 3, and the results remain consistent. Hypotheses 3c and 3d also were supported, as both merit average (Model 4) and bonus average (Model 5) were positive, statistically significant predictors of future performance ($p < .001$). Increasing merit average (bonus average) one standard deviation results in a .11 (.18) standard deviation increase in future performance, which is a .58 (.96) performance rating increase. Notably, the results remain statistically significant in Model 6 when both variables are included, although the magnitude of the merit average effect drops considerably. Additionally, the negative merit variability (Model 7) and bonus variability (Model 8) relationships with future performance are statistically significant ($p < .001$), as predicted in Hypotheses 4a and 4b. In terms of effect sizes, a one standard deviation increase in merit variability (bonus variability) predicts a decrease in future performance ratings of .06 (.20) standard deviations, which represents .32 (1.06) rating points. Model 9, which includes both merit and bonus variability, produces similar results.

To further probe this apparently consistent support for the third and fourth sets of hypotheses, Table 4's Models 10, 11, and 12 explore the extent to which the PFP variables may be proxies for each other. In Model 10, which includes long-term merit measures, the merit pay coefficient is reduced 33% from the coefficient in the merit pay only approach (Table 3, Model 2); additionally, Model 10's merit trend, and average coefficients' magnitudes are reduced 71% and 64% respectively, from models without merit pay (Table 4, Models 1 and 4), although they remain statistically significant. Similarly, in Model 11, which includes long-term bonus measures, the coefficient for bonus pay is reduced 27% from the coefficient in the bonus pay only approach (Table 3, Model 3); Model 11's bonus trend, average, and variability coefficients

are reduced 71%, 67%, and 35%, respectively, from models without bonus pay (Table 4, Models 2, 5, and 8). Further, Model 12 shows that when all short- and long-term measures of PFP are in the same (possibly over-specified) model, the individual coefficients remain statistically significant, suggesting unique effects of each component. Finally, Model's 3, 6, and 9 reveal bonus effects on future performance to be statistically greater than merit effects across trend, average, and variability operationalizations of PFP ($p < .001$), while Models 11 and 12 indicate that short-term bonus pay is the most potent of the PFP manifestations.

Insert Table 4 about here

Situational Determinants of the Attention Directed to PFP

Next, we evaluate the efficacy of our proposed general attention contingency (see Figure 1) by examining whether situational determinants of the attention directed to PFP moderate PFP effects. Table 5's merit pay by merit trend (Model 1) and bonus pay by bonus trend (Model 2) interactions are both negative and statistically significant ($p < .001$), indicating in each case that short-term PFP effects were greater when PFP trend was low (and, presumably, subsequent attention paid to PFP amount was high). This support for Hypothesis 5a is depicted in Figure 2. In the top graph, a one standard deviation increase in merit pay is associated with a .11 standard deviation increase in future performance when merit trend is high (one standard deviation above the mean), but predicts a .21 standard deviation increase, which is 91% greater, when merit trend is low (one standard deviation below the mean). Similarly, in the bottom graph, a one standard deviation increase in bonus pay is associated with a .30 standard deviation increase in future performance when bonus trend is high and a .38 increase when bonus trend is low, which is a

27% stronger effect. Notably, the results remain statistically significant when modeling both interactions simultaneously (Model 3).

Paralleling these results, and consistent with hypothesis 5b, the merit pay by merit average (Model 4) and bonus pay by bonus average (Model 5) interactions in Table 5 are negative and statistically significant ($p < .001$). In each case the short-term PFP effects were greater when PFP average was low, which is when we speculated that attention paid to PFP amount would be enhanced. The relationships are presented in Figure 3. In the top graph, a one standard deviation increase in merit pay is associated with a .10 standard deviation increase in future performance when merit average is one standard deviation above the mean, but predicts a .16 standard deviation increase, which is 60% greater, when merit average is one standard deviation below the mean. Similarly, in the bottom graph, a one standard deviation increase in bonus pay is associated with a .33 increase in future performance when bonus average is high and a .51 increase, which is 55% greater, when bonus average is low. Once again, the results remain statistically significant when both interactions are included in the same model (Model 6).

We contended in Hypothesis 5c that high PFP variability over time would result in more attention to, and thus influence of, the current PFP amount. This hypothesis was not supported for the merit pay operationalization of PFP, as the coefficient is in the opposite direction from our prediction (Table 5, Model 7). For the bonus pay operationalization (Model 8), however, the effect emerged as predicted. Depicted in the bottom of Figure 4, the analyses reveal that a one standard deviation increase in bonus pay is associated with a .30 standard deviation increase in future performance when bonus variability is low and a .40 increase when bonus trend is low, which is a 33% stronger effect.

In the final test of our framework in which situational determinants drive the attention

paid to PFP, and PFP's subsequent influence, we examined the potential merit pay by bonus pay interaction. Model 1 in Table 6 provides support for Hypothesis 6, as the negative interaction term indicates that the positive bonus pay effect on future performance is stronger when merit pay is low. This relationship is shown in Figure 5, as a one standard deviation increase in bonus pay is associated with a .32 increase in future performance when merit pay is high and a .48 increase when merit pay is low, which is a 50% stronger effect (alternatively, merit pay has a .05 standard deviation effect at high bonus pay, but the effect increases to .21 at low bonus pay).

Insert Table 5 and Figures 2, 3, 4, and 5 about here

Employee Determinants of the Attention Directed to PFP

Our Figure 1 framework also stipulates that two employee characteristics, job performance and employee tenure, should affect the attention paid to PFP amount, thereby moderating the PFP effect on future performance. Models 2 and 3 in Table 6 provide tests of Hypotheses 7a and 7b, which predict merit and bonus pay interactions with employee performance. As expected, merit and bonus pay effects were statistically greater for low performers. Figure 6 displays these interactions. In the top graph, a one standard deviation increase in merit pay is associated with a .08 standard deviation increase in future performance when performance is high (one standard deviation above the mean), but predicts a .20 standard deviation increase, which is 150% greater, when performance is low (one standard deviation below the mean). Similarly, in the bottom graph, a one standard deviation increase in bonus pay is associated with a .35 standard deviation increase in future performance when performance is high and a .49 increase when performance is low, which is a 40% stronger effect. We also find

support for Hypotheses 7c and 7d, which provide alternative tests (i.e., nonlinearity) of our rationale. The coefficients for merit and bonus pay squared (Table 6's Models 4 and 5) are negative and statistically significant ($p < .001$), supporting our hypotheses that the positive bonus pay and merit pay effects on future performance are attenuated at high levels of those PFP operationalizations. Figure 7 displays these curvilinear relationships.

Hypotheses 8a and 8b predict that PFP is differentially related to future performance across employee tenure. Our results did not support Hypothesis 8a, which predicted a merit pay by tenure interaction (Table 6's Model 6). However, the negative bonus pay by tenure interaction coefficient in Model 7 is statistically significant ($p < .001$), supporting Hypothesis 8b. Specifically, as shown in Figure 8, a one standard deviation increase in bonus pay corresponds to a .35 standard deviation increase in future performance when employee tenure is high and a .45 increase when employee tenure is low, which is a 29% stronger effect.

Insert Table 6 and Figures, 6, 7, and 8 about here

DISCUSSION

The primary objective of the current study was to theorize about and examine the relationship between PFP and future employee performance over time. As such, this study explored two under-theorized and little-researched contextual aspects in the PFP literature (i.e., the influence of PFP measurement and attention focused on PFP) to potentially clarify why, how, and when PFP influences future performance over time. To this end, we first expanded PFP's operationalization to include multiple PFP types and timeframes arguing that both short- and long-term measures of PFP influence the key effort triggers from established PFP-relevant

theories (i.e., instrumentality, equity, and met obligation). Second, we proposed that the level of attention employees' focus on PFP underlies these key effort triggers and explains why employees respond more (or less) to PFP in certain situations. We examined situational and employee characteristics that potentially contribute to employees' attention to PFP.

The present findings offer support for PFP efficacy. Our findings demonstrate that merit and bonus pay, the two most commonly used PFP types, are positively associated with future employee performance when considering both short-term and long-term measures of each. Additionally, our results show that there are compensatory effects between these two components; that is, when one (e.g., bonus pay) is low, the other (e.g., merit pay) receives more employee attention, increasing its effect. We also found that employee performance and tenure moderated the effects of current PFP amounts, which further supports our confidence in the attention contingency proposed in this study. However, unexpectedly, our results also indicated that bonus pay may be more influential than merit pay. We speculate that this distinction may be due to the lump sum effect of bonus pay.

The results also support the notion that the effects of PFP evolve over time to influence future employee performance. As predicted, both PFP trend and average were statistically significant and positively related to future performance. In contrast, PFP variability was negative and statistically significantly related to future performance. These long-term measures also moderated the current PFP-future performance relationship. Together, these indicate that employees' PFP experience influences their expectations of future rewards.

However, when PFP experience is limited, there is a greater premium on current PFP. We described earlier the general tendency for historical employment outcomes that yield optimism about future outcomes to lead employees to attend less to a single, current outcome (Brockner &

Wiesenfeld, 1996). And because low tenured employees have less such historical employment outcome evidence (and thus no resultant sense of optimism regarding long-run outcomes), we argued that they should be particularly likely to attend to the most recent PFP outcome. Given that attention corresponds to influence (Brockner & Wiesenfeld, 1996; Trevor & Wazeter, 2006), we predicted that PFP effects on effort and future performance should then be stronger for newer employees. We found evidence for this interaction when PFP was operationalized as bonus pay (but not when PFP was represented by merit pay).

Interestingly, this prediction becomes less clear to the extent that historical PFP outcomes appear to long-term employees to be unfairly determined or randomly generated, which should heighten their attention paid to short term outcomes. That is, because we found reduced PFP effects when PFP trend and PFP average were high (supporting Hypotheses 5a and 5b), it could be argued that expecting low tenured employees to reveal larger PFP effects only is reasonable when PFP trend and average are high. We note, however, that employees that deem their merit increases and bonuses to be dissatisfying or inequitable are more likely to leave the organization (e.g., Tekleab, Bartol, & Liu, 2005), thereby gradually creating a highly tenured cohort that may be somewhat more optimistic about future PFP outcomes (and thus less attentive to short term PFP experience) than their low tenured colleagues. Thus, on balance, we believe that low tenured employees should still be more attentive to, and thus influenced by, the most recent PFP amount.

Implications for Theory

The results of the current study address how and why PFP influences future employee performance and identifies boundary conditions regarding organizational pay practices. Our conclusions are consistent with the idea that employee attention to PFP, which is implicit but largely unexamined in PFP-relevant theories, is an important factor for directing employees'

effort and affecting their future performance. We argued that different levels of employee attention to PFP would alter the effects of effort triggers from three common PFP-relevant theories (i.e., instrumentality, equity, and met obligation) in terms of how PFP relates to future employee performance. Our findings are consistent with this attention to PFP contingency proposition, which is also consistent with recognition that employees do not always have time or all of the key input information to determine the "appropriate" effort to exert (Schwab, Olian-Gottlieb, & Heneman, 1979). Thus, introducing the concept of attention focused on effort triggers presents a novel mechanism for understanding how, when and why these theories function. For example, considering the attention focused on effort triggers provides insight into why there have been conflicting empirical findings in prior PFP research, and helps to explain inconsistencies in motivation related research such as why Van Eerde & Thierry's (1996) meta-analytic findings found weaker than expected motivational effects (based on expectancy theory predictions) across studies.

Our findings also expand our knowledge about contextual boundaries concerning multiple employment outcomes by showing that employees react to more than a single PFP component. This addresses a research gap concerning the interdependencies of PFP plans. The results are consistent with previous research regarding trade-offs among multiple distributive justice outcomes (i.e., Brockner & Wiesenfeld, 1996; Trevor & Wazetor, 2006), and builds on Trevor and Wazeter's findings that pay condition outcome interactions are meaningful by showing that this is similarly true for PFP component interactions.

Through examining employee characteristics that influence the relationship between PFP and future performance, we also present an early empirical examination of factors that may limit the efficacy of PFP through showing potential unintended performance consequences of either

ceilings on performance ratings or pay. The interaction between average performance and PFP suggests that at high performance levels PFP may be less influential due to limits on the ability to increase performance. This could be because once an employee has achieved very high performance scores it becomes exceedingly difficult to increase those scores (impossible if the person achieved the highest score). Another similar limiting factor is shown in the tests of Hypotheses 8c and 8d where we find that there is a curvilinear relationship between PFP and future performance. This finding is also consistent with the idea that when high levels of pay have been achieved it becomes increasingly difficult to improve upon that pay (e.g., pay bands that place upper limits on pay for employees within specific grade levels). Together, these suggest that employees may focus less attention on PFP when their performance (or pay) has already been maximized (or is asymptotically nearing a maximum where marginal increases in performance (pay) are extremely difficult to achieve, and provide only minimal returns). Alternatively, it may not be solely a question of employee attention and may also be partially due to artifacts of the performance evaluation system where the highest performing and highest paid employees simply cannot score better or be paid more within the confines of the PFP system.

These PFP limitations may be particularly troubling for managing higher performers, who may be disproportionately valuable to the organization's success (Sturman, Trevor, Boudreau, & Gerhart, 2003), because PFP is thought to be more desirable for higher- than lower-performers (Cadsby, Fei, & Tapon, 2007; Gerhart et al., 2009; Nyberg, 2010; Trank, Rynes, & Bretz, 2002). In systems with strong PFP, higher-performing employees receive more pay and thus should be more satisfied with pay (Schaubroeck, et al., 2008; Scott, Shaw, & Duffy, 2008; Shaw & Gupta, 2007; Subramony, Krause, Norton, & Burns, 2008; Williams & Livingstone, 1994). However, higher performers are likely to continually expect and demand greater pay to

continue their efforts, and our results show that there can be (perhaps unintended) diminishing returns for the higher performing (and or) higher earning employees. These results may potentially help explain why past research has found that higher performers are often more likely to voluntarily leave than average performers (e.g., Nyberg, 2010; Salamin & Hom, 2005; Trevor et al., 1997).

Our results also suggest theoretical challenges to traditional pay, psychological contract, and transactional economic paradigms. In these paradigms, pay is generally presumed to be a purely transactional event. However, as the current results regarding long-term PFP measures show, pay relationships may evolve over time. If so, this could impact how we think about pay, particularly in terms of psychological contract relationships, because it may be that long-term pay takes on the attributes of relational rather than transactional events. This suggests that theorists may want to consider the potential relational implications of pay, particularly when considered over time, which may differ from the traditional repercussions of pay associated with purely economic transactions.

In summary, we demonstrated the value of considering context in the PFP-future employee performance relationship. This perspective provides a unique opportunity to address discrepancies in previous merit pay research. While our results support the position that merit pay is positively related to future performance (e.g., Gerhart et al., 2009), they also shed light on why many may have struggled to find these results. This is, in part, because the merit pay impact appears to be related to the role that bonus pay plays in influencing future performance as well as how merit pay has been awarded over time. Thus, studies that do not take these factors into account may find biased results regarding the influence of merit pay.

Implications for Practice, Limitations and Future Research

In addition to contributing to theory, our work also has practical implications. Managers want to entice maximum employee performance, and PFP practices are a primary tool used to entice this goal. Our results provide evidence that this practice is associated with future performance, but has important boundary conditions resulting from attention focused on effort triggers. Future performance also appears more favorably associated with bonus than with merit pay. As an example of the practical manifestations of this difference, we use a cost-benefit analysis. A reasonable assumption in such an analysis is that a one standard deviation increase in employee performance is worth approximately 60% of an employee's salary to the company (Sturman, et al., 2003). In our sample, this suggests that increasing performance one standard deviation for an average employee is worth approximately $29,360 to the company. Based on our results (Table 3, Models 2 and 3), mean employee performance will increase about 2% (or .37 standard deviations) with a $3,595 (one standard deviation) increase in bonus pay. This equals a $10,863 benefit, or a return on investment of about 202%. If merit pay is the same dollar value, the result is about a 1% increase in mean performance (.18 standard deviations), equal to a $5,285 benefit at a cost of $3,595, or about a 47% return on investment.

One potential explanation of this outcome is the lump sum effect of bonus payments. It may be that employees become more inured to salary increases spread across pay periods, or possibly that employees perceive these two components differently in terms of organizational obligations; employees may view merit pay as a common obligation that should be fulfilled, whereas, bonus pay may be viewed more as a reward that employees have to re-earn each year. Additionally, the one-time bonus may give employees a more vivid goal to strive toward. Although an equivalent dollar value ought to be valued more by an employee when delivered via merit pay due to the potential for compounding the increase in future periods, our results suggest

that employees may not respond as expected. One limitation is that our results may be partially driven by the size of PFP amounts. That is, if merit pay were larger, its effects might be larger. However, if our results generalize, then bonus pay should be the preferred organizational incentive, but future research on this topic is needed.

Contrary to conventional wisdom and traditional economic models of rational self-interest, our results suggest that employees (in our sample) may prefer and be more motivated to improve performance when bonus pay is the carrot. Further, by awarding more bonus pay relative to merit pay, firms would have more flexibility in managing cash flow (Gerhart & Milkovich, 1990). If this is true, by moving to higher percentages of bonus pay relative to merit pay, companies could increase productivity (through better employee performance), while generating greater cash-flow flexibility.

The current study also presents a glimpse into a gap in our knowledge about the role that PFP plays in influencing the majority of employees who, particularly compared with executives, represent an understudied group of workers. Our results show that PFP is associated with future employee performance even for lower-ranking employees. Thus, to maximize employee performance, managers should consider using PFP for jobs throughout the organization.

It is also possible that the performance or pay ceiling effects described earlier limit the generalizability of our interaction interpretations. That is, if it is much more difficult for an employee to increase performance ratings after already receiving previously high performance ratings, then our results may capture a systemic influence on the PFP-future performance relationship. Future research examining the relationship between performance ratings or pay growth and actual performance could penetrate an important boundary condition surrounding pay practices and subsequent employee responses. To help account for spurious pay and future

performance effects, we controlled for average performance. We used average performance because it is more reliable than a single year measure, and without such a control, PFP effects could be interpreted as better performers both receive PFP and perform well in the future.

It is also notable that our data are derived from a single firm, and to the degree that either the firm or the industry is a poor representative, our results may not generalize to other firms. For instance, if the firm evaluated here is unusually competent in implementing PFP policies and communicating these polices to employees, then the results found using this firm may be higher than we would expect in other firms. This general limitation of using only a single firm is somewhat mitigated by the large number of employees, offices, jobs, and locations.

Conclusion

Our results show that two commonly used PFP components that have received equivocal academic support, as well as their cumulative effects over time are linked to future employee performance. Additionally, interdependencies exist among pay components, bonus pay may be more influential than previously discussed, and potential PFP ceiling effects should be considered. Finally, our findings provide evidence that PFP efficacy is influenced by employee attention focused on the effort triggers found in the rationale in established PFP-relevant theories and suggests why employees react to reward stimuli based on a composite of pay information.

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TABLE 1

Summary Statistics[a]

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Future performance	102.20	102.00	5.32	75.00	125.00
Average performance	102.37	102.00	4.50	80.00	120.75
Tenure	11.83	8.00	8.84	2.00	53.00
Male	0.26	0.00	0.44	0.00	1.00
Age	41.98	41.83	10.23	19.63	74.45
Exempt	0.49	0.00	0.50	0.00	1.00
Promotion	0.10	0.00	0.17	0.00	1.00
Salary	48,934.05	44,350.00	19,554.08	16,600.00	127,600.00
Merit pay	2,412.26	1,700.00	2,461.34	0.00	23,900.00
Merit trend	-171.00	-195.00	1603.79	-12,400.00	17,600.00
Merit average	1,268.50	860.00	1,288.11	0.00	14,200.00
Merit variability	0.53	0.46	0.35	0.00	2.00
Bonus pay	3,371.73	2,334.81	3,595.26	0.00	32,360.56
Bonus trend	-43.77	55.04	1,302.49	-18,211.25	20,872.63
Bonus average	1,458.51	1,046.38	1,476.78	2.10	22,321.96
Bonus variability	0.38	0.32	0.29	0.00	2.00

[a] N = 14,443. All values are in their natural metrics (unstandardized) for ease of interpretation.

TABLE 2

Correlations[ab]

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Future performance	--															
2 Average performance	.49	--														
3 Tenure	.03	.13	--													
4 Male	.00	.02	.00	--												
5 Age	-.07	.00	.47	-.05	--											
6 Exempt	.10	.18	.06	.31	-.03	--										
7 Promotion	.05	.07	-.24	.04	-.30	.19	--									
8 Salary	.18	.33	.21	.42	.08	.75	.05	--								
9 Merit pay	.20	.19	-.17	.18	-.26	.35	.24	.32	--							
10 Merit trend	.05	-.08	-.05	.01	-.05	-.04	-.18	-.11	.55	--						
11 Merit average	.15	.14	-.54	.16	-.43	.30	.52	.21	.67	.15	--					
12 Merit variability	-.09	-.08	.05	.04	-.01	.02	.07	.04	.00	.02	.01	--				
13 Bonus pay	.29	.34	.16	.30	.05	.49	.04	.78	.33	-.04	.20	-.02	--			
14 Bonus trend	.13	-.02	-.01	-.04	-.02	.00	.08	.00	.09	.02	.09	.01	.35	--		
15 Bonus average	.21	.25	-.36	.27	-.17	.43	.18	.57	.41	.02	.63	-.04	.62	.09	--	
16 Bonus variability	-.25	-.28	-.06	-.01	-.03	-.10	.00	-.12	-.09	-.01	-.07	.16	-.27	-.14	-.21	--

[a] N = 14,443. Based on the last observation per employee.

[b] Correlations with absolute values greater than .01 are statistically significant at $p \leq .05$.

TABLE 3

Fixed Effects Regression of Future Performance on Short-term PFP[a]

	1	2	3	4
Constant	.06***	.09***	-.13***	-.10***
	(.01)	(.01)	(.01)	(.01)
Tenure	-.02**	-.01	-.01	-.00
	(.01)	(.01)	(.01)	(.01)
Male	-.08***	-.09***	-.08***	-.09***
	(.01)	(.01)	(.01)	(.01)
Age	-.08***	-.07***	-.07***	-.06***
	(.01)	(.01)	(.01)	(.01)
Exempt	-.04	-.09***	.04	.01
	(.02)	(.02)	(.02)	(.02)
Promotion	-.01	-.01*	-.01*	-.01**
	(.00)	(.00)	(.00)	(.00)
Salary	.06***	.06***	-.29***	-.28***
	(.01)	(.01)	(.02)	(.02)
Average performance	.48***	.47***	.45***	.45***
	(.01)	(.01)	(.01)	(.01)
Merit pay		.12***		.07***
		(.01)		(.01)
Bonus pay			.37***	.35***
			(.01)	(.01)
F	1192***	1098***	1343***	1216***
Adjusted R^2(within)	.208	.216	.252	.256
Adjusted R^2(total)	.336	.343	.373	.376

[a] Standard errors are in parentheses; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$; N = 35,952; Variables were standardized prior to the analyses (with the exception of male and exempt).

TABLE 4

Fixed Effects Regressions of Future Performance on Long-term PFP[a]

	1	2	3	4	5	6	7	8	9	10	11	12
Constant	.07***	.06***	.06***	.06***	-.02	-.01	.06***	.02***	.02***	.08**	-.13***	-.10***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.02)	(.02)
Tenure	-.02*	-.02**	-.02**	.05***	.10***	.11***	-.02*	-.02**	-.02*	.02*	.03**	.04***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Male	-.09***	-.08***	-.08***	-.09***	-.07***	-.08***	-.08***	-.08***	-.08***	-.09***	-.08***	-.09***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Age	-.08***	-.08***	-.07***	-.08***	-.09***	-.09***	-.08***	-.09***	-.09***	-.07***	-.08***	-.07***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Exempt	-.05*	-.05*	-.07**	-.06*	-.01	-.02	-.05*	-.06**	-.07**	-.10***	.01	-.03
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Promotion	.01**	-.02***	.00	-.03***	-.01*	-.02***	-.00	-.00	.00	-.01	-.01*	-.01*
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.01)	(.00)	(.01)
Salary	.08***	.07***	.09***	.04**	-.07***	-.07***	.07***	.08***	.09***	.07***	-.23***	-.18***
	(.01)	(.01)	(.01)	(.01)	(.02)	(.02)	(.01)	(.01)	(.01)	(.01)	(.02)	(.02)
Average performance	.49***	.49***	.50***	.47***	.46***	.46***	.47***	.44***	.44***	.46***	.43***	.43***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(0.01)	(.01)	(.01)

Table continued

	1	2	3	4	5	6	7	8	9	10	11	12
Merit trend	.07***		.06***							.02**		.03***
	(.01)		(.00)							(.01)		(.01)
Bonus trend		.14***	.14***								.04***	.04***
		(.00)	(.00)								(.01)	(.01)
Merit average				.11***		.04***				.04***		.04**
				(.01)		(.01)				(.01)		(.01)
Bonus average					.18***	.16***					.06***	.03**
					(.01)	(.01)					(.01)	(.01)
Merit variability							-.06***		-.04***	-.06***		-.03***
							(.00)		(.00)	(.00)		(.00)
Bonus variability								-.20***	-.19***		-.13***	-.13***
								(.01)	(.01)		(.01)	(.01)
Merit pay										.08***		.04***
										(.01)		(.01)
Bonus pay											.27***	.25***
											(.01)	(.01)
F	1072***	1187***	1078***	1068***	1105***	984***	1063***	1159***	1038***	814***	1025***	769***
Adjusted R^2(within)	.212	.230	.234	.212	.217	.218	.211	.225	.227	.219	.261	.266
Adjusted R^2(total)	.340	.354	.358	.339	.344	.344	.339	.351	.352	.346	.381	.385

[a] Standard errors are in parentheses; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$; N = 35,952; Variables were standardized prior to the analyses (with the exception of male and exempt).

TABLE 5

Fixed Effects Regressions of Future Performance on PFP Interactions with Situational Determinants of Attention[a]

	1	2	3	4	5	6	7	8	9	10
Constant	.11***	-.11***	-.05***	.10***	-.14***	-.11***	.09***	-.12***	-.09***	-.07***
	(.01)	(.01)	(.02)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.02)
Tenure	-.01	-.01	-.01	.04***	.13***	.13***	-.00	-.01	.00	.10***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Male	-.08***	-.08***	-.08***	-.08***	-.08***	-.08***	-.09***	-.08***	-.09***	-.08***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Age	-.07***	-.07***	-.06***	-.06***	-.07***	-.07***	-.07***	-.07***	-.07***	-.07***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Exempt	-.09***	.04	-.01	-.10***	-.00	-.03	-.11***	.02	-.03	-.06**
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Promotion	-.01	-.01**	-.01*	-.03***	-.02***	-.02**	-.01*	-.01*	-.01**	-.01*
	(.00)	(.00)	(.00)	(.01)	(.00)	(.01)	(.00)	(.00)	(.00)	(.01)
Salary	.06***	-.26***	-.22***	.04**	-.41***	-.40***	.07***	-.23***	-.21***	-.28***
	(.01)	(.02)	(.02)	(.01)	(.02)	(.02)	(.01)	(.02)	(.01)	(.02)
Average performance	.47***	.46***	.46***	.46***	.43***	.43***	.46***	.43***	.42***	.42***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Merit pay	.16***		.11***	.13***		.08***	.13***		.09***	.10***
	(.01)		(.01)	(.01)		(.01)	(.01)		(.01)	(.01)
Merit trend	.05***		.05***							.04***
	(.01)		(.01)							(.01)
Merit pay	-.05***		-.04***							-.03***
X Merit trend	(.00)		(.00)							(.00)
Bonus pay		.34***	.30***		.42***	.40***		.35***	.32***	.33***
		(.01)	(.01)		(.01)	(.01)		(.01)	(.01)	(.01)
Bonus trend		.04***	.05***							.05***
		(.01)	(.01)							(.01)

Table continued

	1	2	3	4	5	6	7	8	9	10
Bonus pay		-.04***	-.05***							-.04***
X Bonus trend		(.00)	(.00)							(.00)
Merit average				.09***		-.02				-.01
				(.01)		(.01)				(.01)
Merit pay				-.03***		-.02***				.00
X Merit average				(.00)		(.00)				(.00)
Bonus average					.30***	.30***				.24***
					(.01)	(.01)				(.02)
Bonus pay					-.09***	-.09***				-.07***
X Bonus average					(.00)	(.00)				(.00)
Merit variability							-.06***		-.03***	-.02**
							(.01)		(.01)	(.01)
Merit pay							-.04***		-.03***	-.01
X Merit variability							(.01)		(.01)	(.01)
Bonus variability								-.12***	-.12***	-.09***
								(.01)	(.01)	(.01)
Bonus pay								.05***	.06***	.03***
X Bonus variability								(.01)	(.01)	(.01)
F	913***	1092***	881***	893***	1185***	924***	897***	1123***	885***	598***
Adjusted R^2(within)	.223	.255	.264	.219	.271	.274	.220	.261	.265	.283
Adjusted R^2(total)	.349	.376	.384	.346	.389	.391	.346	.380	.384	.399

[a] Standard errors are in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; N = 35,952; Variables were standardized prior to analyses (with the exception of male and exempt).

TABLE 6

Fixed Effects Regressions of Future Performance on PFP Interactions with Employee Determinants of Attention[a]

	1	2	3	4	5	6	7	8
Constant	-.08***	.10***	-.10***	.15***	-.06***	.09***	-.11***	-.09***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Tenure	.00	-.01	-.01	-.00	-.01*	-.00	-.00	.01
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Male	-.09***	-.09***	-.09***	-.08***	-.08***	-.09***	-.08***	-.09***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Age	-.06***	-.07***	-.07***	-.06***	-.07***	-.07***	-.07***	-.06***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Exempt	-.01	-.10***	.02	-.12***	-.07**	-.09***	.03	-.01
	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Promotion	-.01***	-.01*	-.01*	-.02*	-.01**	-.01*	-.01**	-.01***
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Salary	-.30***	.07***	-.29***	.06***	-.30***	.06***	-.29***	-.27***
	(.02)	(.01)	(.02)	(.01)	(.02)	(.01)	(.02)	(.02)
Average performance	.44***	.46***	.46***	.46***	.43***	.47***	.45***	.45***
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)

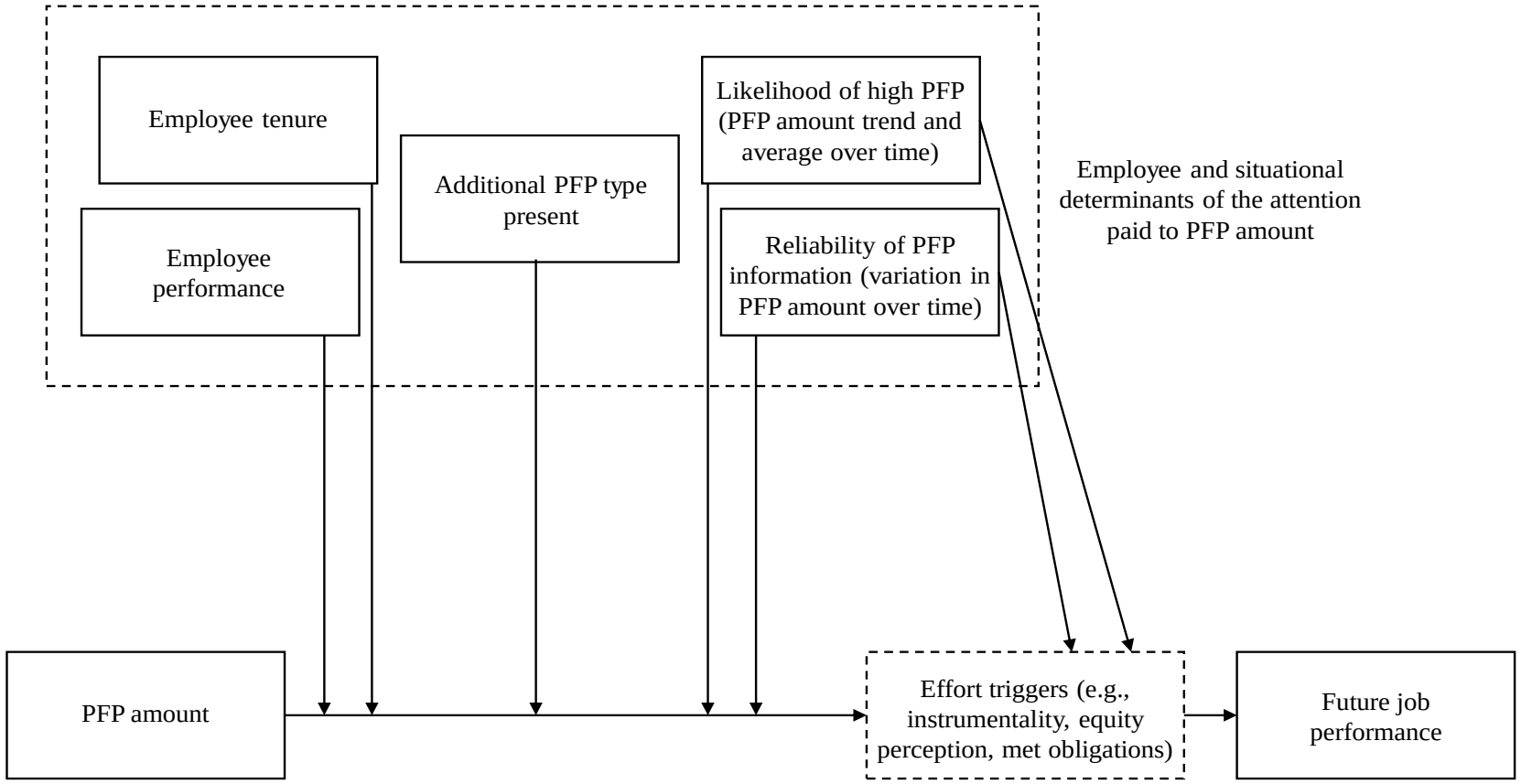
Table continued

	1	2	3	4	5	6	7	8
Merit pay	.13***	.14***		.25***		.12***		.07***
	(.01)	(.01)		(.01)		(.01)		(.01)
Bonus pay	.40***		.42***		.65***		.40***	.38***
	(.01)		(.01)		(.01)		(.01)	(.01)
Merit pay X Bonus pay	-.08***							
	(.00)							
Merit pay X Average performance		-.06***						
		(.01)						
Bonus pay X Average performance			-.07***					
			(.00)					
Merit pay squared				-.05***				
				(.00)				
Bonus pay squared					-.08***			
					(.00)			
Merit pay X Tenure						.01		.00
						(.01)		(.01)
Bonus pay X Tenure							-.05***	-.05***
							(.01)	(.01)
F	1142***	990***	1221***	1030***	1333***	977***	1204***	1001***
Adjusted R^2(within)	.264	.219	.256	.225	.274	.216	.254	.257
Adjusted R^2(total)	.383	.345	.377	.351	.391	.343	.375	.377

[a] Standard errors are in parentheses; *$p < .05$, **$p < .01$, ***$p < .001$; N= 35,952; Variables were standardized prior to the analyses (with the exception of male and exempt).

FIGURE 1

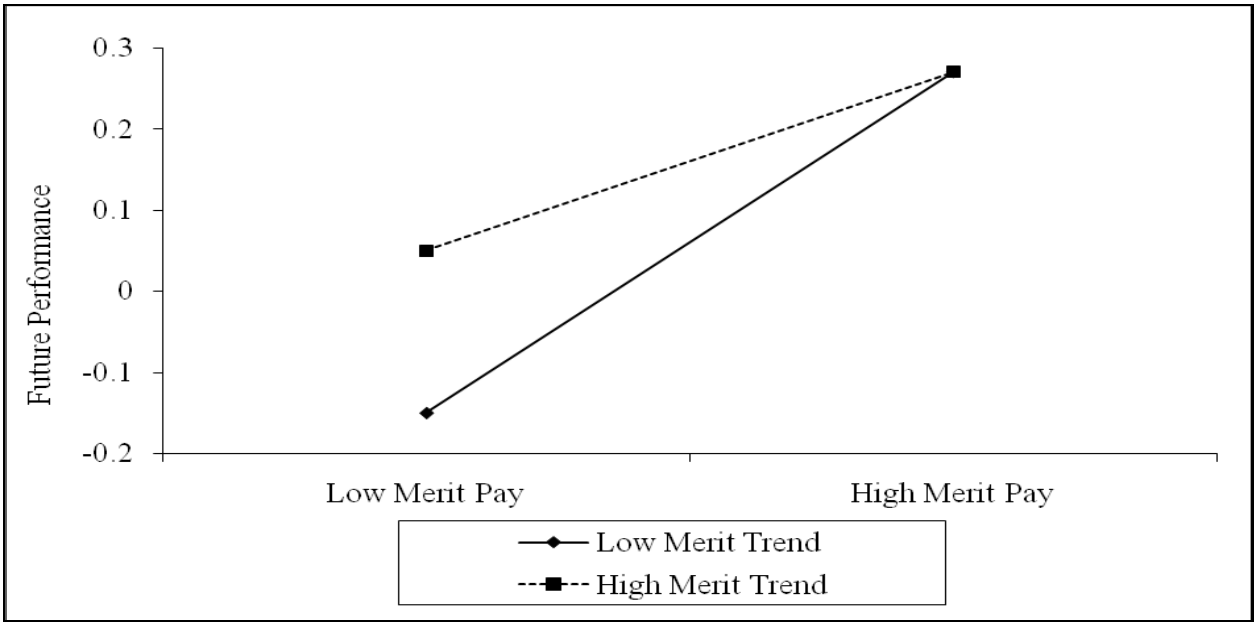
Contextual Factors Driving Attention to PFP Amount and Thereby Moderating PFP's Effect on Future Job Performance



Note: Instrumentality, equity perceptions, and met obligations are effort triggers in that higher levels should, all else equal, lead to higher performance, as stipulated in expectancy theory, equity theory, and psychological contract theory, respectively. These triggers are not measured here, but rather are commonly presumed explanations for PFP effects.

FIGURE 2

PFP Trend as a Moderator of PFP Effects on Future Performance (Hypothesis 5a)



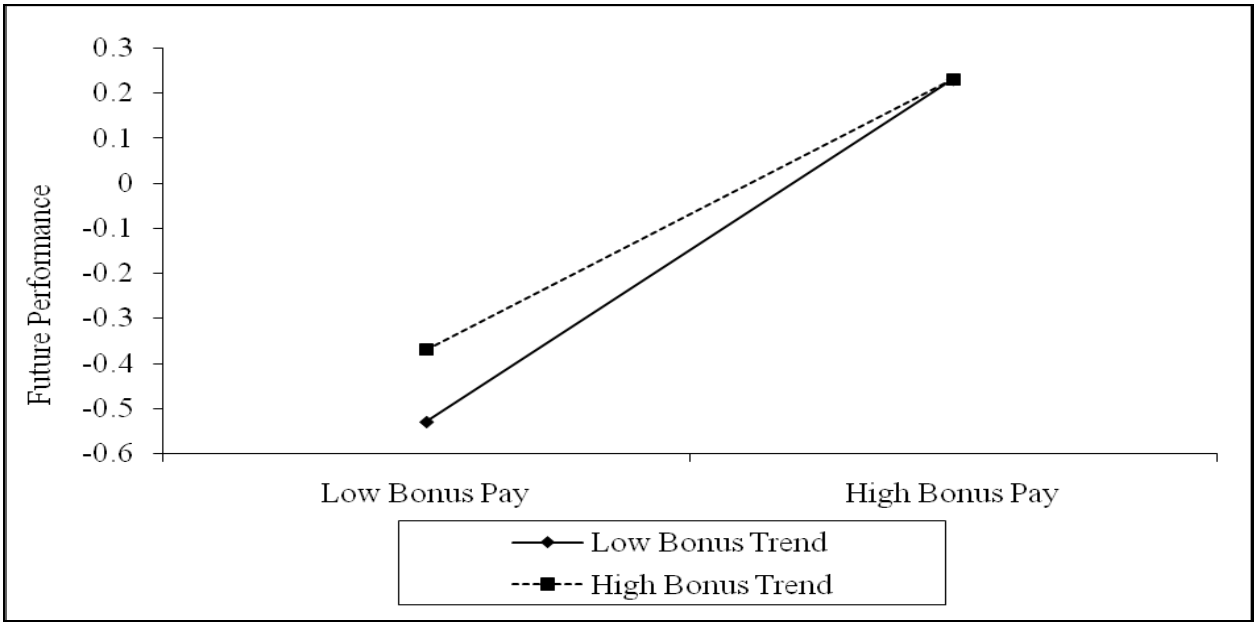
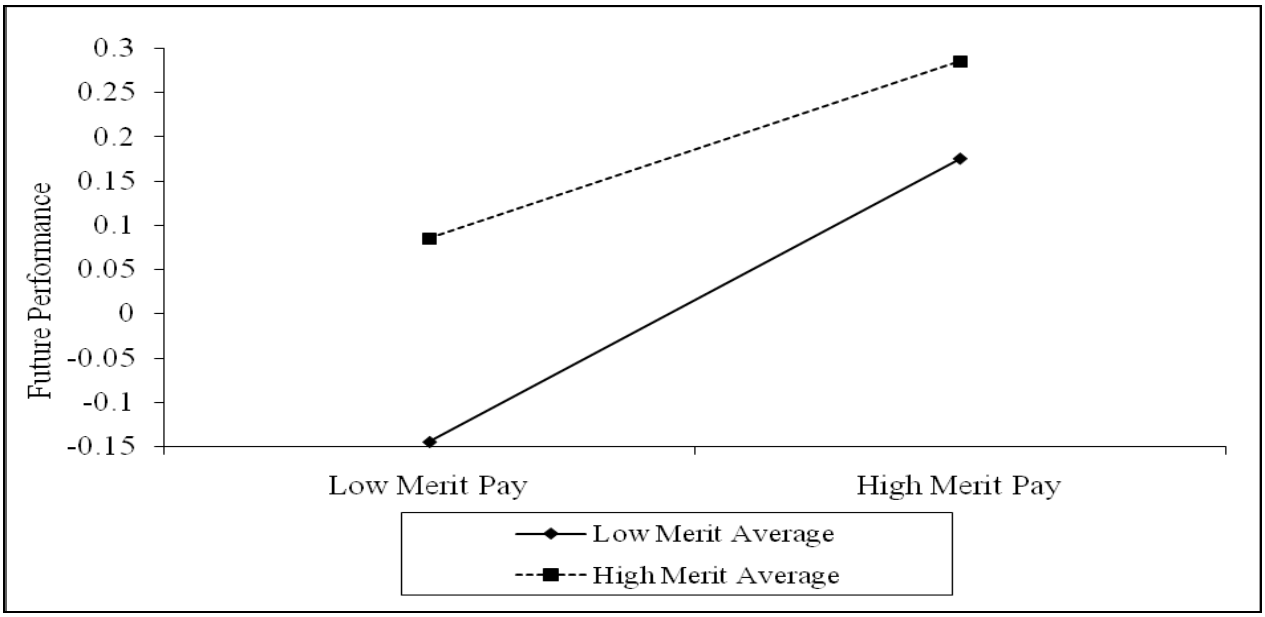


FIGURE 3

PFP Average as a Moderator of PFP Effects on Future Performance (Hypotheses 5b)



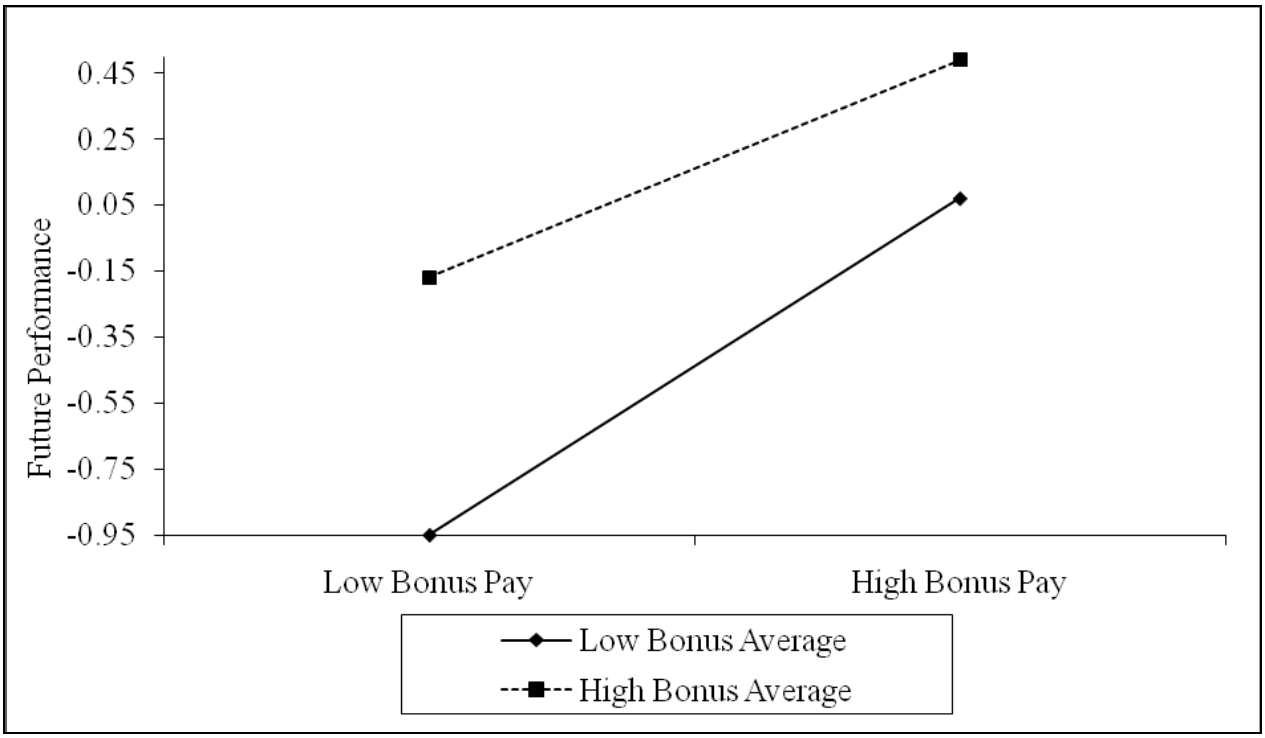
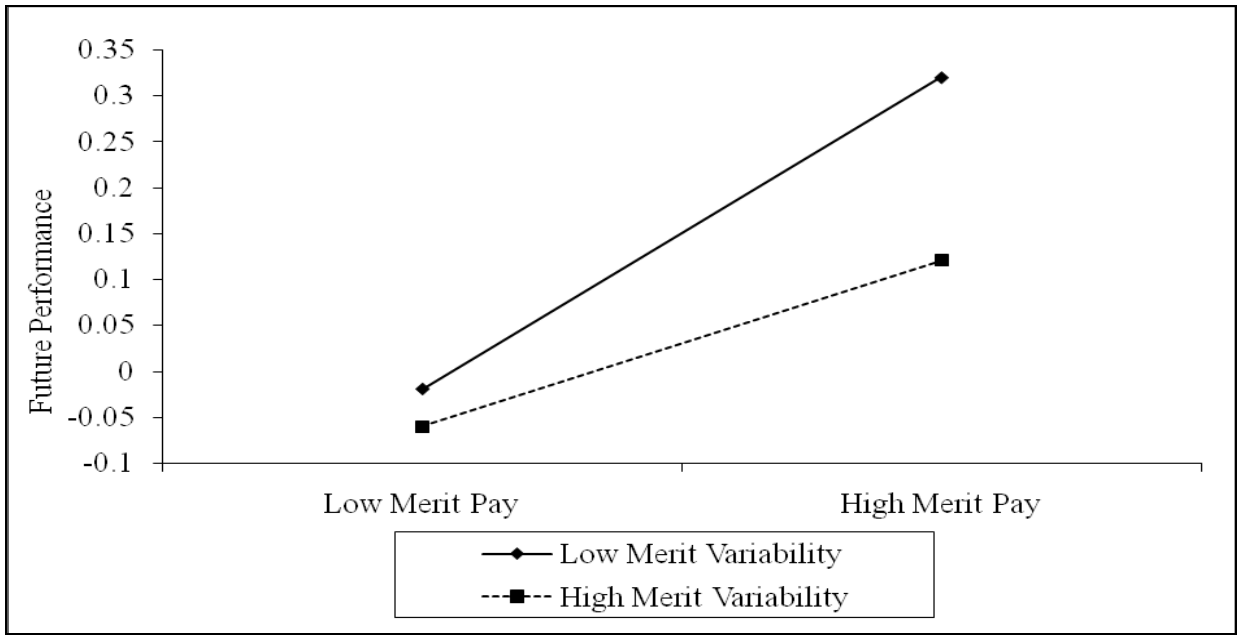


FIGURE 4

PFP Variability as a Moderator of PFP Effects on Future Performance (Hypotheses 5c)



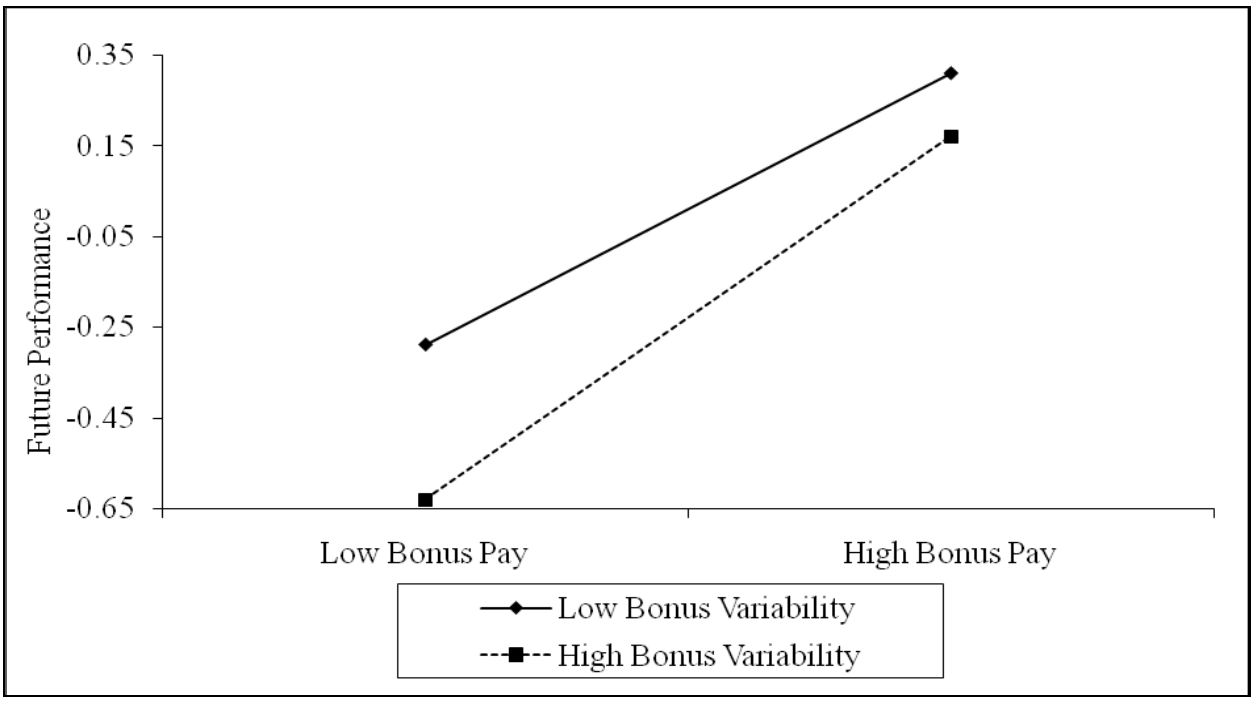


FIGURE 5

Merit Pay as a Moderator of Bonus Pay Effects on Future Performance (Hypothesis 6)

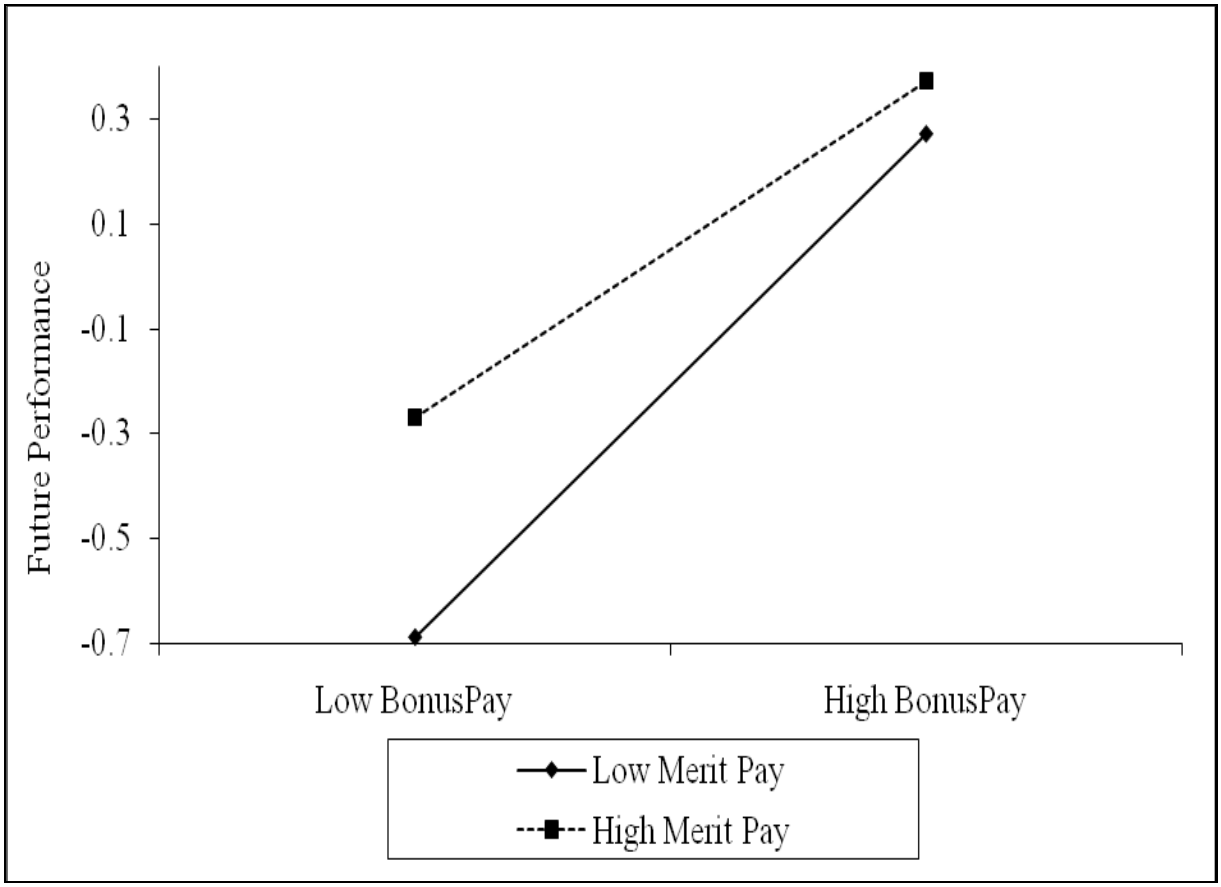
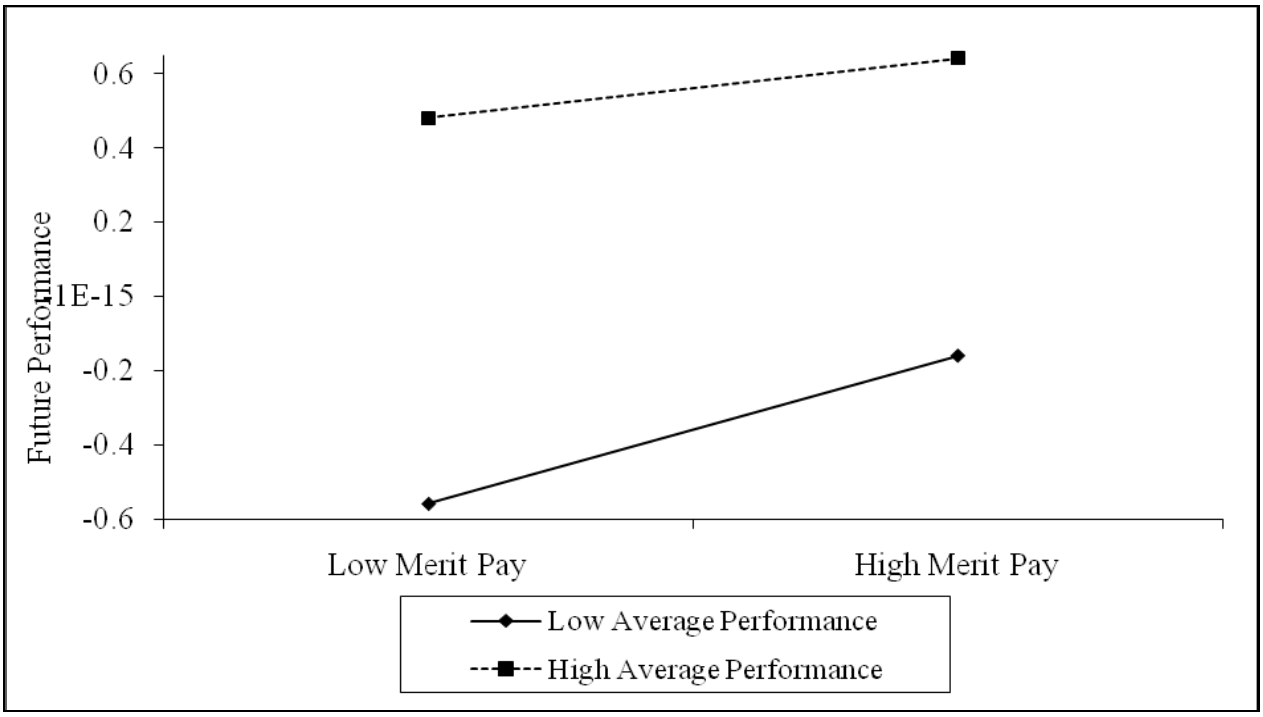


FIGURE 6

Job Performance as a Moderator of PFP Effects on Future Performance (Hypotheses 7a and 7b)



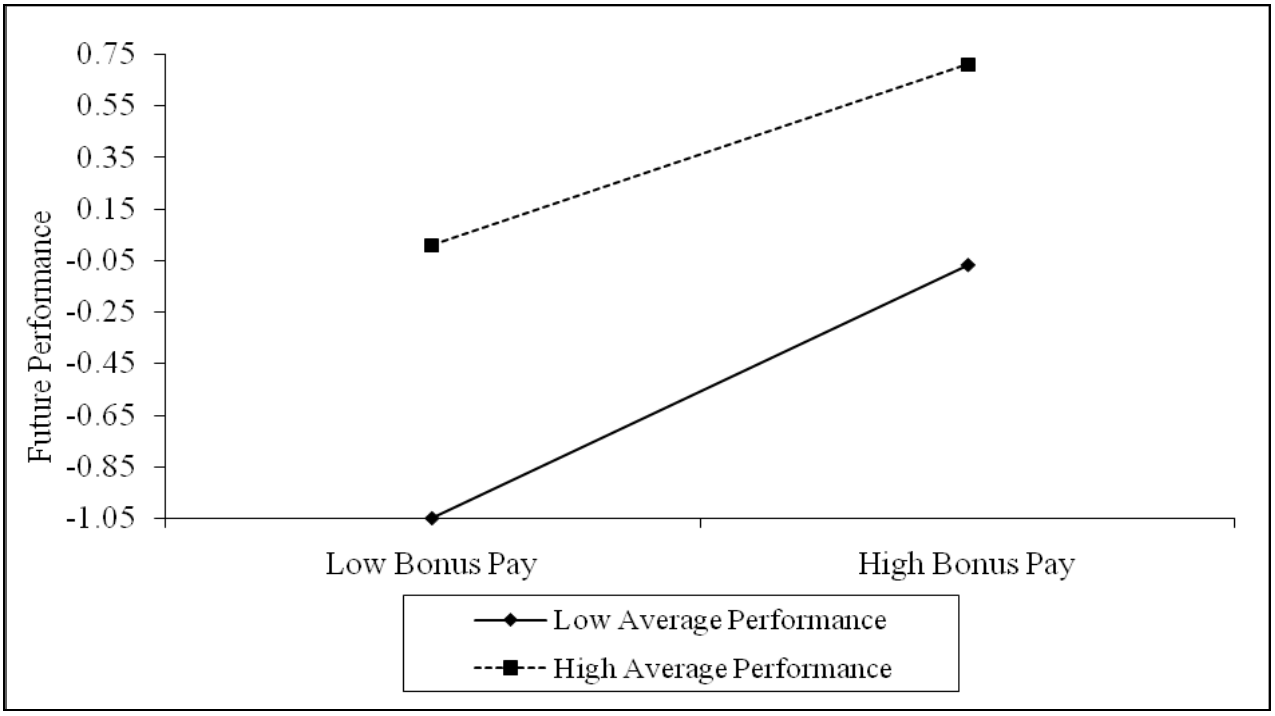


FIGURE 7

Attenuated PFP Effects on Future Performance (Hypotheses 7c and 7d)

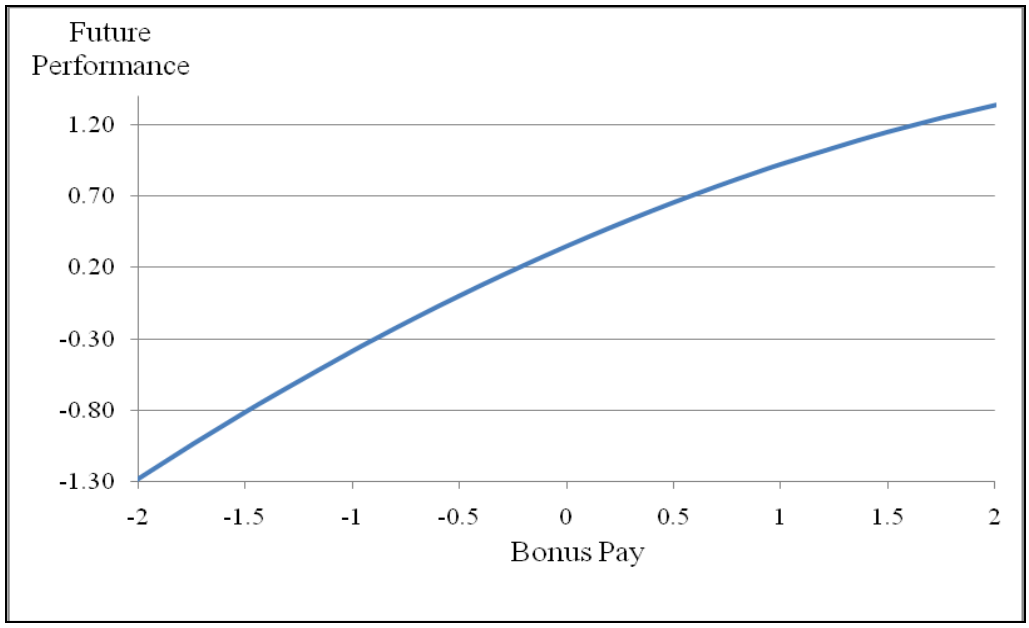


FIGURE 8

Employee Tenure as a Moderator of Bonus Pay Effects on Future Performance (Hypothesis 8b)