2009

The Relative Effects of Merit Pay, Bonuses, and Long-Term Incentives on Future Job Performance (CRI 2009-009)

Sanghee Park
Cornell University, sp436@cornell.edu

Michael C. Sturman
Cornell University, mcs5@cornell.edu

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Abstract

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Keywords

compensation, pay-for-performance, future performance, expectancy theory, incentives

Disciplines

Human Resources Management | Labor Relations

Comments

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SANGHEE PARK AND MICHAEL C. STURMAN

Cornell University

School of Hotel Administration

G-80-P Statler Hall

Ithaca, NY, 14850

Tel: (607) 342-8622

e-mail: sp436@cornell.edu

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ABSTRACT

Extant compensation literature has indicated that pay-for-performance can influence employee performance. There is little research, however, that differentiates the effects of certain forms of pay-for-performance plans on future performance. By applying the precepts of expectancy theory to specific components of the pay-for-performance plans and using longitudinal data from a sample of 739 US employees in a service-related organization, this study demonstrates different effects for merit pay, bonuses, and long-term incentives.

THE RELATIVE EFFECTS OF MERIT PAY, BONUSES, AND LONG-TERM INCENTIVES ON FUTURE JOB PERFORMANCE

The logic behind pay-for-performance compensation is that linking pay to performance can motivate individuals to achieve or sustain greater performance levels (Banker, Lee, Potter, & Srinivasan, 2001; Gerhart & Milkovich, 1990; Heneman & Werner, 2005; Lawler, 1971, 1981; Schwab & Olson, 1990). As a result, a number of forms of pay-for-performance plans have emerged, with different mechanisms through which performance is linked to pay and with different methods of allocating awards (Milkovich & Newman, 2005; Schwab & Olson, 1990). In general, research has found that pay-for-performance plans do help achieve desired results, at both the individual level (Banker, Lee, Potter, & Srinivasan, 1996; Bonner & Sprinkle, 2002; Eisenberger, Rhoades, & Cameron, 1999) and organizational level (Foulkes, 1980; Gerhart & Milkovich, 1990; Gomez-Mejia & Welbourne, 1988; Lawler, 1981); however, there are also instances of pay-for-performance plans did not seem to affect performance (e.g., Heneman & Werner, 2005; Kahn & Sherer, 1990; Kuvaas, 2006; Pearce, Stevenson, & Perry, 1985). Furthermore, despite the abundance of types of pay-for-performance plans, there are only a few instances of research that have sought to examine the potentially different effects that various forms of pay-for-performance may have (e.g., Kahn & Sherer, 1990). In this paper, we argue that the characteristics of pay-for-performance plans result in different effects on future job performance. Specifically, drawing on expectancy theory, we expect that both the strength of the pay-for-performance relationship for a plan, and the nature of the type of reward offered by a plan, influences employees' future job performance.

A weakness of compensation theory, and the compensation literature overall, is that while there may be clear implications for pay-for-performance plans in general, applications of theory

have not kept up with practice. That is, while theory has been applied to the understanding that pay-for-performance should have an effect on future performance levels, there has been little work to differentiate between the myriad of pay-for-performance plans that have emerged in practice. This is both a notable practical and theoretical gap. Practically, organizations may believe that pay-for-performance can be beneficial, but the literature provides no clear guidance as to the relative effectiveness of the myriad of pay-for-performance plans available. Theoretically, because research has not applied (and therefore tested) the efficacy of theory for differentiating between pay-for-performance plans, there is little validated theoretical guidance with which we can predict how different pay-for-performance plans will affect employees. In this paper, we argue that we can draw upon expectancy theory to make specific predictions about the effects of various pay-for-performance plans, based on the characteristics of the specific compensation plans.

Expectancy theory has been widely applied (Green, 1992; Ilgen, Nebeker, & Pritchard, 1981; Isaac, Zerbe, & Pitt, 2001; Johnson, 1991; Mitchell, 1979) among a number of theoretical approaches to job motivation (Bonner & Sprinkle, 2002; Campbell, Dunnette, Lawler, & Weick, 1970; Ilgen et al., 1981; Lawler, 1971; Vroom, 1964). Popularized by Victor H. Vroom (1964), expectancy theory suggests that employees make rational decisions based on their subjective probability that their behavior will lead to certain outcomes and according to their perceptions associated with those outcomes (Mitchell & Daniels, 2003; Wahba & House, 1974). Originally, Vroom (1964) posited that motivation is a function of three beliefs: instrumentality (i.e., the belief that performance will lead to rewards and its associated outcomes; Turner, 2006; Vroom, 1964), expectancy (i.e., the subjective probability of an action or effort leading to an outcome or performance; VanEerde & Thierry, 1996; Vroom, 1964), and valence (i.e., all possible emotional

orientations toward outcomes, and it is interpreted as the importance, attractiveness, desirability, or anticipated satisfaction with outcomes; VanEerde & Thierry, 1996; Vroom, 1964). Subsequent research has simplified the model by subsuming instrumentality into expectancy because of the ambiguity of instrumentality to interpret and operationalize (Wahba & House, 1974). Therefore, the theory is generally operationalized as follows:

$$\text{Motivation} = \text{Valence} \times \text{Expectancy} \qquad (1)$$

According to this formula, these two factors—valence and expectancy—which lead employees to choose types of behaviors and the level of effort, create motivation (Bonner & Sprinkle, 2002). Therefore, expectancy theory suggests that if we can approximate how pay plans differ with regard to these characteristics, we can predict (at least in part) work-related behaviors (Wahba & House, 1974). In this paper, we argue that we can use expectancy theory to understand the different effects associated with different pay-for-performance plans. We use the theory as a guide to understand why various pay-for-performance plans influence employee performance to different degrees. Because pay-for-performance plans (e.g., merit pay, bonuses, and long-term incentives) have different characteristics, the theory can help describe how the characteristics of these plans influence employee performance levels. In short, the purpose of this paper is to develop a better understanding of how different pay-for-performance plans influence employee performance levels.

THREE FORMS OF PAY-FOR-PERFORMANCE PLANS

There are many forms of pay-for-performance (Milkovich & Newman, 2005), and while there has been research performed on many of these pay forms individually, there is very little research considering how multiple pay-for-performance plans may operate simultaneously. Because pay-for-performance plans have different characteristics, we can consider the

implications of these differences to make predictions as to the relative effects of three forms of pay-for-performance.

Merit Pay

Merit pay is a form of reward in which individuals receive permanent pay increases (i.e., raises) as a function of their individual performance ratings (Heneman & Werner, 2005). The pay plan is usually based on an individual's performance and is assessed by an employee performance appraisal (Campbell, Champbell, & Chia, 1998; Schwab & Olson, 1990). Merit pay as pay-for-performance has been frequently used in organizations (Peck, 1984; Schwab & Olson, 1990). Although it can be different across industries, a number of recent surveys have demonstrated that 80% to 90% of organizations use merit pay plans (Heneman & Werner, 2005).

A key characteristic of merit pay, compared to other forms of pay-for-performance, is that merit pay permanently increases employees' base pay. This characteristic differentiates merit pay from the other forms of pay-for-performance that we discuss below. In terms of expectancy theory, all else equal, merit pay has the potential for greater valence than other pay plans. That is, from the employees' point of view, because the present value of a $1 raise (permanent increase) is greater than the present value of a $1 bonus (a one-time payment, be it in the form of a lump-sum bonus or long-term incentive), the valence of a permanent increase should be greater than the valence of an equal dollar amount one-time payment.

Despite the ways that merit pay may seem to incentivize employee performance, the effectiveness of merit pay has been repeatedly questioned (Campbell et al., 1998; Schwab & Olson, 1990). Some researchers have been concerned that organizations often failed to link merit pay to employees' "true" performance because of measurement error associated with their performance appraisal system (Campbell et al., 1998; Schwab & Olson, 1990). In addition, the

difference in merit pay between the best and the worst performer is often not large (Gomez-Mejia & Balkin, 1989). Moreover, such as shown by Kahn and Sherer's study (1990), rewards from a merit pay plan may not actually be strongly associated with job performance ratings. These concerns, though, are not completely generalizable to all implementations of merit pay. Rather, when viewed through the lens of expectancy theory, they suggest that the merit play is often poorly implemented because they fail to generate expectancy.

Bonuses

Bonus pay is a monetary reward given to employees in addition to their fixed compensation (Milkovich & Newman, 2005). This pay plan is also ostensibly based on individual performance, but bonuses do not increase employees' base pay and therefore are not permanent (Sturman & Short, 2000).

Bonus pay also has been widely used in organizations to motivate employees' performance (Joseph & Kalwani, 1998; Sturman & Short, 2000), and a number of surveys reported that the popularity of bonus pay is increasing (Sturman & Short, 2000). Bonus pay is attractive from the company's point of view because the one-time cash reward links pay to performance (Lawler, 1981; Lowery, Petty, & Thompson, 1996) but does not increase fixed labor costs (Kahn & Sherer, 1990; Sturman & Short, 2000).

Although bonus pay is flexible, it has similar potential problems to merit pay (Gomez-Mejia & Balkin, 1989; Lawler, 1981). Discretionary payment sometimes fails to provide a strong link between pay and employees' true performance; it is also possible that the difference in rewards between performers may not be very significant (Gomez-Mejia & Balkin, 1989; Lawler, 1981). Furthermore, because bonuses are one-time payments, they have less economic value than

permanent raises. In short, the effectiveness of the bonuses should also depend on the level of expectancy and valence of the compensation system.

Long-term Incentives

Long-term incentives (LTI) are rewards linked to a firm's long-term growth as well as employee retention (Rousseau & Ho, 2000), generally in the form of cash or stocks (Rich & Larson, 1984). The length of the performance period in the pay plan is multiyear, whereas other pay plans are usually one year (Ellig, 1982). As such, long-term incentives have been thought to align managers' and shareholders' goals (Devers, Holcomb, Holmes, & Cannella, 2006; Eisenhardt, 1989). Therefore, the pay plan can be a key factor for increasing managers' performance and encouraging employees to adopt other desired behaviors (Jenkins, Mitra, Gupta, & Shaw, 1998). These incentives have been used to compensate managers, mostly top executives, with the hope of it leading to higher shareholder returns (Devers et al., 2006). Until recently, a large number of companies have offered long-term incentives in addition to the traditional annual bonuses mostly to executives (Pass, Robinson, & Ward, 2000); however, many firms have recently begun applying long-term incentive plans to other employees (Banker et al., 2001; Buchholz, 1996; Hamilton, 1999; Karr, 1999; McClain, 1998; National Center for Employee Ownership, 2004; Pfeffer, 1998; Schlesinger & Heskett, 1991).

A problem with long-term incentives, though, is the extent to which employees feel their performance is connected to the level of reward. Because long-term incentives are based on firm performance—and if in the form of stock awards, market performance—it is not always clear for employees to "see" the connections between their own performance and performance of other employees along with the firm's objectives to achieve the firm's goals (Boswell & Boudreau, 2001). Because of this issue, companies have a tendency to limit long-term incentives to higher

level, and generally higher paid, employees (Bickford, 1981; Core & Guay, 2001; Ellig, 1982), who arguable have a more direct effect on firm performance. Nonetheless, the link between individual performance and long-term incentives may be weaker than for other forms of compensation, and thus may have lower expectancy than other forms of pay-for-performance.

Long-term incentives also generally have restrictions on their liquidity. That is, employees given long-term incentive awards generally cannot get immediate value from them because there are vesting requirements and/or restrictions on when the awards can be converted into cash. As a result, in many situations, gaining a long-term incentive award does not translate into a form of pay with immediate spendable value. Thus, there is also reason to suspect that, on a dollar-per-dollar basis, long-term incentives have less immediate value than immediately tangible rewards.

DIFFERENTIATING BETWEEN THE EFFECTS OF VARIOUS PAY-FOR-PERFORMANCE PLANS

Because pay-for-performance plans have different characteristics, their effects on job performance should likewise vary. By drawing on expectancy theory, we can understand these potentially different effect by considering (1) the link between pay and performance under each plan (i.e., expectancy), and (2) the nature of the awards from each plan (i.e., valence). Given all three pay-for-performance plans should have at least some aspect of both expectancy and valence, it is clear that expectancy theory yields the overall prediction that pay-for-performance plans will be associated with increased future job performance ratings. This expectation, though, does not truly draw upon the components of expectancy theory, nor does it differentiate between the various pay-for-performance plans. We therefore must turn to understanding the ways in

which expectancy theory suggests pay-for-performance plans should influence employee performance levels.

Expectancy: The Strength of the Link between Pay and Performance

As reviewed above, expectancy theory predicts that employee performance can be increased when a pay plan has a link between performance and rewards. Furthermore, the theory predicts that employees will have higher performance when there is a stronger link between pay and performance.

While all pay-for-performance plans, by definition, should have some degree of connection between pay and performance, this is not always the case when such plans are implemented (e.g., Kahn & Sherer, 1990). A key difference between pay-for-performance plans is that the magnitude of this relationship (Milkovich & Newman, 2005). To understand the potentially different effects of pay-for-performance plans, we must therefore examine the various strengths of the associations between performance and rewards. If a one point improvement on a performance scale for a given individual is associated with a reward that is notably larger than the reward associated with comparable improvement in performance for a second individual, then (on average) we can expect that the former individual will have a stronger incentive to achieve higher future job performance than the latter.

For the purpose of developing hypotheses, the variability of pay plan characteristics makes it impossible to form a specific hypothesis about the degree of pay-for-performance of any given pay form in general. That is, the *name* of the pay form (e.g., merit pay, bonus, long-term incentive) is essentially irrelevant; what is important are the *characteristics* of the pay plan. Therefore, based on the precepts of expectancy theory, we expect the following:

Hypothesis 1: The strength of the connection between pay and performance will be positively associated with greater future employee job performance.

In other words, it is not simply that pay-for-performance should be associated with greater future job performance, but the degree of pay-for-performance should influence future job performance levels.

Valence: The Value of Different Types of Rewards

For the purpose of comparing pay-for-performance plans, even if there are within-person differences with regard to employee perceptions of pay, characteristics of different plans should have some consistent across-person generalizations. As a result, regardless of how a given person is motivated by money, all else being equal, a larger reward should be perceived more positively than a smaller reward. For the first hypothesis, we could not make predictions based on the name of the pay form; however, when considering the effects associate with the type of reward, the name of the pay form conveys specific meaning with regard to the compensation that is offered.

As described earlier, merit pay leads to permanent increases in base pay, whereas both bonuses and long term incentives lead to one-time payments. Therefore, we can expect whether the reward acquired by the employee is permanent (i.e., a raise), or a one-time payment (from bonus or LTI) will relate to the effectiveness of the pay-for-performance plan. That is, because the present value of a $1 raise (permanent increase) is greater than the present value of a $1 bonus (a one-time payment), on a dollar per dollar basis, an equal increase in base pay is worth more than the one-time payment associated with bonuses or long-term incentives.

The characteristics of long-term incentives also provide some insights into their potential effectiveness relative to bonuses. As mentioned earlier, there are often restrictions associated

with long-term incentives. As a result, in many situations, gaining a long-term incentive does not translate into a form of pay with immediate spendable value. The vesting or other restrictions makes the value of a long-term incentive smaller than a comparably sized cash award. Therefore, from an economic perspective, the liquidity of cash bonuses causes such rewards, on a dollar-per-dollar basis, to have a greater present value than a comparably sized stock award. That is, a $1 award with immediate liquidity (i.e., a bonus) has more value than a $1 award with delayed liquidity (i.e., a LTI). This gives bonuses, on a dollar-per-dollar basis, more value than long-term incentives.

Expectancy theory purports that expectancy and valence interact. Put another way, valence moderates the effect of expectancy. Translating this proposition to the task of differentiating between pay-for-performance plans, we expect that the effect associated with the strength of the pay-for-performance relationship will be moderated by the value associated with the specific type of award. Because the rewards associated with the pay forms reviewed here have different values on a dollar-per-dollar basis (i.e., $1 raise > $1 bonus > $1 non-liquid bonus), drawing on the theoretical premise of expectancy theory that valence moderates expectancy, we expect the effect of the pay-for-performance relationship to vary. We therefore predict the following:

Hypothesis 2: The positive effect associated with the strength of a pay plan's pay-for-performance relationship will be greater for merit pay than for a bonus plan.

Hypothesis 3: The positive effect associated with the strength of a pay plan's pay-for-performance relationship will be greater for merit pay than for long term incentives.

Hypothesis 4: The positive effect associated with the strength of a pay plan's pay-for-performance relationship will be greater for a bonus plan than for long term incentives.

METHOD

Sample

Data contained in the human resource information system from a service-related business were collected. For the analyses, data from the years 2003 and 2004 were used. Although the company had employees in other countries, this study focused on employees based in the United States because they are compensated under the same rewards systems.

A sample of 739 employees who had completed data on performance ratings, salary, organization tenure, gender, race, and percentage of three financial rewards (merit pay, bonuses, and long-term incentives) were used. All employees in the sample were eligible for the three rewards although they did not necessarily receive them.

Variables

Compensation variables

Before we can test our hypotheses, we will need to consider the link between pay and performance for the various plans in our study. All employees in the sample were eligible for receiving the three rewards, in addition to their salaries. The financial rewards were determined by grids (which the company specified for each reward) and the discretion of the supervisor. The grids specified ranges of rewards (i.e., a performance rating of 4 could lead to a merit raise of 0 % to 6 %), and thus the specific relationship between pay and performance varied within the sample for each type of incentive.

The merit pay plan was a raise based on individual performance and the guidelines of the specified grids. For the bonus pay plan, the company set targets, which were based on the pay band of the employee at the beginning of the year. The company paid bonuses which reflected the individual's performance rating, the company's financial performance, and the judgment of

the supervisor at the end of the year. Although both the merit pay and bonus pay plan were based on individual performance, allocations for these pay plans were also in part dependent on the decisions of the supervisor.

The distribution of long-term incentives was also based on individual job performance, although the dollar value of these awards was also affected by the performance of the company's stock. Each year, the company distributed restricted stock units to their employees based on a grant grid that the company had set. The grid allowed for differentiations based on individual performance and criticality of employees' job position. At the time of the award, the restricted stock had no real market value. Rather, these stock grants would, at a future vesting date, "turn into" actual shares of the company's real stock. In other words, when granted, the restricted stock had no immediately realizable monetary value (although it was expressed as such, based on the number of stocks and the current price of the company's stock). Once vested, the award had the same market value as any other share of common stock from the organization. Employees of the company were educated about the financial rewards system via intranet, written communication, and training workshops.

Employee job performance

To predict the relationship between financial rewards and future performance, 2004 performance ratings were used as the dependent variable. Performance ratings in the company in this study are based on a 4-point scale: significantly exceeds expectations, exceeds expectations, meets expectations, and below expectations. Performance ratings were transformed to indicator variables from 1 (lowest performance) to 4 (highest performance).

Control variable

Because this study is examining the effect of financial rewards on employees' future performance, previous performance (i.e., 2003 job performance rating) was used as a control variable. Using prior performance as a control variables partials out the effects of stable characteristics that caused employees' performance (e.g., ability, job knowledge, motivation levels, or opportunities to perform) (Sturman, 2003; Sturman, Cheramie, & Cashen, 2005) and unmeasured effects that are attributable to omitted factors (for example, unmeasured ability) that might affect performance and pay (Kahn & Sherer, 1990; Sturman, 2007).

Organization tenure was used as a control variable because it could interfere with testing the main effects of the different characteristics of financial rewards on future performance (Sturman, 2003). Gender differences have also been considered a potentially important factor causing pay difference (Milkovich & Newman, 2005). Therefore, to partial out the effects of these potential influences on future performance, gender was controlled in this study (with men coded as 0 [N = 389], and women coded as 1 [N = 350]). We also used dummy variables to control for race, grouping employees as white (89%, the omitted category), African American (N = 26), Asian (N = 31) or other (N = 25). Salary from 2003 was also controlled in this study. Note that because salary data is skewed, we used a log transformation to reduce the leverage of high values.

Employees were also classified as being in one of four bands. Bands reflected the level of hierarchy in the compensation system. The employee's band was used as a control variable in all subsequent analyses in the paper.

Analyses

Like Kahn and Sherer (1990), we used a two-step process to predict the impact of pay-for-performance systems on employee performance levels. However, whereas Kahn and Sherer

(1990) examined merit pay and bonuses, we are also considering the effects of long-term incentives. The first step of our analyses examines the relationship between performance and pay; the second step looks at the relationship between the pay-for-performance link and future job performance.

Step 1: Estimating the presence of expectancy

To estimate the determinants of merit pay, bonuses, and long-term incentives - and more specifically to estimate the strength of the association between job performance and rewards - we used data on organization tenure, gender, race, 2003 salary, and 2003 performance on the resultant (same year) financial rewards (i.e., 2003).

The method we used to approximate the pay-for-performance relationship of each compensation form is based on the method used by Kahn and Sherer (1990). In their paper, to capture differences in reward schedules, they estimated regression equations predicting rewards (in their case, merit percent and bonus percent) as a function of performance, control variables, and the interaction of performance with those control variables. They then used the first derivative of the results as a measure of each individual's pay-for-performance relationship. In Kahn and Sherer (1990), the initial regression step involved predicting 1985 awards using 1984 data. They then used the computed derivative as a predictor of performance in 1985. We used the same approach by estimating a regression predicting 2003 pay-for-performance outcomes as a function of 2003 performance (in our sample, the 2003 awards are the outcomes for that year, not the prior year), control variables, and the interaction of 2003 performance with all of these variables. For merit pay, the resultant equation is as follows:

$$\begin{aligned} Meritpay = {} & B_0 + B_1 * Gender + B_2 * Tenure + B_3 * Race + B_4 * 2003\ Perf.\ + \\ & B_5 * (2003\ Perf.)^2 + B_6 * (2003\ Perf.) * Gender + B_7 * (2003\ Perf.) * Tenure + \\ & B_8 * (2003\ Perf.) * Race \end{aligned} \qquad (2)$$

Where, Merit pay % = (2003 merit pay in dollars) / (2003 salary)

The same set of independent variables were then used to predict <u>*Bonus%*</u> and <u>*LTIP%*</u>, where

Bonuses %= (2003 bonuses in dollars) / (2003 salary)

LTIP% = (2003 long-term incentives in dollars) / (2003 salary)

We calculated the first derivative of this equation to represent the employees' past experience with the pay-for-performance plans. Expressed mathematically,

$$PFPMerit \equiv \frac{\partial(Meritpay)}{\partial(2003\ Perf.)} \qquad (3)$$

This was specifically calculated as follows:

$$\frac{\partial(B_0 + B_1 * Gender + B_2 * Tenure + B_3 * Race + B_4 * 2003\ Perf. + B_5 * (2003\ Perf.)^2 + B_6 * (2003\ Perf.) * Gender + B_7 * (2003\ Perf.) * Tenure + B_8 * (2003\ Perf.) * Race)}{\partial(2003\ Perf.)}$$
$$= B_4 + 2 * B_5 * (2003\ Perf.) + B_6 * Gender + B_7 * Tenure + B_8 * Race$$

The same method was employed to compute the other two measures of pay-for-performance:

$$PFPBonus \equiv \frac{\partial(Bonus)}{\partial(2003\ Perf.)} \qquad (4)$$

$$PFPLTIP \equiv \frac{\partial(Long-Term-Incentive)}{\partial(2003\ Perf.)} \qquad (5)$$

Following the Kahn and Sherer (1990) method, the first derivative of these results were used as a measure of each individual's pay-for-performance relationship for each pay form.

Step 2: Analyzing the Effects of the Pay-for-Performance Relationships

In the second stage of our analyses, we examined the association between the pay-for-performance link (i.e., from equations 3, 4, and 5 - along with the control variables of 2003 performance, 2003 salary, organization tenure, gender, race, and pay band) to predict future performance (i.e., 2004 performance). The first step of the equation did not include the pay-for-performance variables, as shown below in equation 6.

$$2004\ Perf.=\beta_0+\beta_1(2003\ perf.)+\beta_2(Ln\,2003\ salary)+\beta_3(tenure)+\beta_4(Gender)+\beta_5(Race)+\beta_6(PayBand) \quad (6)$$

The second step added the three pay-for-performance variables. This model is shown in Equation 7. All of the equations were estimated using OLS regression.

$$2004\ Perf.=\beta_0+\beta_1(2003\ perf.)+\beta_2(Ln\,2003\ salary)+\beta_3(tenure)+\beta_4(Gender)+\beta_5(Race)+\beta_6(PayBand)+\beta_7(PFPMerit)+\beta_8(PFPBonuses)+\beta_9(PFPLIP) \quad (7)$$

RESULTS

Means, standard deviations, and ranges of the variables in this study are provided in Table 1. Table 2 shows the correlations between the study's variables.

Insert Tables 1 and 2 about Here

The regressions predicting the level of each award are shown in Table 3. For each pay-for-performance outcome, the analyses regressed the pay-for-performance outcome on job performance and the control variables including performance interacted with all of the variables. This step is used not only to compare the relative effects of performance on the various outcomes but also to derive the first derivative, for the purpose of providing the pay-for-performance metrics used in subsequent analyses.

Insert Tables 3 about Here

The three regressions show that, in all cases, job performance ratings were positively related to the size of the award. For merit pay and bonuses, the effect was positive and nonlinear

(for merit, B = .0023, $p < .05$; for bonus, B = .0027, $p < .01$). For long-term-incentives, the effect of performance was positive and linear (B = .51, $p < .01$).

Table 4 shows results of regressions predicting future performance. Step 1 presents a base case, with 2004 performance regressed on prior (i.e., 2003) performance and the control variables. Step 2 uses the derivative-based metrics from Kahn and Sherer (1990) (from equations 3, 4, and 5). As a set, the results support the hypotheses.

Insert Tables 4 about Here

Hypothesis 1 had predicted that a compensation plan with an association between pay and performance (i.e., a true pay-for-performance plan; or, a plan with expectancy) would have a positive effect on future performance. Our results show that all three pay-for-performance plans have a positive effect on future performance after controlling for prior performance and the other control variables.

The next two hypotheses predicted that the effect of pay-for-performance with permanent increases (i.e., merit pay) would have a larger effect than that associated with a comparable one-time payout, from both bonuses (hypothesis 2) and long-term incentives (hypothesis 3). This too was supported. In step 2, using the set of pay-for-performance metrics, the coefficient for the merit plan was significantly greater than the coefficient for both the bonus plan ($p < .001$) and long-term incentives ($p < .0001$).

Because of the restrictions on long-term incentives, Hypothesis 4 predicted that the effect of bonuses would be stronger than the effect of long-term incentives. The results support this

hypothesis as well. In step 2, the coefficient for bonuses was larger than the coefficient for long term incentives, and the difference was statistically significant ($p < .0001$).

DISCUSSION

As compensation packages become more complex, with individuals often being incentivized by multiple pay-for-performance systems, compensation research needs to at least keep up with (if not lead) compensation practice. This paper presents a test of the relative efficacy of three increasingly common pay-for-performance plans for influencing employees' future performance levels. The hypotheses, based on expectancy theory, were supported, and thus uphold our overall prediction that the structure and form of pay-for-performance plans will have different effects on future performance levels. This is also the first paper to simultaneously compare the effects of merit pay, bonuses, and long-term incentives on employee performance ratings in a longitudinal context.

While there has been abundant previous research considering pay-for-performance plans, there has been little work specifically differentiating the type of effects we should expect from different forms of pay-for-performance. In general, expectancy theory suggests that a compensation plan with greater expectancy and greater valence should motivate employees to perform better. This suggests that by considering the expectancy and valence of different forms of compensation (i.e., different types of pay-for-performance plans), it is possible to differentiate between the types of effects we may expect from each. This study was able to look at the different effects associated with the particular components of the compensation system that simultaneously affect employees. As a result, this study draws on the generalizations of expectancy theory and the specific characteristics of three different financial rewards, and successfully predicts employees' future performance by combining them.

The results of this study provided positive support for the hypotheses. As expected, the results from the first set of analyses indicate that individual performance is the most significant factor to determine financial rewards. In other words, performance levels in a given time period were indeed associated with the reward linked with different pay-for-performance plans in the same time period, thus making these plan genuine pay-for-performance plans and not just pay-for-performance plans in name only.

Because all three plans had a positive pay-for-performance relationship, hypothesis 1 predicted that all pay-for-performance metrics would have a positive effect on future performance. That is, all the metrics capturing individual differences in reward schedules should have, and indeed did have, a positive relationship with future performance, even after controlling for the effects of prior performance ratings. Yet, because the rewards from the plans have different economic value due to the characteristics of each form of pay-for-performance, we predicted differential effects across the three plans. These predictions were also supported.

Hypotheses 2 and 3 were fully supported, with the results showing merit pay having a larger effect than that of both bonuses and long-term incentives. It should be pointed out that this result may at first seem inconsistent with that reported by Kahn and Sherer (1990), who showed a significant effect for bonus pay-for-performance, but not merit pay. In their study, though, the effect of performance on merit pay was minimal. Their regression predicting merit raise (an analysis similar to the first step in our analyses), had no significant effects associated with performance (main effect or interactions), whereas performance had a significant positive squared effect in our sample. Also, whereas Kahn and Sherer's regression of merit pay predicted 13% of the variance, in our sample, we were able to explain 45% of the variance. By itself, performance explains 37% of the variance in merit percent (the correlation between 2003

performance and merit pay percent, from table 2, is .61). Thus, this apparent contradiction between our results and those of Kahn and Sherer (1990) actually support and strengthens one of our key points: it is the characteristics of the plan that cause it to affect performance levels, not the "name" of the plan. It appears that in the company studies by Kahn and Sherer (1990), what was called a merit pay plan was not really a pay-for-performance plan (because there appeared to be no relationship between pay and performance). As a result, the application of expectancy theory would have correctly predicted that, in their sample, Kahn and Sherer (1990) should have seen a positive effect for the bonus plan, but no effect for the so-called merit plan.

Hypothesis 4 was also supported. The coefficient associated with bonuses was indeed greater than that of long term incentives, and this difference was statistically significant. This finding further highlights the need for research to estimate the type of pay-for-performance relationships that exist under various pay plans. This sort of metric needs to be based on the characteristics of the plan or relationships derived from archival data, so that such metrics can be derived by organizations and used to help in the design of pay-for-performance plans. Doing so will help facilitate the design of more effective pay-for-performance systems, based on a strong theoretical foundation.

Overall, we feel that the sum of the results supports the applicability of expectancy theory for understanding the sort of effects that we should expect from different pay-for-performance plans. Our findings confirm the idea that greater expectancy and valence positively relate to future performance levels, even after controlling for prior performance. The theory also provides a clear explanation for the different results between our study and that of Kahn and Sherer (1990) while replicating their methodological approach. Our study also has the practical application that it provides a theoretically driven rationale to assist in the design of pay-for-performance systems,

highlighting the need for organizations to specifically consider (and empirically examine) the relationship that they ultimately create between pay and performance for each form of compensation they provide to their employees.

This research has a number of advantages over previous studies on pay-for-performance. First, it used longitudinal data controlling for prior performance to examine the effects of pay-for-performance plans on future performance. Second, the study considered the different effects of the characteristics of multiple pay-for-performance plans simultaneously. The result was a conservative test on how pay-for-performance plans influence future performance levels.

Of course like all research, this study is not without limitations. From a theoretical perspective, this study tested the generalizability of expectancy theory to the task of predicting the effects of pay-for-performance compensation systems. As such, we did not directly test the original prescriptions of expectancy theory—motivation. Nor did we assess individual perceptions of expectancy and valence; rather, the predictions were based on economic approximations from the relationship between pay and performance for expectancy and from the characteristics of the plans for valence. While this is not the first study to examine pay-for-performance plans in this way (Kahn & Sherer, 1990), it is not a conventional test of expectancy theory. It is critical to point out, though, that one goal of this paper was to draw on theory to show how we could differentiate between the effects we expect from various pay-for-performance plans.

Methodologically, the study was limited by the longitudinal data being restricted to only two years in one company in one country. To detect a causal relationship that might exist, more periods should be tested in order to make conclusive statements (Kuvaas, 2006). It is also possible that company-specific characteristics (culture, industry, etc.) could influence the results.

Thus, examining these relationships in other contexts would provide useful information to further test the generalizability of our findings.

It would also be valuable to conduct more tests aimed at falsifying our application of expectancy theory. In this study, all the pay plans indeed had pay-for-performance relationships. An interesting test of our theoretical approach would be to test the effects of multiple pay forms when some are actually not linked to performance. The post-hoc explanation of Kahn and Sherer's (1990) null results for merit pay provides some support in this way, but a priori testing would be preferable. Such a test would provide further evidence as to the veracity of our application of expectancy theory.

Understanding how the characteristics of compensation plans affect future performance is crucial for organizations to design effective pay-for-performance plans. This study makes an important contribution to the literature, not just by examining the relationships between pay-for-performance plans and future performance, but by digging into the characteristics of pay-for-performance plans. Yet, despite these contributions, the limitations in this study provide much room for future research. Further study should be pursued to clarify the influences on future performance and how different compensation plans affect employee performance over time.

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TABLE 1

Summary of Sample

Characteristics	**Data**		
Gender	Female: 47 %, Male: 53 %		
Race	89% White, 4% Asian, 4% African American, 3% Other		
	Mean	**SD**	**Range**
2004 performance	2.30	0.58	1 - 4
2003 performance	2.43	0.64	1 - 4
2003 salary	$78,415	24,977	$34,100-$244,400
Tenure	12.02	7.51	3 - 45
Merit pay %	2.09%	0.015%	0% - 6%
Bonus pay %	5.48%	0.046%	0% - 38.4%
LTI plan %	2.80%	0.10%	0% - 123%
PFPMerit	0.0048	0.0046	-0.0065 – 0.0188
PFPBonus	0.0026	0.0056	-0.021 – 0.021
PFPLTI	0.00019	0.030	-0.036 – 0.211

Note. N = 739

TABLE 2

Summary Statistics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. 2004 performance	1.00													
2. 2003 performance	0.38	1.00												
3. Ln 2003 salary	0.19	0.19	1.00											
4. Tenure	0.00	-0.02	0.11	1.00										
5. Gender	0.02	-0.03	-0.22	0.09	1.00									
6. Race (White)	0.06	0.03	0.05	0.01	-0.08	1.00								
7. Race (African American)	-0.03	0.01	0.00	-0.07	0.09	-0.59	1.00							
8. Race (Asian)	-0.02	-0.04	-0.05	0.07	0.04	-0.54	-0.04	1.00						
9. Race (Other)	-0.05	-0.03	-0.03	-0.02	0.00	-0.53	-0.04	-0.04	1.00					
10. Merit pay %	0.35	0.61	0.12	-0.12	-0.12	0.06	-0.07	-0.02	0.00	1.00				
11. Bonus pay %	0.28	0.26	0.56	-0.10	-0.06	0.01	-0.01	-0.01	-0.01	0.31	1.00			
12. LTI plan %	0.18	0.14	0.48	-0.13	-0.02	0.04	-0.01	-0.03	-0.03	0.12	0.74	1.00		
13. *PFPMerit*	0.32	0.40	0.21	-0.28	-0.26	0.25	-0.29	0.07	-0.19	0.35	0.21	0.15	1.00	
14. *PFPBonus*	0.19	0.28	0.19	0.12	-0.39	0.14	0.19	-0.17	-0.28	0.18	0.05	-0.16	0.31	1.00
15. *PFPLTI*	0.03	-0.06	0.24	0.06	-0.05	0.03	0.04	-0.06	-0.03	0.01	0.43	0.57	-0.01	-0.43

Note. N = 739. Correlations greater than .08 are significant at $p < .05$.

TABLE 3

First stage: Prediction of 2003 Rewards

Explanatory Variable	Pay for Performance Component		
	Merit %	**Bonus%**	**LTI%**
Intercept	0.070 (0.078)	0.12 (0.18)	1.219 (0.043)**
2003 Performance	-0.033 (0.029)	0.043 (0.074)	0.51 (0.17)**
Ln 2003 Salary	-0.0048 (0.007)	-0.0089 (0.016)	-0.012 (0.037)**
Gender	0.0011 (0.0039)	-0.013 (0.0068)	-0.016 (0.016)
Tenure	0.00025 (0.00027)*	0.00074 (0.00049)	0.0044 (0.0011)**
African American	-0.0055 (0.010)	0.019 (0.018)	0.018 (0.041)
Asian	0.012 (0.0096)**	0.049 (0.017)**	0.0023 (0.039)
Other	0.010 (0.012)	0.017 (0.019)	0.0033 (0.046)
2003 Performance^2	0.0023 (0.0011)*	0.0027 (0.0010)**	0.014 (0.0047)
2003 Performance x (Ln 2003 Salary)	0.0027 (0.0024)	0.0077 (0.0064)	0.058 (0.015)***
2003 Performance x Gender	-0.0014 (0.0014)	0.0046 (0.0027)	0.0080 (0.0064)
2003 Performance x Tenure	-0.00020 (.000096)**	-0.00042 (0.00020)*	-0.0022 (0.00047)***
2003 Performance x African American	0.0018 (0.0037)	-0.0080 (0.0074)	-0.0078 (0.017)
2003 Performance x Asian	-0.0068 (0.0034)****	-0.018 (0.0067)	0.00069 (0.016)
2003 Performance x Other	-0.0039 (0.0042)	-0.0051 (0.0082)	-0.0048 (0.019)
R^2	0.45	0.78	0.75

Note. N = 739. * p < .05; ** p < .01. Standard errors are in parentheses. The table includes the interactions of 2003 job performance with all of the variables for the purpose of taking the derivative (with respect to job performance) so as to develop a metric for each employee of their respective pay-for-performance relationships (i.e., replicating the methodology of Kahn and Sherer, 1990).

TABLE 4

Second stage: Prediction of 2004 Performance

	Step 1	Step 2
Intercept	0.34	-0.35
	(1.08)*	(0.81)
2003 Performance	0.32	0.23
	(0.031)**	(0.034)**
Ln 2003Salary	0.12	0.16
	(0.09)	(0.072)*
Gender	0.057	0.20
	(0.041)	(0.050)**
Tenure	-0.00066	0.00012
	(0.0027)	(0.0031)
African American	-0.063	0.025
	(0.11)	(0.11)
Asian	-0.089	-0.08
	(0.041)	(0.12)
Other	-0.093	0.18
	(0.11)	(0.12)
PFPMerit		24.71
		(6.08)**
PFPBonus		19.52
		(6.24)**
PFPLTI		2.29
		(0.91)*
R^2	0.18	0.21

Note. N = 739. * p < .05; ** p < .01.