



# A comparative examination of traditional and skill-based pay plans

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## Abstract

**Purpose** – The purpose of this paper is to make a comparative assessment of the relationship between types of pay plans and several workforce-level outcomes in 214 organizations. The plans include pay that is skill-based, job-based, and market-based. The types of workforce-level outcomes include workforce flexibility, attitudes, membership behaviors, and productivity. The paper also assesses the relationship between the success of pay plans and workforce productivity/membership behaviors.

**Design/methodology/approach** – Survey data from 214 organizations are used to test the hypothesized relationships using hierarchical regression analysis and partial least square techniques.

**Findings** – Results support a significant and positive relationship between skill-based pay plans, workforce flexibility, and workforce attitudes. Skill-based pay plans, when compared with market-based pay plans, are found to positively relate to workforce membership behaviors, and workforce attitudes mediate this relationship. Similarly, workforce flexibility mediates the positive relationship between skill-based plans and workforce productivity. The success of skill-based plans depends on significant improvements in workforce productivity and membership behaviors. The fit between the pay plan and the facility's climate/culture moderates the relationship between workforce productivity and the pay plan's success.

**Practical implications** – The results indicate that skill-based pay plans are superior for achieving several organizational and employee outcomes. The authors discuss the implications of these results for research and practice.

**Originality/value** – Limited comparative empirical evidence exists on the effects of different types of pay systems on organizational outcomes. The paper seeks to address this gap.

**Keywords** Pay, Skills based pay, Employee relations

**Paper type** Research paper



Compensation systems play a significant role in promoting organizations' strategic goals (Gerhart and Milkovich, 1992; Gerhart *et al.*, 1996; Gomez-Mejia and Balkin, 1992; Lawler and Jenkins, 1992; Milkovich, 1988). Traditionally, compensation systems were designed to be strictly job-based – employees were paid for the jobs they performed. In the last few decades, organizations have questioned this tradition and have experimented with increasingly varied forms of compensation based, for example, on the market

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or on employee skills. As a point of comparison, skill-based pay systems reward employees for the repertoire of skills they possess or the number of different jobs they can do. Two individuals doing the same job could have vastly different pay levels because one possesses more skills than the other, an approach that fundamentally differs from job-based compensation. Much heated debate has centered on the philosophical differences inherent in these systems and their purported benefits (Barrett, 1991; Dierdorff and Surface, 2008; Gupta and Jenkins, 1991; Lawler, 1991; Mahoney, 1991; Shaw *et al.*, 2005), but few empirical examinations have focused on comparing pay structures and outcomes (Guthrie, 2000; Murray and Gerhart, 1998; Shaw *et al.*, 2001). Gerhart and Milkovich (1992, pp. 511-2) noted “[. . .] there is virtually no research on the consequences of skill-based and knowledge-based pay structures relative to more traditional job-based pay structures”. In this paper, we offer comparative evidence on the relationship between traditional and nontraditional pay structures and several workforce-level outcomes.

### Background and approach

Clearly, compensation systems are varied. Most traditional is the job-based system, which rewards employees for the jobs they hold. Internal equity considerations (resolved through job evaluations) and external equity considerations (resolved through wage-and-benefits surveys) are incorporated into these systems. Over the years, a large body of research assessed and established the ideal mechanics and the outcomes of these systems (Hill *et al.*, 1994; Milkovich and Newman, 2008). A somewhat similar approach to compensation determination is market-based pay, which treats internal equity considerations as subsidiary to external equity considerations; pay is largely, if not exclusively, determined through market assessments (Dulebohn and Werling, 2007; Milkovich and Newman, 2008). According to Dulebohn and Werling (2007, p. 202):

[. . .] placing primary emphasis on the external market rather than internal job evaluation is a corollary to the dismantling of ILMs, organizational change, new approaches to the employment relationship by employers and responses to a more competitive environment.

Allowing the market to price jobs appears to be the increasing trend (Dulebohn and Werling, 2007). Although downplaying internal equity and job evaluations, market-based pay systems are still job-based, in that the job continues to be the basis for pay determination. In other words, although research is relatively rare on the market-based pay system, it is essentially a variant of the traditional job-based pay system.

A third, perhaps most radically different, pay structure is skill-based compensation. Skill-based pay systems are intended to encourage the development of a multi-skilled work force, and thus base pay on the number of different jobs an employee can do. The most common are horizontal skill-based pay systems in which employees learn (and are paid for) a variety of skills or skill units within a particular organizational echelon. About 50 per cent of large US corporations are estimated to use skill-based pay for at least some of their employees (Lawler *et al.*, 1992; Ledford, 1995). Empirical research on the benefits of skill-based pay has been relatively rare (Al-Waqfi and Agarwal, 2006; Dierdorff and Surface, 2008; Guthrie, 2000; Murray and Gerhart, 1998; Shaw *et al.*, 2001), although several studies have described its benefits (Gupta *et al.*, 1986, 1992, 1987; Gupta and Shaw, 2001; Jenkins *et al.*, 1992; Ledford, 1990; Parent and Weber, 1994).

As we study the evidence, we find that comparative empirical information is limited regarding these pay plans (see Al-Waqfi and Agarwal, 2006; Guthrie, 2000;

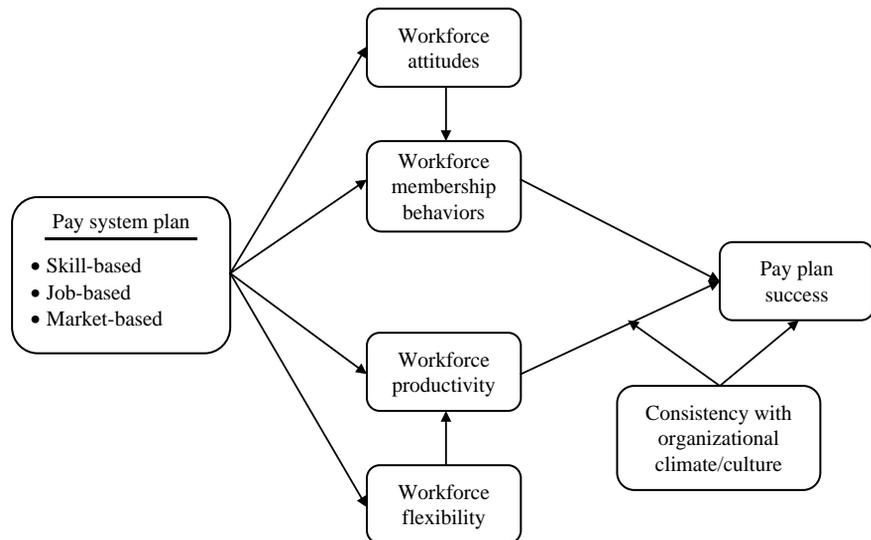
Murray and Gerhart, 1998; Shaw *et al.*, 2001 for exceptions), particularly at the facility level. To address these deficiencies, it is important to develop a theoretical framework that allows us to assess the relative efficacy of each compensation structure. We propose a beginning toward that end. Below we outline the outcomes of interest as well as the contingencies for the effects to be evident.

### Development of theoretical framework

Organizations use compensation plans to achieve many important strategic organizational outcomes, such as higher workforce productivity, superior workforce attitudes, and better membership behaviors (Dulebohn and Werling, 2007; Gerhart and Milkovich, 1992; Milkovich and Newman, 2008). According to Milkovich and Newman (2008), an organization's choice of a pay system (i.e. skill-based, job-based, or market-based) may be related differentially to these desired outcomes. The relationship between a type of pay plan and organizational outcomes is likely to be complex, however, and may involve various mediating and moderating processes[1] (Dulebohn and Werling, 2007; Milkovich and Newman, 2008). For example, a considerable body of compensation research suggests that job attitudes mediate the relationship between pay levels and voluntary turnover (Guthrie, 2000; Milkovich and Newman, 2008). In a similar vein, skill-based pay plans are often chosen to affect workforce productivity through enhanced workforce flexibility (Murray and Gerhart, 1998). Thus, as a first step, we develop and propose a theoretical framework to assess comparative effects of pay plans on workforce outcomes. Figure 1 shows our proposed framework.

#### *Pay plans and workforce flexibility*

Arguably the most fundamental reason for using skill-based pay systems is to promote workforce flexibility. Paying people to learn many skills encourages them to expand their capacities (Dierdorff and Surface, 2008; Gupta, 1997; Gupta and Shaw, 2001; Jenkins and Gupta, 1985; Lawler, 1990; Lee *et al.*, 1999; Murray and Gerhart, 1998;



**Figure 1.**  
The proposed framework to assess the comparative effects of compensation on workforce outcomes

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Tosi and Tosi, 1986). When each employee can perform many different jobs, labor-related workflow irregularities can be resolved quickly and easily. The operations approach suggests that employees with many skills and increased competency substantially affect organizational productivity (Murray and Gerhart, 1998). In production settings such as just-in-time manufacturing systems, resources are used more efficiently (Shaw *et al.*, 2001). Although workforce flexibility is a significant purported benefit of skill-based pay systems, this benefit has yet to be empirically validated. Theory suggests, however, that overall workforce flexibility should be higher in skill-based than in market-based or job-based pay systems:

- H1a.* Compared with job-based pay, the use of skill-based pay will be positively associated with workforce flexibility.
- H1b.* Compared with market-based pay, the use of skill-based pay will be positively associated with workforce flexibility.

#### *Pay plans and workforce attitudes*

A considerable body of research has pointed to the positive impact of higher pay levels on employee job attitudes such as satisfaction and commitment<sup>[2]</sup> (Heneman and Judge, 2000; Judge *et al.*, 2010; Milkovich and Newman, 2008). Based on a summary of previous work, Heneman (1985, p. 131) argued that “the consistency of the pay level-pay satisfaction is probably the most robust (though hardly surprising) finding regarding the causes of pay satisfaction”. Based on one of the most comprehensive meta-analytic reviews of 115 correlations, however, Judge *et al.* (2010) found pay level to be only weakly, though significantly, related to both pay satisfaction and job satisfaction. Three theories are posited to support a positive relationship between pay levels and job attitudes. First, relative deprivation theory suggests that higher pay levels ensure that actual pay levels meet or exceed desired pay levels and thus enhance employee satisfaction (Sweeney *et al.*, 1990). Second, according to signaling theory, higher pay levels provide positive feedback assuring employees they are performing well (Milkovich and Newman, 2008). Third, adaptation level theory (Helson, 1947) explains the observed weak, though significant, relationship between pay level – employee work attitudes – higher pay levels enhance pay satisfaction only temporarily until an employee shifts the reference point to the new pay level (Judge *et al.*, 2010).

Compared with job-based or market-based pay plans, pay levels tend to be higher under skill-based pay plans (Gupta and Shaw, 2001; Milkovich and Newman, 2008; Murray and Gerhart, 1998). Accordingly, workforce attitudes are proposed to be superior under skill-based pay plans. Employees are expected to be more satisfied and committed under these plans because the organization invests in employee growth and development, employees enjoy higher job security, and the organization emphasizes employee individuality by basing pay on the person rather than the job (Al-Waqfi and Agarwal, 2006; Gupta, 1997; Gupta and Shaw, 2001; Jenkins and Gupta, 1985; Uen and Chien, 2004). Thus, skill-based pay plans are expected to be positively associated with workforce attitudes such as employee satisfaction and commitment (Gupta *et al.*, 1987). Accordingly, we propose:

- H2a.* Compared with job-based pay, skill-based pay will be positively associated with workforce attitudes.

*H2b.* Compared with market-based pay, skill-based pay will be positively associated with workforce attitudes.

*Pay plans and workforce membership behaviors*

An important goal of a pay plan is attracting and retaining the best employees (Lawler, 1987, 1990; Milkovich and Newman, 2008). Not all pay plans specifically target or achieve this objective, however. Milkovich and Newman (2008) suggested that because market-based pay plans usually peg a firm's wage rate to the "going wage rate" in order to neutralize pay as a strategic tool, this form of pay plan is unlikely to be positively related to attracting and retaining superior talent. On the other hand, job-based pay plans with a "lead" strategy could help achieve this objective. Similarly, some evidence indicates a positive relationship between skill-based pay use and workforce membership behaviors such as attraction, attendance, and retention (Guthrie, 2000). Based on the tenets of transaction cost theory (Williamson, 1979) and human capital theory (Becker, 1975), Guthrie (2000; see also Dierdorff and Surface, 2008) asserted that skill-based pay produces transaction-specific human capital. Because such human capital is firm-specific, employees will find it difficult to earn higher rents in the marketplace; thus, a negative relationship will result between skill-based plans and turnover (Guthrie, 2000). Accordingly, we propose:

*H3a.* Compared with job-based pay, skill-based pay will be positively associated with superior workforce membership behaviors (e.g. lower absenteeism and turnover).

*H3b.* Compared with market-based pay, skill-based pay will be positively associated with superior workforce membership behaviors (e.g. lower absenteeism and turnover).

*Pay plans and workforce productivity*

Of course, an important goal of any pay plan is to enhance workforce productivity. Generally, researchers consider that skill-based pay leads to higher output quality, although opinion is somewhat silent about the relationship between skill-based pay plans and output quantity. Output quality is expected to improve for a variety of reasons. Workers under skill-based pay systems can perform different jobs and know how these jobs fit together, which increases the level of core job dimensions (Hackman and Oldham, 1980). This in turn increases intrinsic motivation and emphasis on producing high quality goods. Furthermore, workers are more likely to adopt a system view of organizational activities (Dobbins *et al.*, 1991), again increasing output quality. Because increased output quality tends to reduce scrap rate, the quantity of output and long-term productivity should also be higher under skill-based pay plans (Murray and Gerhart, 1998). Accordingly, we propose:

*H4a.* Compared with job-based pay, skill-based pay will be positively associated with workforce productivity.

*H4b.* Compared with market-based pay, skill-based pay will be positively associated with workforce productivity.

A significant body of research shows that workforce attitudes and flexibility partially mediate the effects of pay plans on workforce behaviors (Judge *et al.*, 2010, Guthrie, 2000; Milkovich and Newman, 2008). Below, we offer theoretical reasons for

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the hypothesized mediating role of workforce attitudes (or workforce flexibility) on the relationship between pay plans and workforce behaviors.

*Workforce attitudes as a mediator*

Social psychologists assert that attitudes mediate the relationship between external structural factors and behaviors (Ajzen, 1991; Pratkanis *et al.*, 1989). Management scholars use this logic to investigate the mediating role of job attitudes in the pay plan → absenteeism and turnover relationship (Carsten and Spector, 1987; Farrell and Stamm, 1988; Hackett and Guion, 1985; Scott and Taylor, 1985; Steel and Ovalle, 1984). For example, several studies have examined the pay → pay satisfaction → absenteeism/turnover relationships (Judge *et al.*, 2010; Heneman and Judge, 2000). Skill-based pay plans are expected to be positively related to workforce attitudes, so we may reasonably infer that workforce attitudes would mediate the relationship between pay plans and membership behaviors. A few studies have validated this argument (Gupta *et al.*, 1986, 1992; Guthrie, 2000). Accordingly, we propose:

- H5. Workforce attitudes will mediate the relationship between pay plans and workforce membership behaviors.

*Workforce flexibility as a mediator*

As suggested above, one of the primary reasons for employing skill-based pay plans is to enhance workforce flexibility. Murray and Gerhart (1998, p. 70) argued that, “[. . .] skill-based pay’s role is to increase the value and flexibility of human resources and in turn increase productivity [. . .]”. Similarly, Shaw *et al.* (2005) found that a skill-based pay plan’s survival depends on its ability to enhance workforce flexibility with the ultimate goal of achieving higher productivity. Because workforce flexibility is associated with improved firm-specific human capital (Dierdorff and Surface, 2008; Guthrie, 2000) and an organization’s ability to optimize production (Murray and Gerhart, 1998), we can logically assume that workforce flexibility would mediate the relationship between pay plans and workforce productivity. Accordingly, we propose:

- H6. Workforce flexibility will mediate the relationship between pay plans and workforce productivity.

*Overall, success*

Improvement in workforce productivity and functional membership behaviors are the primary objectives of any pay plan (Milkovich and Newman, 2008). Thus, managers are likely to perceive that a pay plan is successful if it enhances workforce productivity and produces superior workforce membership behaviors (Shaw *et al.*, 2001, 2005).

A plan that is inconsistent with the culture and climate of the facility, however, is likely to fail (Shaw *et al.*, 2005). Thus, a pay plan must be vertically integrated with macro organizational factors (Milkovich and Newman, 2008). Factors such as an organization’s technology, culture, and leadership can create positive or negative contingencies. Pay systems are a tool for achieving an organization’s strategic goals, so they are more likely to be successful when they are consistent with the work climate/culture (Shaw *et al.*, 2001). Accordingly, we propose:

- H7a. Workforce productivity and workforce membership behaviors will be positively related to perceptions of a pay plan’s success.

*H7b.* The relationship between workforce productivity/workforce membership behaviors and perceptions of a pay plan's success will be moderated by perceived consistency of the pay plan with other organizational functions.

## Method

### *Sample*

We collected data for this study in two sets. First, in 1991, we identified 201 companies using skill-based pay systems through literature review, secondary information, professional and consulting contacts, and solicitations in three consecutive newsletters of the WorldatWork. After excluding consultants and others who failed to meet our sampling criteria, we selected 182 companies and mailed questionnaires to their top human resource or compensation managers. Of these, 97 responded (a 53 per cent response rate), providing the first data set. Second, in 1994, we drew a random sample of 752 companies from the membership of the WorldatWork to represent the diversity of compensation systems. The primary criterion for inclusion was that the facility had a compensation plan for an identifiable group of operating employees. Of the 752 companies, we eliminated 37 because they were consulting firms, had no operating employees, had gone out of business, or were similarly irrelevant. The target respondents were the top compensation managers of the remaining 715 companies. We mailed questionnaires to these managers. The questionnaires were parallel to those used in the first data set but focusing on compensation systems in general rather than skill-based pay in particular. Of those, 155 returned completed questionnaires (a 22 per cent response rate), providing a second data set of 143 usable questionnaires. The two data sets were merged for analysis.

Of the 240 facilities in the sample, 58 used job-based pay, 58 used market-based pay; 98 used skill-based pay; and the remaining used other forms of compensation. Thus, a total of 214 facilities constituted our dataset. Skill-based pay users are over-represented in the combined sample because the first data set included only skill-based pay users. Within the first (skill-based pay) data set, 77 respondents represented manufacturing industries, and 20 respondents represented service industries. These companies had been operating for an average of ten years and employed an average work-force of 474. Within the second data set (the diverse compensation system sample), 51 respondents represented manufacturing, and 104 represented service industries. The average organization in this sample employed 1,269 people and had been operating for 36 years. Thus, skill-based pay users represented younger and smaller organizations.

All compensation-related questions in both data sets focused on the primary compensation system in use for the majority of production or other first-line employees. We did this to ensure that we obtained parallel data across the great diversity of organizations and industries represented in the sample. It should be noted that all data we collected were at the facility level.

### *Measures*

The key informant of each facility provided information on all measures including the type of pay plan in use. In the first data set, the primary criterion for inclusion was the use of skill-based pay. For the second data set, respondents chose their primary pay plan from a list in the questionnaire. The primary independent variable was the basic compensation system, which included three types of pay plans: skill-based, job-based, and market-based. The compensation pay plans were dummy coded such that

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skill-based pay was used as a reference (Cohen and Cohen, 1983). Accordingly, the three pay plans resulted in two dummy-coded variables. Dummy-coded variable labeled Pay1 compared job-based pay plans with skill-based pay plans, and dummy-coded variable labeled Pay2 compared market-based pay plans with skill-based pay plans.

The dependent variables of the proposed model shown in Figure 1 are measured using items that asked respondents to indicate the extent to which their compensation plans had successfully achieved various workforce-level outcomes (on 7-point scales ranging from 1 = not at all to 7 = to a very great extent).

Items pertaining to all measures are listed in the appendix. Details about reliability, convergent validity, and discriminant validity of the measures are discussed in the Results section.

#### *Control variables*

We included two control variables in our analyses. Existing research shows that firm size may influence the ability to pay (Milkovich and Newman, 2008) and the stability of the internal labor market (Guthrie, 2000). Because type of pay plan is our independent variable, we considered it important to control firm size. Consistent with several previous investigations, the logarithm of the number of employees was used to operationalize firm size (Guthrie, 2000; Shaw *et al.*, 2005). We also included the age of the facility as a control variable. A newer facility is more likely to experiment with an innovative pay plan and may not have its pay plan well integrated into the HRM system (Shaw *et al.*, 2005). Accordingly, we considered it important to control for effects of the age of the facility.

#### *Analysis strategy*

Because of the nominal independent variable as well as significant missing data, we chose the partial least square (PLS) technique (Gefen *et al.*, 2000; Hulland, 1999; Kiers and Smilde, 2007; Tenenhaus *et al.*, 2005) using Smart PLS software (version 2.0; Ringle *et al.*, 2005) to conduct path analysis. Unlike regression analysis, the PLS technique allows researchers to examine the path model of a proposed theoretical framework using a holistic approach (Gefen *et al.*, 2000). In addition, the PLS technique concomitantly conducts factor analysis and allows a researcher to assess construct reliability, convergent validity, and discriminant validity. We also used hierarchical regressions analysis to test the mediation and moderation hypotheses (Cohen and Cohen, 1983).

## **Results**

#### *Construct reliability, convergent validity, and discriminant validity*

Using the PLS technique and factor analysis, we evaluated convergent validity, reliability, and discriminant validity. For convergent validity, all factor loadings should exceed 0.70; average variance extracted (AVE) for each construct should be more than 0.50; and the reliabilities of each construct using Cronbach's alpha should be at least 0.70 (Fornell and Larcker, 1981). Our results indicated that all factor loadings of items for each construct (see Appendix) exceeded 0.70 and the AVE for each factor was more than 0.50. In addition, Cronbach's alpha for each measure exceeded 0.70 (Table I). To test discriminant validity, we examined the square root of the AVE of each construct in comparison to the intercorrelations among constructs. Results provided in Table I support the discriminant validity of our scales, since the square root of the AVE reported in the diagonal is always higher than the off-diagonal figures in their corresponding row and column (Fornell and Larcker, 1981; Gefen and Straub, 2005).

Variable	1	2	3	Variable				
	4	5	6	7	8			
<i>Correlation matrix</i>								
1. Pay1: job-based vs skill-based pay	–							
2. Pay2: market-based vs skill-based pay	–0.36	–						
3. Workforce Productivity	–0.29	–0.28	(0.89)					
4. Consistency with organizational climate	–0.19	–0.13	0.36	(0.79)				
5. Workforce flexibility	–0.40	–0.32	0.78	0.49	(0.87)			
6. Workforce membership behaviors	–0.10	–0.17	0.50	0.31	0.47	(0.80)		
7. Overall success	–0.16	–0.21	0.44	0.46	0.57	0.35	(0.94)	
8. Workforce attitudes	–0.24	–0.27	0.65	0.50	0.71	0.48	0.61	(0.94)
Cronbach's alpha			0.73	0.79	0.95	0.75	0.93	0.88
<i>Descriptive statistics</i>								
Skill-based ( $\bar{X}$ ); $n = 98$			4.23	5.01	5.14	3.15	5.27	4.72
Skill-based (SD)			1.44	1.13	1.28	1.56	1.04	1.15
Job-based ( $\bar{X}$ ); $n = 58$			2.62	3.69	2.95	2.55	4.47	3.58
Job-based (SD)			1.06	1.10	1.19	1.17	1.27	1.12
Market-based ( $\bar{X}$ ); $n = 58$			2.64	3.81	3.15	2.39	4.47	3.52
Market-based (SD)			1.39	0.92	1.21	1.11	1.07	1.14

**Table I.** Descriptive statistics and correlations among study variables

**Notes:** All correlations above 0.14 are significant at: 0.05; pay plans are dummy-coded such that skill-based pay is the reference group; pay plan variable (1) is job-based pay (with skill-based pay as a reference) and pay plan variable (2) is market-based pay (with skill-based pay as reference); diagonal numbers are square roots of AVE

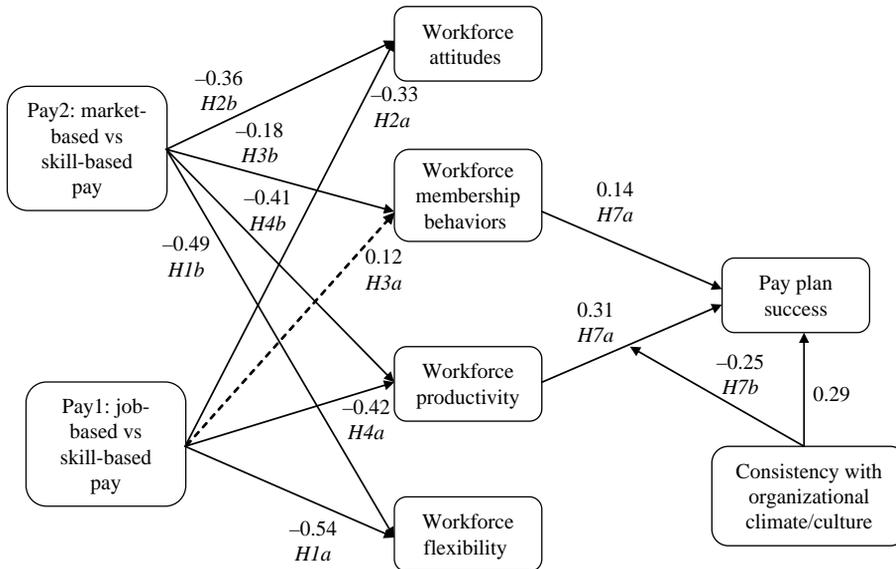
*Descriptive and correlational results*

Table I also reports descriptive statistics and correlations. Generally, skill-based pay, as compared to job-based or market-based pay, was particularly strongly correlated with workforce attitudes and workforce flexibility. A comparison of mean values also highlighted the superiority of skill-based pay in relation to these two specific outcomes. The same was not true when market-based pay was compared with job-based pay.

*Path analysis and hypotheses testing*

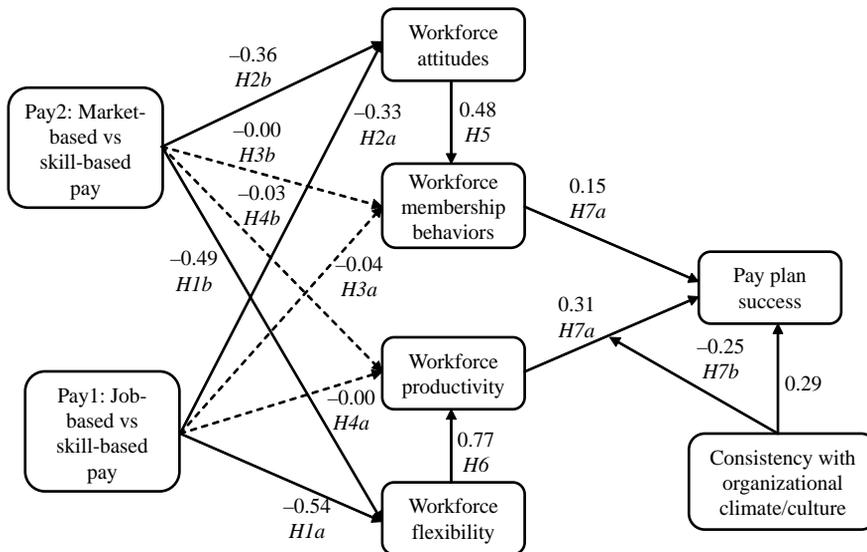
We used PLS to test our hypotheses by means of two path analysis models shown in Figures 2 and 3. Figure 2 shows the main effects of pay plans. Figure 3 includes mediating effects of workforce attitudes on workforce membership behaviors, and of workforce flexibility on workforce productivity. We used a bootstrapping procedure, with 500 resamples, to determine the significance of the paths. In both figures, dotted lines indicate nonsignificant paths.

Recall that significant path coefficients for Pay1 in Figure 2 suggest that, compared with job-based pay plans, skill-based pay plans are more positively associated with endogenous constructs hypothesized in *H1a* to *H4a*. Similarly, significant path coefficients for Pay2 in Figure 2 suggest that, compared with market-based pay plans, skill-based pay plans are positively related to endogenous constructs hypothesized in *H1b* to *H4b*. The results shown in Figure 2 indicate that skill-based pay plans are more positively related to workforce attitudes, workforce flexibility, and workforce productivity than are job-based pay plans. Thus, *H1a*, *H2a*, and *H4a* were supported. Since no significant difference appeared between skill-based pay plans and job-based pay plans in terms of their relationships with membership behaviors,



**Notes:** (1)  $\longrightarrow$  = significant path coefficient;  $\dashrightarrow$  = nonsignificant path coefficient; (2) pay was dummy coded such that it compares job-based or market-based pay with skill-based pay; (3) for clarity, control variables and their associated path coefficients have been omitted from figure 2

**Figure 2.** Structural equation modeling for main effects



**Notes:** (1)  $\longrightarrow$  = significant path coefficient;  $\dashrightarrow$  = nonsignificant path coefficient; (2) pay was dummy coded such that it compares job-based or market-based pay with skill-based pay; (3) for clarity, control variables and their associated path coefficients have been omitted from figure 3

**Figure 3.** Test of mediation and moderation hypotheses

*H3a* was not supported. Similarly, the results in Figure 2 show that skill-based pay plans, compared to market-based pay plans, are associated with workforce attitudes, workforce flexibility, workforce membership behaviors, and workforce productivity. Thus, *H1b*, *H2b*, *H3b*, and *H4b* were supported[3].

Results shown in Figure 3 suggest that workforce attitudes are significantly related to membership behaviors. In the presence of the path between workforce attitudes and workforce membership behaviors, the path coefficient between skill-based pay and workforce membership behaviors was nonsignificant. On the other hand, the use of skill-based pay, when compared with market-based pay, was related to membership behaviors (please refer to Figure 2). The mediating role of attitudes, though conforming to prediction, is ambiguous and provides limited support for *H5*. Stronger support was evident for *H6* – when the path between workforce flexibility and productivity is incorporated into the model, the path coefficient between skill-based pay use and workforce productivity becomes nonsignificant. Thus, workforce flexibility mediates the relationship between skill-based pay use and workforce productivity.

Figures 2 and 3 also suggest that a pay plan's perceived success is positively correlated with membership behaviors (i.e. lower absenteeism, lower turnover, and superior ability to attract talent), higher productivity, and pay plan's consistency with the facility's work climate/culture. In addition, a facility's work climate/culture moderated the relationship between workforce productivity and the pay plan's perceived success. Thus, *H7a* and *H7b* were supported.

#### *Hierarchical regression analysis*

To better understand the nature of the hypothesized relationships, we also tested mediation *H5* and *H6* using hierarchical regression analysis. The results are shown in Table II. We followed Baron and Kenny's (1986) recommendations for examining the mediating roles of workforce attitudes and workforce flexibility (refer to *H5* and *H6* and Figure 1). According to the recommendations, for mediation to be established:

- (1) the independent variable (skill-based pay when compared with job-based or market-based pay) must be related to the dependent variable (workforce membership behaviors or workforce productivity);
- (2) the independent variable (i.e. skill-based pay when compared with job-based or market-based pay) must be related to the mediating variable (workforce attitudes or workforce flexibility);
- (3) the mediator (workforce attitudes or workforce flexibility) must be related to the dependent variable (workforce membership behaviors or workforce productivity, respectively); and
- (4) the effect of the independent variable on the dependent variable must become nonsignificant (full mediation) or be reduced (partial mediation) when the mediator is entered into the hierarchical regression equation.

Our steps for testing mediations are detailed in Table II. We also controlled for the facility's size and age. As can be seen from Table II, workforce flexibility mediates the effects of skill-based pay on workforce productivity. In terms of the mediating role of workforce attitudes, the hierarchical regression analysis suggested that skill-based pay use, when compared with job-based pay use, is nonsignificantly related to workforce membership behaviors ( $p = 0.26$ ), but significantly related with workforce attitudes.

Mediation steps	Model 1		Model 2		Model 3		Model 4		Model 1		Model 2	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>
<i>Dependent variable: workforce membership behaviors</i>												
Step 1: Age	-0.16*	-2.1	-0.13	-1.6	-0.07	-0.9	-0.07	-0.9	-0.23**	-3.0	-0.13	-1.8
Size	-0.18*	-2.4	-0.15	-2.0	-0.13	-1.8	-0.13	-1.8	-0.12	-1.6	-0.05	-0.07
Step 2a: Job based <sup>a</sup>			-0.09	-1.1			0.04	0.4			-0.33***	-4.5
Market-based			-0.17*	-2.1			-0.02	-0.3			-0.38***	-5.4
Step 2b: Attitude			0.40	5.8			0.40***	5.3				
Step 3: Attitude												
$\Delta R^2$	0.08		0.14		0.12		0.12		0.09		0.14	
<i>F</i> for $\Delta R^2$	8.5***		33.4		28.9***		28.9***		9.2***		17.5***	
Overall $R^2$	0.08		0.10		0.22		0.22		0.09		0.23	
Overall <i>F</i>	8.5***		5.5***		17.8***		10.7***		9.2***		14.1***	
<i>Df</i>	2, 186		4, 184		3, 185		5, 183		2, 189		4, 187	
<i>Dependent variable: workforce productivity</i>												
Step 1: Age	-0.22**	-2.8	-0.09	-1.3	0.03	0.5	0.03	0.6	-0.30***	-4.0	-0.15*	-2.5
Size	-0.10	-1.4	-0.02	-0.2	-0.03	-0.5	-0.02	-0.4	-0.09	-1.2	0.02	0.2
Step 2a: Job based			-0.44***	-6.2			-0.02	-0.3			-0.55***	-8.9
Market-based			-0.42***	-5.9			-0.03	-0.4			-0.51***	-8.3
Step 2b: Flexibility			0.79***	15.9	0.77***	12.6						
Step 3: Flexibility												
$\Delta R^2$	0.08		0.20		0.53		0.33		0.12		0.32	
<i>F</i> for $\Delta R^2$	7.7***		25.8***		254		158		13.0***		52.4***	
Overall $R^2$	0.08		0.28		0.61		0.61		0.12		0.44	
Overall <i>F</i>	7.7***		17.8***		96.7***		57.5***		13.0***		36.3***	
<i>Df</i>	2, 186		4, 184		3, 185		5, 183		2, 187		4, 185	

**Notes:** Significance at: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ; standardized regression coefficients ( $\beta$ ) are shown for OLS equations; <sup>a</sup>pay plans were dummy coded such that skill-based pay plans were used as the reference group to compare it with job-based pay plans and market-based pay plans

**Table II.**  
Tests of mediation effects  
using hierarchical  
regression analysis

On the other hand, skill-based pay use, when compared with market-based pay use, is significantly related to workforce membership behaviors ( $p = 0.034$ ) and workforce attitudes. Thus, when comparing skill-based pay plans with job-based pay plans, we did not find support for Baron and Kenny's (1986) recommended condition (1). Accordingly, to some scholars, fulfillment of condition (1) is not critical and mediation is implied when conditions (2) and (3) are met (Kenny *et al.*, 1998). Thus, together, the results of PLS and hierarchical regression analysis offer reasonable support for *H5*, particularly when skill-based pay plans are compared with market-based pay plans. Finally, we also tested moderating effects of workforce productivity and consistency of the pay plan with the facility's climate/culture on the success of the pay plan. Hierarchical regression analyses (Cohen and Cohen, 1983) provided support for *H7b*.

### Discussion

This study represents an initial attempt to provide empirical evidence about the hypothesized benefits of skill-based pay systems. These compensation systems are believed to promote workforce membership behaviors and enhance employee performance, but empirical data on these claims have been virtually nonexistent. Our analyses show that, indeed, skill-based pay systems are at least perceived to produce superior outcomes. In some ways, this finding confirms the obvious, but it is important for research to validate the soundness of "self-evident truths."

Our results, however, suggest important roles of workforce attitudes and workforce flexibility in achieving desired relationships between pay plans and workforce membership behaviors and workforce productivity, respectively. Both workforce attitudes and workforce flexibility mediate the effects of pay plans on these outcomes. This suggests that if skill-based pay plans are not positively related to workforce attitudes or workforce flexibility, they might not produce desired membership behaviors or productivity. Future research should focus on clarifying conditions under which skill-based pay plans do not predict workforce attitudes or workforce flexibility.

The results of the current study also point to at least three factors that strongly contribute to the perceived success of pay plans: higher workforce productivity, superior workforce membership behaviors, and better consistency of the pay plan with the facility's climate/culture.

Arguably the most interesting result is that *H7b* is completely confirmed. We looked at the moderating role of work climate/culture on the relationship between workforce productivity and a pay plan's success. It appears that irrespective of the type of pay plan an organization intends to use, it is crucial that the pay plan must be vertically consistent with the organization's work climate/culture.

While our results are based on analyses of data at facility-level, the findings have implications for the management of employees as well. Results suggest that, based on key-informants perceptions, skill-based pay plans do enhance employees attitudes, membership behaviors, and productivity.

#### *Practical, theoretical, and societal implications*

On a practical note, compared to traditional pay plans, skill-based pay plans are expected to be more useful in certain situations (Ledford, 1991; Milkovich and Newman, 2008). Skill-based pay plans are specifically valuable in helping acquire critical but infrequently used skills[4]. Certain jobs, such as nuclear plant operators or nursing services,

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require performance of tasks (e.g. infrequent plant maintenance) based on learning and maintenance of perishable but critical skills (Dierdorff and Surface, 2008). Traditional pay plans, on the other hand, might be more valuable when administrative costs of a pay plan are of concern (Milkovich and Newman, 2008).

Our results points to several implications for theory building and future research. First, future research should look into specific factors that allow researchers to understand efficacy of market-based pay as compared to job-based pay better. While our data did not suggest significant differences, it is quite possible that a carefully developed framework that incorporates appropriate strategic and contextual factors would allow teasing out of specific conditions for deploying different types of pay plans. Future researchers should also take a more strategic view of theory building for deploying different types of pay plans. In addition, future research should employ quantitative data to operationalize facility level variables such as productivity, costs, and success.

This study also points to valuable implications for the society. As the workforce becomes more skill-oriented and as jobs become differentiated based on highly complex services and products, an organization's pay plan should strategically target necessary skills requirements. Organizations may no longer have the luxury of only deploying market-based pay plans. Pay plans must effectively employ and motivate highly skilled workforce of developed economies.

### *Limitations*

In general, this study offers some interesting insights into traditional and nontraditional compensation systems. Of course, in considering the results, some shortcomings of the study should be considered. The study is based on key informant reports, with the inherent disadvantages of a mono-method study. We did not have "[...] temporal, proximal, or psychological separation between the measurement of the predictor and criterion variables [...]" (Podsakoff *et al.*, 2003, p. 888). It must also be noted that we used Baron and Kenny's (1986) method to test mediation. This method is inherently appropriate to test causal paths (Stone-Romero and Rosopa, 2008). Ours is a field study and lacks controls needed to claim causal relationship. Moreover, we may not have included all relevant mediators in our mediation model and this may have "[...] produced biased estimates of regression coefficients" (Stone-Romero and Rosopa, 2008, p. 343)[5]. Some measures are based on only two items, raising some concerns about their psychometric soundness. Perhaps, a serious concern is that we omitted "bottom-line" outcomes such as financial performance from our analysis. The limitations of our data set preclude us from achieving this ideal. Fewer than 15 per cent of respondents offered quantitative data on financial performance. Because the data are collected at the facility level, we cannot use archival data to gather additional information through secondary sources. Our results are not anomalous, which counteracts these limitations; rather, they follow the trend of other research in the area using different data sets (Dierdorff and Surface, 2008; Gupta *et al.*, 1986; Ledford, 1991; Murray and Gerhart, 1998; Parent and Weber, 1994; Shaw *et al.*, 2005, 2001).

Overall, it is reassuring to discover empirically that compensation plans achieve the goals they are designed to achieve. Skill-based pay is expected to confer such advantages as workforce flexibility, productivity, and attitudes, and indeed it does so. Furthermore, the results also suggest that the type of organization and the type of job may be less important than issues of design and fit in determining the effectiveness of a compensation system.

In sum, this study offers initial empirical data about the relative effectiveness of compensation systems on mid-range outcomes. We hope that future research will build on this research, minimizing some of its limitations while simultaneously extending it to bottom-line outcomes.

### Notes

1. We thank the editor and a reviewer for this suggestion.
2. We thank a reviewer for this suggestion.
3. A supplemental analysis suggested that job-based pay plans and market-based pay plans did not differ significantly in terms of each pay plans' relationships with workforce attitudes, flexibility, membership behaviors, and productivity.
4. We thank a reviewer for this suggestion.
5. We thank the editor for this suggestion.

### References

- Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50, pp. 179-211.
- Al-Waqfi, M.A. and Agarwal, N.C. (2006), "Determinants of role orientation and organisational commitment under skill-based pay: a path model", *International Journal of Human Resources Development and Management*, Vol. 6, pp. 4-21.
- Baron, R.M. and Kenny, D.A. (1986), "The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51, pp. 1173-82.
- Barrett, G.V. (1991), "Comparison of skill-based pay with traditional job evaluation techniques", *Human Resource Management Review*, Vol. 1, pp. 97-105.
- Becker, G.S. (1975), *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, The University of Chicago Press, Chicago, IL.
- Carsten, J.M. and Spector, P.E. (1987), "Unemployment, job satisfaction, and employee turnover: a meta-analytic test of the Muchinsky model", *Journal of Applied Psychology*, Vol. 72, pp. 374-81.
- Cohen, J. and Cohen, P. (1983), *Applied Multiple Regression/correlation Analysis for the Behavioral Sciences*, 2nd ed., Lawrence Erlbaum, Hillsdale, NJ.
- Dierdorff, E.C. and Surface, E.A. (2008), "If you pay for skills, will they learn? Skill change and maintenance under a skill-based pay system", *Journal of Management*, Vol. 34, pp. 721-43.
- Dobbins, C., Cardy, R. and Carson, K. (1991), "Examining fundamental assumptions: a contrast of person and system approaches to human resource management", in Ferris, G.R. and Rowland, K. (Eds), *Research in Personnel and Human Resources Management*, Vol. 9, JAI, Greenwich, CT, pp. 1-38.
- Dulebohn, J.H. and Werling, S.E. (2007), "Compensation research past, present, and future", *Human Resource Management Review*, Vol. 17, pp. 191-207.
- Farrell, D. and Stamm, C.L. (1988), "Meta-analysis of the correlates of employee absence", *Human Relations*, Vol. 41, pp. 211-27.
- Fornell, C.R. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18, pp. 39-50.

- Gefen, D. and Straub, D.W. (2005), "A practical guide to factorial validity using PLS-graph: tutorial and annotated example", *Communications of the AIS*, Vol. 16, pp. 91-109.
- Gefen, D., Straub, D.W. and Boudreau, M. (2000), "Structural equation modeling and regression: guidelines for research practice", *Communication of the AIS*, Vol. 4, pp. 1-78.
- Gerhart, B. and Milkovich, G.T. (1992), "Employee compensation: research and practice", in Dunnette, M.D. and Hough, L.M. (Eds), *Handbook of Industrial and Organizational Psychology*, 2nd ed., Vol. 3, pp. 481-570.
- Gerhart, B., Trevor, C.O. and Graham, M.E. (1996), "New directions in compensation research: synergies, risk, and survival", in Ferris, G.R. and Rowland, K. (Eds), *Research in Personnel and Human Resources Management*, Vol. 14, JAI, Greenwich, CT, pp. 143-203.
- Gomez-Mejia, L.R. and Balkin, D.B. (1992), *Compensation, Organizational Strategy, and Firm Performance*, South-Western, Cincinnati, OH.
- Gupta, N. (1997), "Rewarding skills and competencies in the public sector", in Risher, H. and Fay, C. (Eds), *Rewarding Public Employees: A Handbook for Rethinking Government Pay Programs*, Jossey-Bass, San Francisco, CA, pp. 125-44.
- Gupta, N. and Jenkins, G.D. Jr (1991), "Practical problems in using job evaluation systems to determine compensation", *Human Resource Management Review*, Vol. 1, pp. 133-44.
- Gupta, N. and Shaw, J.D. (2001), "Successful skill-based pay plans", in Fay, C.H., Knight, D. and Thompson, M.A. (Eds), *The Executive Handbook on Compensation: Linking Strategic Rewards to Business Performance*, The Free Press, New York, NY, pp. 513-26.
- Gupta, N., Jenkins, G.D. Jr and Curington, W.P. (1986), "Paying for knowledge: myths and realities", *National Productivity Review*, Vol. 5, pp. 107-24.
- Gupta, N., Schweizer, T.P. and Jenkins, G.D. Jr (1987), "Pay-for-knowledge compensation systems: hypotheses and survey results", *Monthly Labor Review*, Vol. 110, pp. 40-3.
- Gupta, N., Ledford, G.E. Jr, Jenkins, G.D. Jr and Doty, D.H. (1992), "Survey-based prescriptions for skill-based pay", *ACA Journal*, Vol. 1, pp. 48-59.
- Guthrie, J.P. (2000), "Alternative pay practices and employee turnover: an organization economics perspective", *Group & Organization Management*, Vol. 25, pp. 419-39.
- Hackett, R.D. and Guion, R.M. (1985), "A reevaluation of the absenteeism-job satisfaction relationship", *Organizational Behavior and Human Decision Processes*, Vol. 35, pp. 340-81.
- Hackman, J.R. and Oldham, G.R. (1980), *Work Redesign*, Addison-Wesley, Reading, MA.
- Helson, H. (1947), "Adaptation-level as frame of reference for prediction of psychophysical data", *American Journal of Psychology*, Vol. 60, pp. 1-29.
- Heneman, H.G. III (1985), "Pay satisfaction", in Rowland, K.M. and Ferris, G.R. (Eds), *Research in Human Resource Management*, Vol. 3, JAI, Greenwich, CT, pp. 115-40.
- Heneman, H.G. III and Judge, R. (2000), "Compensation attitudes", in Rynes, S.L. and Gerhart, B. (Eds), *Compensation in Organizations: Current Research and Practice*, Jossey-Bass, San Francisco, CA, pp. 61-102.
- Hill, F.S., Bergmann, T.J. and Scarpello, V.G. (1994), *Compensation Decision Making*, Dryden, Fort Worth, TX.
- Hulland, J. (1999), "Use of partial least squares (PLS) in strategic management research: a preview of four recent studies", *Strategic Management Journal*, Vol. 20, pp. 195-204.
- Jenkins, G.D. Jr and Gupta, N. (1985), "The payoffs of paying for knowledge", *National Productivity Review*, Vol. 4, pp. 121-30.
- Jenkins, G.D. Jr, Ledford, G.E. Jr, Gupta, N. and Doty, D.H. (1992), *Skill Based Pay: Practices, Payoffs, Pitfalls, and Prescriptions*, Scottsdale, AZ.

- Judge, T.A., Piccolo, R.F., Podsakoff, N.P., Shaw, J.C. and Rich, B.L. (2010), "The relationship between pay and job satisfaction: a meta-analysis of the literature", *Journal of Vocational Behavior*, Vol. 77 No. 2, pp. 157-67.
- Kenny, D.A., Kashy, D.A. and Bolger, N. (1998), "Data analysis in social psychology", in Gilbert, D., Fiske, S. and Lindzey, G. (Eds), *The Handbook of Social Psychology*, 4th ed., Vol. 1, pp. 233-65.
- Kiers, H.A.L. and Smilde, A.K. (2007), "A comparison of various methods for multivariate regression with highly collinear variables", *Statistical Methods and Applications*, Vol. 16, pp. 193-228.
- Lawler, E.E. (1987), "Strategic design of reward systems", in Steers, R.M. and Porter, L.M. (Eds), *Motivation and Work Behaviors*, 4th ed., McGraw-Hill, New York, NY.
- Lawler, E.E. (1990), *Strategic Pay: Aligning Organizational Strategies and Pay Systems*, Jossey-Bass, San Francisco, CA.
- Lawler, E.E. (1991), "Paying the person: a better approach to management", *Human Resource Management Review*, Vol. 1, pp. 145-54.
- Lawler, E.E. and Jenkins, G.D. Jr (1992), "Strategic reward systems", in Dunnette, M.D. and Hough, L.M. (Eds), *Handbook of Industrial and Organizational Psychology*, 2nd ed., Vol. 3, pp. 1009-55.
- Lawler, E.E., Mohrman, S.A. and Ledford, G.E. Jr (1992), *Employee Involvement and Total Quality Management*, Jossey-Bass, San Francisco, CA.
- Ledford, G.E. Jr (1990), "The design of skill-based pay plans", in Rock, M.L. and Berger, L.A. (Eds), *The Compensation Handbook: A State-of the Art Guide to Compensation Strategy and Design*, McGraw-Hill, New York, NY.
- Ledford, G.E. Jr (1991), "Three case studies on skill based pay: an overview", *Compensation & Benefits Review*, Vol. 23, pp. 11-23.
- Ledford, G.E. Jr (1995), "Paying for the skills, knowledge, and competencies of knowledge workers", *Compensation & Benefits Review*, Vol. 27, pp. 55-62.
- Lee, C., Law, K. and Bobko, P. (1999), "The importance of justice perceptions on pay effectiveness: a two-year study of a skill-based pay plan", *Journal of Management*, Vol. 25, pp. 851-73.
- Mahoney, T.A. (1991), "Job evaluation: endangered species or anachronism?", *Human Resource Management Review*, Vol. 1, pp. 155-62.
- Milkovich, G.T. (1988), "A strategic perspective on compensation management", in Ferris, G.R. and Rowland, K. (Eds), *Research in Personnel and Human Resources Management*, Vol. 6, JAI, Greenwich, CT, pp. 263-88.
- Milkovich, G.T. and Newman, J.M. (2008), *Compensation*, McGraw Hill-Irwin, New York, NY.
- Murray, B. and Gerhart, B. (1998), "An empirical analysis of a skill-based pay program and plant performance outcomes", *Academy of Management Journal*, Vol. 41, pp. 68-78.
- Parent, K.J. and Weber, C.L. (1994), "Case study: does paying for knowledge pay off?", *Compensation & Benefits Review*, Vol. 26, pp. 44-50.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88, pp. 879-903.
- Pratkanis, A.R., Breckler, S.J. and Greenwald, A.G. (1989), *Attitude Structure and Function*, Erlbaum, Hillsdale, NJ.

- Ringle, C.M., Wende, S. and Will, A. (2005), "SmartPLS 2.0(beta)", available at: [www.smartpls.de/](http://www.smartpls.de/) (accessed 28 March 2010).
- Scott, D.K. and Taylor, G.S. (1985), "An examination of conflicting findings on the relationship between job satisfaction and absenteeism: a meta-analysis", *Academy of Management Journal*, Vol. 28, pp. 599-612.
- Shaw, J.D., Gupta, N. and Delery, J.E. (2001), "Congruence between technology and compensation systems: implications for strategy implementation", *Strategic Management Journal*, Vol. 22, pp. 379-86.
- Shaw, J.D., Gupta, N., Mitra, A. and Ledford, G.E. Jr (2005), "Success and survival of skill-based pay plans", *Journal of Management*, Vol. 31, pp. 28-49.
- Steel, R.P. and Ovalle, N.K. II (1984), "A review and meta-analysis of research on the relationship between behavioral intentions and employee turnover", *Journal of Applied Psychology*, Vol. 69, pp. 673-86.
- Stone-Romero, E.F. and Rosopa, P.J. (2008), "The relative validity of inferences about mediation as a function of research design characteristics", *Organizational Research Methods*, Vol. 11, pp. 326-52.
- Sweeney, P.D., McFarlin, D.B. and Inderrieden, E.J. (1990), "Using relative deprivation theory to explain satisfaction with income and pay level: a multistudy examination", *Academy of Management Journal*, Vol. 33, pp. 423-36.
- Tenenhaus, M., Vinzi, V.E., Chatelin, Y-M. and Lauro, C. (2005), "PLS path modeling", *Computational Statistics and Data Analysis*, Vol. 48, pp. 159-205.
- Tosi, H. and Tosi, L. (1986), "What managers need to know about knowledge-based pay", *Organizational Dynamics*, Vol. 14, pp. 52-64.
- Uen, J.F. and Chien, S.H. (2004), "Compensation structure, perceived equity, and individual performance of R&D professionals", *Journal of American Academy of Business*, Vol. 4, pp. 401-5.
- Williamson, O.E. (1979), "Transaction-cost economics: the governance of contractual relations", *Journal of Law & Economics*, Vol. 22, pp. 233-62.

## Appendix

To what extent has your compensation plan been successful in achieving the following outcomes (1 = not at all to 7 = to a very great extent):

- Workforce attitudes (2 items):
  - Improved employee satisfaction.
  - More employee commitment.
- Workforce membership behaviors (3 items):
  - Reduced voluntary turnover.
  - Fewer layoffs.
  - Lower absenteeism.
- Workforce productivity (2 items):
  - Increased output per hour worked.
  - Fewer bottlenecks in production or service delivery.
- Workforce Flexibility (7 items):
  - Grater adaptability of employees to changing production needs.
  - Increased effectiveness of work teams.

More flexibility in job assignments.  
Increased employee versatility.  
Better use of work technology.  
Greater workforce flexibility.  
Enhanced employee capability for self-management.

Compensation plans are intended to be consistent with many aspects of organizational functioning. To what extent is your current compensation plan consistent with the following aspects of your facility's functioning? (1 = not at all to = to a very great extent):

- Consistency with Organizational Functions (4 items):

Management style.

Technology.

Organizational culture.

The ability to recruit the right kind of new employees.

- Pay Plan Success (2 items):

Taking everything into consideration, how successful would you say your compensation plan has been? (1 = not at all successful and 7 = very successful).

How would you rate the overall success of your compensation system? (1 = very unsuccessful and 7 = very successful).

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