PAY SATISFACTION AND ORGANIZATIONAL OUTCOMES

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Using multi level and multi method data, we investigated the relationship between pay satisfaction and outcomes at the organizational level of analysis. Individual-level survey data on pay satisfaction (including satisfaction with pay level, satisfaction with pay structure, satisfaction with pay raises, and benefits) were collected from 6,394 public school teachers. Organizational-level outcome data, both survey and archival, were collected from the 117 public school districts employing these teachers. With respect to its influence on organizational outcomes, pay satisfaction was positively related to school district-level academic performance and negatively related to average teacher intention to quit. We also explored the relationship between district-level union satisfaction and pay satisfaction, which was found to be positive. We discuss implications of our findings for for-profit companies that are knowledge based and human capital intensive (e.g., the service sector) and address possible future directions for research on pay satisfaction.

The study of employee satisfaction with pay and benefits is an area of longstanding interest to psychologists. The earliest writings on the topic of job satisfaction emphasized the critical role that compensation played in employees' affective reactions to their jobs. Hoppock's (1935) seminal study of job satisfaction revealed that dissatisfaction with wages was the most important reason advanced for voluntary separation across a broad array of occupations. His study of teachers determined that the earnings of teachers less satisfied than average were 56% below that of teachers more satisfied.

It has been during the past 3 decades, for instance, that pay satisfaction has become an intensive area of inquiry. Early pay satisfaction research focused on the antecedents of pay satisfaction, and this focus resulted in several theoretical models of pay satisfaction (e.g., Lawler, 1971). The development of the Pay Satisfaction Questionnaire (PSQ) by Heneman and Schwab (1979, 1985) led to considerable interest in the measurement of pay satisfaction, and research on the PSQ-dominated pay satisfaction research from the mid-1980s to the mid-1990s (Ash, Dreher, & Bretz, 1987; Carraher & Buckley, 1996; Judge, 1993; Judge & Welbourne, 1994; Mulvey, Miceli, & Near, 1992; Orpen & Bonnici, 1987; Scarpello, Huber, & Vandenberg, 1988).

Further evidence has indicated that pay dissatisfaction is related to reduced levels of performance (e.g., Bretz & Thomas, 1992), as well as to a number of indicators of withdrawal, such as lateness (Koslowsky, Sagie, Krausz, & Singer, 1997), turnover and turnover intentions (Motowidlo, 1983; Trevor, Gerhart, & Boudreau, 1997), absence (Weiner, 1980), and theft (Greenberg, 1993). As Heneman and Judge (2000) concluded, "Research has unequivocally shown that pay dissatisfaction can have important and undesirable impacts on numerous employee outcomes" (p. 85).

Overview and Contribution of the Present Study

The purpose of this study was to examine the linkage between pay satisfaction and performance outcomes at the organizational level of analysis. Indeed, it is striking to compare the level of attention researchers have paid to the link between pay satisfaction and outcomes at the individual level to the neglect of this linkage at the organizational level of analysis (Heneman & Judge, 2000). To this extent, our study contributes to the research literature on pay satisfaction in several unique ways. For instance, in measuring pay satisfaction we examined its constituent dimensions, namely satisfaction with pay level, benefits, pay structure, and pay raises (Weiss, Dawis, England, & Lofquist, 1967). We tested measurement models to examine the behavior of the four dimensions of pay satisfaction such as whether the

four dimensions individually are associated with organizational outcomes or whether the four dimensions contribute to an overall pay satisfaction construct that is associated with outcomes. We are not aware of previous empirical work that has studied these four dimensions at the organizational level of analysis.

We are aware of only two previous studies, Griffin, Mathieu, and Jacobs (2001) and Schneider, Hanges, Smith, and Salvaggio (2003), that linked pay satisfaction to outcomes at the organizational level of analysis. The Griffin et al. (2001) study, nevertheless, did not examine the four dimensions of pay satisfaction. Their study investigated the effect of pay satisfaction on teachers' perceptions of local community support for education and found that pay satisfaction was a positive predictor of community support. Griffin and his colleagues were limited by use of self-reports for measuring organizational outcomes. By contrast, our study used both archival and self-report outcome measures. In particular, in exploring the linkage between pay satisfaction to organizational outcomes in the context of public school districts, we used two objective indicators of organizational performance, district-level student academic performance and student dropout rate, as well as a survey-based employee outcome measure, namely teacher turnover intentions. Moreover, we went beyond previous research by studying union satisfaction as an antecedent of pay satisfaction. Earlier research and theory drawing upon data from public education (e.g., Griffin, Tesluk, & Jacobs, 1995; Griffin et al., 2001) did not study antecedents of pay satisfaction.

The Schneider et al. (2003) study combined both satisfaction survey and organizational financial performance data. Their study was important because it used longitudinal data that permitted the authors to test the direction of causality between satisfaction and performance. Although our study was cross sectional, it had the advantage of having a larger number of observations (117 organizations vs. 35 in the Schneider et al. study) and a greater number of measures that allowed us to use structural equation modeling to examine the relationship between pay satisfaction and organizational outcomes. Schneider et al. (2003) could not perform tests of such models because of the nature of their data (i.e., their results were presented in the form of correlation coefficients not structural models). In addition, unlike Schneider et al. (2003), our data permitted us to use extensive control variables. Furthermore, our study used a total of 11 items to assess a broad range of compensation-related satisfaction (e.g., pay level, pay raises, and benefits). The Schneider et al. (2003) study, by contrast, assessed a narrower range of satisfaction with pay; their measure used two items, namely respondents' comparison of pay with others in similar jobs and respondents' rating of the amount of their pay.

Theoretical Basis for the Relationship Between Pay Satisfaction
and Organizational Outcomes

Exploration of the pay satisfaction–organizational outcome linkage is a relatively new area of inquiry. In this section, we posit a relationship between aggregate pay satisfaction and organizational performance based on a three-point argument, where each point builds on the other. The three points, upon which we elaborate are (a) individual pay satisfaction/dissatisfaction leads to differential individual behavioral outcomes; (b) these differential individual behavioral outcomes become shared and produce an emergent collective structure that results in either functional or dysfunctional organizational attitudes, norms, and behaviors; and (c) the constructive or destructive behavioral-based, collective attitudes, norms, and behaviors will subsequently impact organizational performance and functioning.[1]

Individual Pay Satisfaction and Differential Individual
Behavioral Outcomes

As noted above, there are studies supporting a link between pay satisfaction and various behavioral individual-level outcomes. Further supporting the link between pay satisfaction and outcomes at the individual level of analysis are equity models of pay satisfaction (and their close derivatives, discrepancy models—see Heneman, 1985, for a review). Such models stipulate that individuals form judgments of pay satisfaction by comparing their outcome (pay) to input ratio relative to the ratios for comparison others. When an individual's outcome/input ratio is below that of comparison others, the individual may respond by lowering his/her level of effort, thereby bringing his/her ratio closer in line with the referent. The effects of under reward, and their refinements as expressed in justice theory (Heneman & Judge, 2000), have received considerable support in the literature in demonstrating the behavioral implications of perceived injustice in reward allocation (Greenberg & Wiethoff, 2001). Therefore, both theory and empirical evidence suggest that there are behavioral implications resulting from pay satisfaction or dissatisfaction (Gerhart & Rynes, 2003).

How Differential Individual Behavioral Outcomes Become Shared
and Produce Organizational-Level Norms and Behaviors

Given the linkage between individual-level pay satisfaction and individual-level behaviors (Heneman & Judge, 2000), the question then becomes: Do these individual-level attitudes and behaviors become

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[1]We thank an anonymous reviewer for suggesting this organizing framework.

collectivized and, if so, how? Multi level theory suggests that aggregated or collective constructs emerge through collective actions (Morgeson & Hoffmann, 1999). Morgeson and Hoffman drew upon Weick (1979) in arguing that collective structures can occur through a process termed "double interact." A double interact can occur when one employee makes a statement to which another employee responds; in turn, the first employee responds back. This reciprocal interaction can serve to form collective attitudes and perceptions. As Morgeson and Hoffmann (1999) point out, "Collective action has a structure that inheres in the double interact rather than within either of the individuals involved" (p. 252).

A multi level theoretical lens suggests how pay satisfaction can emerge as a collective belief within an organization. For example, the reduced role of competitive market forces makes social comparison processes in non profit organizations especially important. The social comparison of salaries during the process of public sector wage negotiations, for example, is common as "unions and employers frequently allude to salaries paid to workers in other municipalities and to other types of workers in the same municipality" (Babcock, Wang, & Lowenstein, 1996, p. 2). Moreover, this process operates in public school districts whereby communication promotes the formation of shared beliefs among teachers concerning pay satisfaction. Announcements concerning pay agreements often are used to convince school district union members that their salaries are fair and equitable. For example, Pennsylvania and Pittsburgh Federation of Teachers president, Albert Fondy, in describing a new contract agreement with the Pittsburgh public schools, emphasized that the new contract was comparable to others reached in local districts (Lee, 1995). As Greenbaum (2002) noted, "Such a settlement sends a message to the teachers that they are being paid fairly and to the parents that their children will be taught by reasonably compensated teachers. . ." (p. 70).

These communications and interactions at the school district level can create double interactions as teachers respond to communication about the adequacy of pay and benefits within the district. Consequently, teacher attitudes concerning pay and the actions taken by teacher union members can converge to form collective beliefs through the process of double interacts. These collective beliefs can, in turn, impact teacher behavior such as the case when teachers who are more satisfied with their pay feel inclined to collaborate with other teachers on pedagogical techniques, thereby enhancing the academic success of their students.

Collective Norms, Attitudes, and Behaviors and Organizational Performance and Functioning

Having argued that individual-level individual pay satisfaction is associated with individual-level outcomes, and that individual-level attitudes

and behaviors become shared and produce an emergent collective structure of attitudes, norms, and behaviors, we now turn to the question: Does this collective structure impact organizational outcomes?

Collective attitudes, norms, and behaviors would be expected to impact organizational functioning to the extent these attitudes, norms, and behaviors are (a) important and (b) sufficiently broad. For example, an organization's employees may have a collective norm to wear a black shirt and khaki pants, but this would seem unlikely to impact organizational performance. In a similar fashion, members of the United Auto Workers may have a positive attitude toward a democratic candidate for public office, but in-and-of itself this attitude would seem to have little causal impact on the union's performance. What, then, are the organizational implications of collective attitudes and behaviors, particularly when these attitudes and behaviors are in explicit reference to the perceived favorability of the job, as is the case with job satisfaction?

Once job attitudes become collectivized, as Ostroff (1992) hypothesized, satisfaction may result in performance at the organizational level of analysis because, "Organizational effectiveness measures can reflect, at least in part, the cumulative responses and interactions among employees" (p. 965). Therefore, one of the ways in which collective attitudes matter is that they are likely to cause a broad array of behaviors that, in total, become an important index for organizational effectiveness (Harter, Schmidt, & Hayes, 2002). Indeed, as noted by Kopelman, Brief, and Guzzo (1990), organizational performance may be caused by many behaviors, beyond relatively narrow measures of individual job performance, that in turn are linked to job satisfaction, such as attachment behaviors (attendance, retention) and organizational citizenship. As Merrihue and Katzell (1955) noted, organizational performance may be an overall yardstick encapsulating many employee behaviors that are related to satisfaction. Indeed, some also have argued that the relation between satisfaction and performance at the organizational level may be stronger than the relation at the individual level (Johns, 1991; Schneider & Schmitt, 1986). Hence, the breadth of organizational performance measures may render the total—organizational performance resulting from the aggregate of individual employee behaviors—greater than the sum of the parts (i.e., job satisfaction–behavior correlations at the individual level of analysis).

Previous empirical studies appear to support this inference concerning organizational-level effects of satisfaction. For example, Ostroff (1992) found that general job satisfaction was positively correlated with several indicators of school effectiveness ($r = .28$) and negatively correlated with turnover intentions at the school level ($r = -.54$, $p < .05$). Ryan, Schmit, and Johnson (1996) showed that job satisfaction was related to various indicators of bank branch unit performance, including customer satisfaction

($r = .19$, $p < .05$), market share ($r = .30$, $p < .01$), sales volume ($r = .18$, $p < .05$), turnover ($r = −.18$, $p < .05$) as well as loan delinquency at 30 days ($r = −.20$, $p < .05$) and 60 days ($r = −.22$, $p < .05$). In this way, existing evidence suggests that aggregated general job satisfaction is related to organizational performance, because job satisfaction is an index for a broad array of collective behaviors that cause an organization to be effective (or ineffective).

Hypothesized Relationships Between Pay Satisfaction on Organizational Outcomes

Having presented the theoretical rationale for the relationship between aggregate job satisfaction and organizational outcomes, we now turn to the specific focus of our study, which concerns the relationship between aggregate pay satisfaction and organizational outcomes in educational institutions. In bringing to light these specific contributions, a rationale needs to be provided for the criterion, performance of educational institutions, and pay satisfaction.

In this study, we examined organizational outcomes of school districts such as student educational outcomes (e.g., test scores and dropouts). It is likely that teachers' collective attitudes concerning pay can influence student performance in the classroom. For example, when teachers within a school district believe that they are satisfied with their pay, they are more likely to engage in positive teaching practices that impact students. These teaching practices, therefore, will have a positive impact on student educational outcomes within the school district. The converse is likely to be true as well; when teachers believe that they are poorly paid, their classroom performance will likely suffer thereby diminishing student educational outcomes.

What additional logic supports the expectation that pay satisfaction, in particular, would be related to organizational outcomes? In part, our expectation is derived from the lines of research reviewed above. In addition, of job satisfaction facets, there is reason to believe that pay satisfaction may be the most important. The job choice literature shows that pay is one of the most important job attributes to job seekers (Barber & Bretz, 2000). For incumbent employees, pay is important as well. When social desirability was taken into account, Jurgensen (1978) found that pay satisfaction was the most important job attribute in a study of more than 10,000 employees. In commenting on pay-for-performance systems, Locke, Ferren, McCaleb, Shaw, and Denny (1980) noted, "No other incentive or motivational technique comes close to money" (p. 381). At a minimum, it is clear that pay is of fundamental importance to most employees, and it therefore stands to reason that organizations with employees who have

positive affective reactions toward their pay will perform more effectively than those with employees with less positive reactions.

   Hypothesis 1: Pay satisfaction will be positively related to organizational-level performance outcomes.

   Because our data permit us to empirically analyze four constituent dimensions of pay satisfaction (satisfaction with pay level, satisfaction with pay structure, satisfaction with pay raises, and satisfaction with benefits), we also will explore whether these four constituent dimensions separately are associated with organizational outcomes or whether organizational outcomes are associated with a composite pay satisfaction variable that combines the four constituent dimensions.

Hypothesized Relationship Between Union Satisfaction and Pay Satisfaction

   Pay is set through district-level collective bargaining between the district (i.e., local) union and the school district administration. District union officials engage in collective bargaining to negotiate salaries for teachers; officials from the state union headquarters provide support to district union negotiators during collective bargaining. Teachers form opinions about the competency of their union officials, in part, by observing whether officials are well prepared, resourceful, and highly motivated during the collective bargaining process. Such observations about the bargaining process, in turn, influence how satisfied teachers are with the outcomes of negotiations over pay. Research suggests that the satisfaction that teachers have with their union can impact their pay satisfaction (e.g., Evans & Ondrack, 1990). There is also empirical evidence to suggest that collective bargaining at the school district level increases homogeneity in teachers' attitudes (Griffin et al., 1995). Specifically, Griffin et al. (1995) found evidence that the actions performed by unions at the school district level are related to the shared attitudes that teachers have toward their pay.
   Previous research suggests that union membership is a positive predictor of pay satisfaction. Gomez-Mejia and Balkin (1984) found that union members were more satisfied with their pay than were non-union members. The authors argued that union membership influences pay satisfaction in several ways. First, the union may affect perceptions of pay by influencing pay level through collective bargaining actions that increase their members' pay. Second, most unions introduce grievance procedures to allow members to voice their dissent over pay levels. The introduction of this kind of procedure can influence members' perceptions of pay fairness; employees feel they have voice in decisions regarding pay. Although the Gomez-Mejia and Balkin study focused on union membership as opposed

to union satisfaction, the results tend to suggest that union involvement can influence perceptions of pay satisfaction.

Therefore, we posit that the attitudes that teachers have towards their union will be related to their level of pay satisfaction.

> *Hypothesis 2*: Union satisfaction will be positively related to pay satisfaction, which will be positively related to organizational-level performance outcomes.

Although theory and previous evidence led us to hypothesize that union satisfaction predicts pay satisfaction, it is possible that the reverse could be true, namely that pay level predicts satisfaction with the union. That is, higher pay may predict satisfaction with the union. We will examine this direction of causality issue by analyzing whether actual teacher pay levels (in dollars, not pay satisfaction) impacts union satisfaction.

Method

Data

Data were obtained on 117 public school districts in Pennsylvania and from 6,394 public school teachers in those districts. Of these 117 districts, data were available from 52 districts from 1988–1989, and 65 different districts from 1989–1990. Data were cross-sectional and no district contributed data from more than 1 year.

Measures

Student academic performance. The Pennsylvania Department of Education provided data on student academic performance, namely the average pass rate of a district's students on an annual academic competency test. The Pennsylvania Department of Education annually administered the Test of Essential Learning and Literacy Skill (TELLS) to all third, fifth, and eighth grade public school students. In a given year, TELLS was administered to approximately 400,000 students. It was a standardized criterion-referenced test of basic reading and math competency. The internal consistency of TELLS ranged from .92–.94 for reading and from .91–.94 for math (Pennsylvania Department of Education, 1987). A passing score depended on the grade level but ranged from 66% to 71% correct answers, which was approximately 15 percentage points below the national average for these test items (Pennsylvania Department of Education, 1987).

A major advantage of using TELLS as an organizational outcome measure was that the test contained no self-selection bias; it was administered

to all third, fifth, and eighth grade students in each school district. The absence of self-selection bias in TELLS contrasted with substantial self-selection bias inherent in common academic achievement tests, such as the Scholastic Aptitude Test (SAT), which often have been used as educational outcome measures. The SAT suffers from self-selection bias because it is taken by only college-bound high school students (Hanushek & Taylor, 1990).

To create a measure of the academic performance of each district's students, we computed a district's mean score of six pass rates: third graders' pass rate on both components (reading and math), fifth graders' pass rates on both components, and eighth graders' pass rates on both components. The overall mean of these six pass rates for each district was used as the measure of the academic performance of a district's students. Pass rate, as opposed to the raw test score, is a fundamental outcome metric for school district administrators because it is on this basis that financial support from the state is awarded. In addition, administrators use pass rate as vital information to identify those students in need of remedial education or counseling.

Student dropout rate.   Each district must submit an annual report to the Pennsylvania Department of Education indicating the number of students in grades 7 through 12 who dropped out. Dropouts were distinguished from students who moved to another school district. For each district, the dropout percentage was based upon the number of students who dropped out in an academic year divided by the number of students in the district.

Teacher survey scales.   Survey data on teacher perceptions and attitudes were obtained from annual surveys administered within districts. Surveys were administered by the Pennsylvania State Education Association (PSEA) as part of a larger study of educational professionals. A PSEA representative (such as the local union president) in each district distributed the surveys. Completed surveys were sent by post directly to the state PSEA office. Surveys were administered to all teachers and educational professionals in the school district (regular classroom teachers, special education teachers, vocational/technical teachers, guidance counselors, psychologists).

The teacher turnover intentions scale was a three-item measure of teachers' intentions to find employment in a field other than public education. Coefficient alpha was .89. Items included, "I am considering employment in a field other than education" and "I plan to leave public education employment within the next few years for reasons other than retirement."

The pay satisfaction items were adapted to the public education context from the Minnesota Satisfaction Questionnaire (Weiss et al., 1967). All items used a five-point scale ranging from 1 = *very dissatisfied* to

5 = *very satisfied*. The referent for all items was the responding teacher. The satisfaction with pay level scale was a three-item measure of satisfaction with overall level of pay, current pay, and take home pay ($\alpha = .98$). The satisfaction with benefits scale was a three-item measure of satisfaction with benefits package, value of benefits, and number of benefits received ($\alpha = .99$). The satisfaction with pay structure was a two-item scale measuring fairness of the salary schedule and information the organization gives about pay issues of concern ($\alpha = .82$). The satisfaction with pay raises was a three-item measure of satisfaction with the influence that school district administrators have on pay (e.g., not in determining pay but regarding pay proposals made by administrators during collective bargaining with the district's union), raises typically received in the past, and the most recent raise ($\alpha = .89$). The satisfaction with union scale was a two-item measure of satisfaction with the union at both the local and state level ($\alpha = .87$).

Because the standardized test of academic competency was administered to third, fifth, and eighth grade students, it was appropriate to include only survey responses from elementary and junior high school teachers; high school teachers, of course, would have no impact on the academic performance of grade school and junior high school students. We included all elementary and junior high school teachers because each teacher provides instruction on all academic topics that impact reading and mathematics skills. This differs, of course, from high school teachers who teach more specific courses that may or may not impact reading and mathematics skills. The total number of teacher respondents across the 117 districts was 6,394. The average survey response rate per district was 60% and the average number of respondents per school district was 54.6. Seventy-three percent of respondents were female. The average age of respondents was 41.

In analyses using dropout rate as the outcome measure, we used a slightly different set of survey respondents. Because a student's decision to drop out may be influenced by a variety of educational professionals, we used survey responses from classroom teachers, vocational/technical teachers, guidance counselors, and psychologists. Survey responses from educational professionals that worked in elementary schools were excluded because they were believed to have a negligible impact on a students' decision to drop out in junior or senior high school. For the dropout data, the total number of teacher respondents across the 117 districts was 4,887. The average survey response rate per district was 76.4% and the average number of respondents per school district was 42. Forty-six percent of respondents were female. The average age of respondents was 42.

Controls. Data from the Pennsylvania Department of Education provided measures of average teacher salary level, students' socio economic

status, physical facilities, and teacher experience, which were used as control variables. Average teacher salary was the actual annual salary, in 1988 dollars, for the school district (i.e., bargaining unit). Socioeconomic status of students was the mean of annual personal income of households within a school district (in 1988 dollars) divided by the number of students in the district. The adequacy of a district's physical facilities was a three-item survey measure of teacher perceptions of the adequacy of physical facilities (school buildings and classroom). The measure of teacher experience was a survey item in which teachers indicated the number of years they had been an educator. These controls pertained to important factors that could influence our outcome measures.

Aggregation Issues

Our theoretical interest in this study is in the linkage between pay satisfaction and performance at the organizational level. In studying this linkage in the context of public education, why aggregate individual pay satisfaction data to the school district level? Why not aggregate to the school level?

In addition to following previous research that used the school district as the unit of analysis (Currall & Kohn, 1996; Griffin et al., 2001), there were several reasons why the school district was the appropriate level of analysis for studying pay satisfaction and organizational outcomes. First, in Pennsylvania, where we collected our data, all public school districts are unionized. Public education is unionized in many states across the country such as California, Connecticut, Florida, Illinois, Maryland, Massachusetts, Michigan, Missouri, New York, New Jersey, Oregon, and Washington, among others. As legally prescribed in Pennsylvania, collective bargaining occurs between school district administrators and local teacher unions who represent the teachers in the school district. The basic collective bargaining procedure for setting teacher pay has remained virtually unchanged since the late 1980s. Teacher pay is determined at the school district level not at the school level. All teachers in the district are subject to the same pay "schedule," which stipulates pay level as well as pay increments that are based on teacher seniority, education, and cost of living adjustments. Teachers within a district receive the same benefits as stipulated in the collective bargaining agreement. Moreover, pay decisions are not made at the school level. Performance appraisals completed by school principals do not impact teacher pay.

Because our focus was on outcome variables at the school district level, we aggregated individual-level teacher survey data to the school district level. Taking a multiple-level approach (Klein, Conn, Smith & Sorra, 2001; Ostroff, 1992; Ostroff & Harrison, 1999; Ostroff & Schmitt, 1993), as we

did in this study, it is necessary to show that members within an organization are homogeneous in their attitudes when forming an organization-level pay satisfaction construct (Klein, Dansereau, & Hall, 1994). James (1982) suggested that "the use of aggregates is predicated on demonstrating perceptual agreement because agreement implies a shared assignment of psychological meaning" (p. 228).

To test for the appropriateness of aggregating all the independent variables and the outcomes to the school district level, we calculated ICC(1), ICC(2), and r_{wg} to assess the degree of agreement at the school district level. The intraclass correlation, or ICC(1) provides an estimate of between-unit variability that is essentially the percentage of total variance in scores that is explained by school district membership (Bliese, 2000; James, 1982). ICC(1) ranged from .09–.30, indicating an adequate level of between-unit variability. Historically, ICC(1) values have ranged from 0–.5 with a median of .12 (James, 1982). To assess reliability of variables at the school district level, we calculated ICC(2), which indicates the reliability of the aggregated school district means (Bliese, 2000) and is a function of ICC(1) and average group size (Bliese, 2000). Accordingly, the greater the ICC(1) and the larger the number of individuals sampled per unit, the more reliable are the unit means. ICC(2) ranged from .88–.91. All were statistically significant. Glick (1985) recommended a minimum cutoff of .60 for ICC(2). Values for r_{wg} ranged from .90–.97, indicating a high level of agreement (James, 1982). Taken together, these statistics indicated that aggregation of individual-level data to the school district level was warranted.

Results

Overview of Analyses

We conducted structural equation modeling by using maximum likelihood estimation (Amos 4.0). We followed a two-stage approach (Anderson & Gerbing, 1988) by first testing the measurement model of the dimensions of pay satisfaction as well as the measure of union satisfaction. Subsequently, we tested the structural models involving pay satisfaction, union satisfaction, and organizational outcomes. All analyses were performed at the organizational level (i.e., the school district level).

To judge the goodness of fit of the various models, we relied on the comparative fit index (CFI), the goodness-of-fit index (GFI), and the incremental fit index (IFI). We also report the root-mean-square error of approximation (RMSEA) and the chi-square (χ^2) test for indices of model fit. Joreskog (1969) suggested a ratio of chi-square to its degrees of freedom be less than five to be considered reasonable. Models resulting in CFI,

GFI, and IFI of .90 or higher are considered acceptable (Bagozzi & Yi, 1988). A value of about .08 or less for the RMSEA indicates a reasonable error of approximation, although values higher than .10 are unacceptable (Browne & Cudeck, 1993).

Tests of the Measurement Model

Means, standard deviations, and correlations between the scale items are provided in Table 1. The table shows that there were significant correlations among pay satisfaction dimensions ranging from correlation coefficients of $r = .67$ to $r = .93$, suggesting that the four pay satisfaction dimensions loaded on a higher-order factor measuring general pay satisfaction. Bagozzi and Heatherton (1994) have provided a framework for modeling multidimensional constructs. In their partial aggregation model, a single higher-order latent variable is represented by several lower-order variables. Each lower-order variable is represented by a composite of measured indicators. Bagozzi and Heatherton argued that because there is a one-to one correspondence between each composite and the associated lower-order factor, the composites can be treated as multiple indicators of a single higher-order factor.

Therefore, we tested a measurement model including the following latent variables: (a) a single higher-order factor of pay satisfaction, based on loadings from satisfaction with pay level, benefits, pay structure, and pay raises (each of which was represented by multi-item indicators), and (b) union satisfaction. Union satisfaction was represented by its multi-item indicators. The test of this hypothesized measurement model resulted in a significant chi-square value $\chi^2_{49} = 127.29$, $p < .05$; the normed fit indexes indicated a reasonable fit to the data, (CFI = .97, IFI = .97, RMSEA = .09).

We then tested three alternative measurement models. In the first alternative model, we loaded the two union satisfaction items on the pay satisfaction latent variable. We tested this model because of the moderately high correlations between the pay satisfaction dimensions and union satisfaction. The test of this alternative model resulted in the following fit statistics: $\chi^2_{53} = 360.50$ ($p < .05$), CFI = .77, IFI = .77, RMSEA = .22. In the second alternative measurement model, we loaded all the items (including the four pay satisfaction dimensions) on to one high-order factor representing general job satisfaction. This second alternative model resulted in the following fit statistics: $\chi^2_{50} = 236.88$ ($p < .05$), CFI = .93, IFI = .89, RMSEA = .18. In the third alternative model, we included pay level, pay structure, and pay raises on the higher order latent variable (pay satisfaction), and we represented benefits satisfaction through its multi-item indicators; consequently, we did not load benefits satisfaction on the

TABLE 1
Means, Standard Deviations, and Zero-Order Correlations for All Variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Student socio economic status	$67,295	$32,850	—											
2. Teacher experience	4.43	.50	.10	—										
3. Physical facilities	4.23	.60	.13	-.11	—									
4. Actual teacher salary	$28,633	$3,419	.63**	.28**	-.03	—								
5. Student academic competency (pass rate)	85.69%	6.71%	.51**	.28**	.16	.22*	—							
6. Teacher turnover intentions	2.44	.42	-.23**	-.14	-.07	-.33**	-.14	—						
7. Student dropout rate	1.88%	1.06%	-.27**	-.21*	.04	.21*	-.47**	.11	—					
8. Benefits satisfaction	4.12	.50	.27**	.21*	.16	.37**	.25**	-.31**	.04	—				
9. Pay level satisfaction	3.43	.60	.24**	.13	.21*	.44**	.23*	-.46**	-.01	.67**	—			
10. Pay structure satisfaction	3.83	.48	.19*	.12	.19*	.39**	.24**	-.47**	.00	.68**	.90**	—		
11. Pay raise satisfaction	3.55	.51	.17	.10	.19*	.33**	.21**	-.43**	-.02	.69**	.93**	.90**	—	
12. Union satisfaction	4.54	.40	.22*	-.03	.18	.13	.33**	-.32**	-.06	.46**	.52**	.65**	.52**	—

Note. N = 117. **p* < .01, *p* < .05.
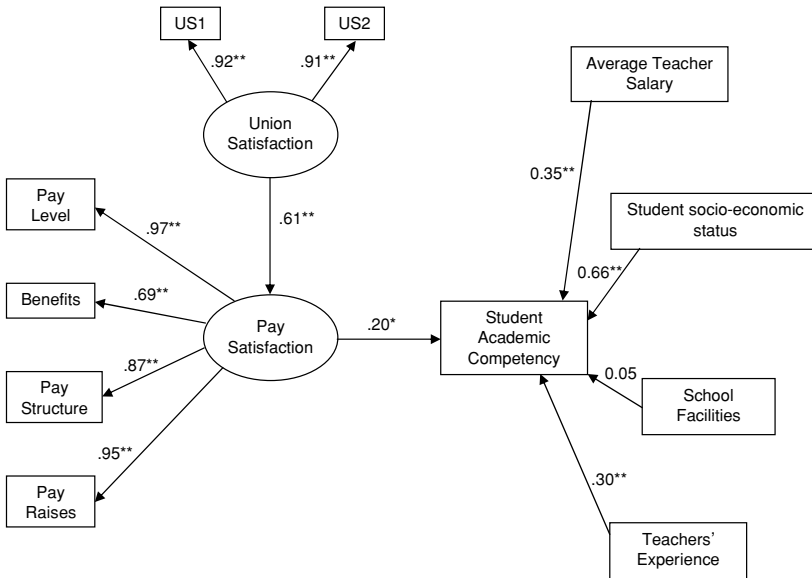
Figure 1: **Effects of Pay Satisfaction on Student Academic Competency**
($^{**}p < .01$, $^{*}p < .05$**).**

higher order latent variable that was tested in the hypothesized model. We
performed this analysis because the correlations between benefits satis-
faction and other pay satisfaction dimensions were high (ranging from $r =$
.67 to $r =$ .69) but slightly less strong than correlations among other di-
mensions (ranging from $r =$ .90 to $r =$ .93). This third, alternative model
resulted in the following fit statistics: $\chi^2_{48} =$ 126.91 ($p <$ .05), CFI =
.95, IFI = .95, RMSEA = .13. Based on these analyses, we retained the
original hypothesized model because it was a better fit to the data than the
three alternative measurement models.

Tests of Structural Models

We tested the structural relations between pay satisfaction and union
satisfaction, and each of the organizational outcome indices (student aca-
demic performance, teacher turnover intentions, and student dropout rate)
separately, controlling for average teacher salary, student socio economic
status, physical facilities, and teacher experience.

District-level student academic performance. Figure 1 shows the
structural model testing the relations between the hypothesized variables
and district-level student academic performance. As shown in Table 2, the

TABLE 2
Summary of Structural Model Statistics

Structural model	χ^2	df	CFI	IFI	GFI	RMSEA
Outcomes						
Student academic performance	64.41*	31	.96	.96	.91	.06
Teacher turnover intentions	78.76*	31	.95	.95	.90	.07
Student drop-out rate	53.30*	31	.97	.97	.93	.07

Note. *$p < .05$.

proposed model indicated a good fit to the data. As hypothesized, the path from pay satisfaction to student academic performance was significant ($\beta = .20, p < .05$), which supports Hypothesis 1, and the path from union satisfaction to pay satisfaction was significant ($\beta = .61, p < .01$), which supports Hypothesis 2. The percentage of variance in student academic performance explained by the model was 45%.[2]

District-level teacher turnover intentions. Figure 2 shows the relation between the hypothesized variables and teacher turnover intentions. As presented in Table 2, the proposed model was a good fit to the data. As hypothesized, the path from pay satisfaction to teacher turnover intentions was significant ($\beta = -.42, p < .01$), supporting Hypothesis 1, and the path from union satisfaction to pay satisfaction was significant ($\beta = .61, p < .01$), supporting Hypothesis 2. The percentage of variance in teacher turnover intentions explained by the model was 23%.

District-level student dropout rate. Figure 3 shows the relations between the satisfaction variables and student dropout rate. Table 2 shows that the proposed model was a good fit to the data. The path from pay satisfaction to student dropout rate was negative but was not significant ($\beta = -.04$); Hypothesis 1 was not supported. The path from union satisfaction to pay satisfaction was positive and significant ($\beta = .55, p < .01$), supporting Hypothesis 2.

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[2]As discussed earlier, because the standardized test of academic performance was administered to third, fifth, and eighth grade students, the test of the linkage between pay satisfaction and student academic competency was based on teacher survey responses from elementary and junior high schools. Data from high school teachers were not included in this test because they had no impact on the academic performance of grade school and junior high school students. A reviewer suggested that we test the model in Figure 1 using data from survey respondents from junior high and high schools (i.e., excluding data from elementary schools). If the significant pay satisfaction–student academic competency linkage was not replicated, this would provide additional support for the decision to use survey responses from elementary and junior high school teachers only. Indeed, excluding data from elementary schools, the relationship between pay satisfaction and student academic competency was not significant ($\beta = .15, p = .08$). This was further confirmation for our decision to use data only from respondents in elementary and junior high schools to test the pay satisfaction–student academic competency linkage.
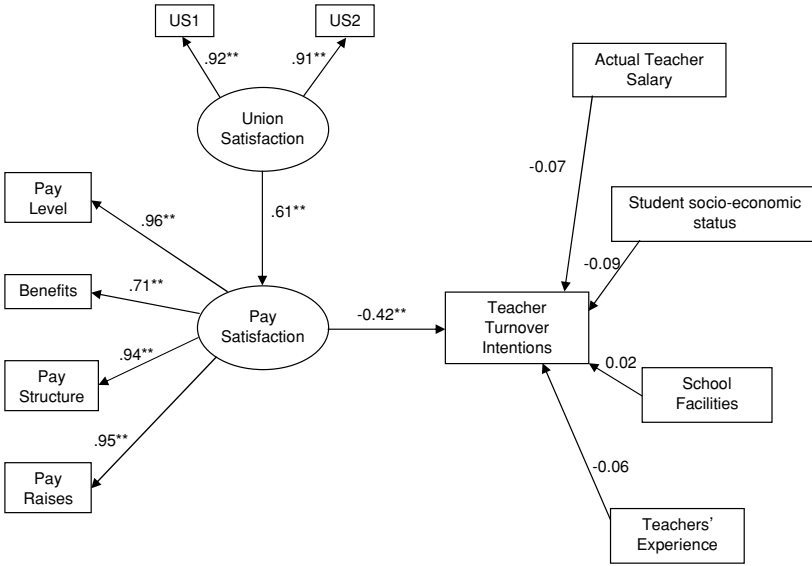
Figure 2: **Effects of Pay Satisfaction on Teacher Turnover Intentions**
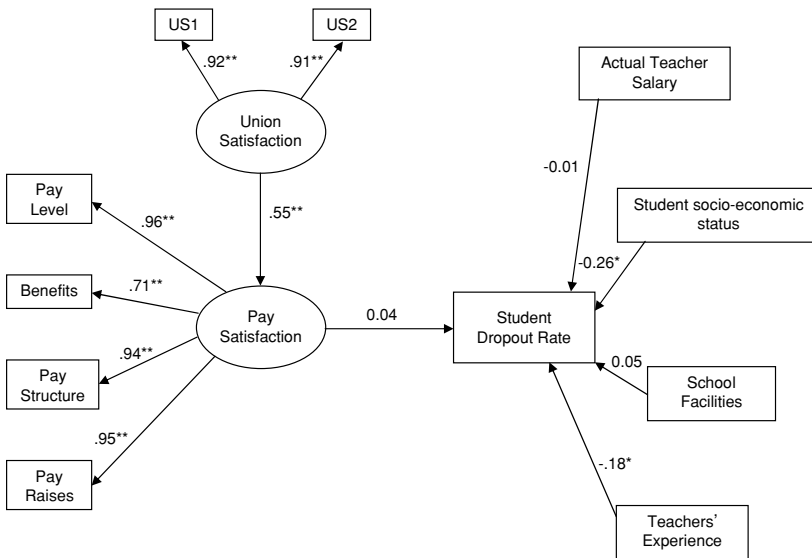(*******p* < .01, *p < .05).

Figure 3: **Effects of Pay Satisfaction on Student Dropout Rate**
(*******p* < .01, *p < .05).

What were possible explanations for why pay satisfaction was not significantly associated with dropouts? We suggest two possible reasons. First, the dropout measure appears to reflect a low base rate pattern, in that, the average percentage of dropouts per school district was 1.88% ($SD = 1.06\%$). Hence, the low base rate may have made it less likely that the linkage with pay satisfaction was significant. Second, the control variable, student socio economic status, had a relatively strong and negative relationship with dropouts (i.e., school districts with higher socio economic status were associated with lower dropout rates). Thus, it appears that a good deal of the variance in dropout rate was explained by socio economic status leaving little variance to be explained by teacher pay satisfaction. Socio economic status may exert its effect because some low socio economic families provide less support for students to stay in school and more pressure to find employment before finishing high school.

We did not present results regarding the relationship between pay satisfaction dimensions and organizational outcomes because the pay satisfaction dimensions were found to load on a second-order variable. This model was a superordinate cause model and was nested within a model that treated the pay satisfaction dimensions as having associations with outcomes (cf. Edwards, 2001). It was possible to test the fit of the models through comparison of the fit of the second-order cause model and a structural equation model that directly linked the pay satisfaction dimensions to the outcomes. Therefore, we performed chi-square difference tests that compared the fit of these two rival models for each of the three outcomes measures. The findings suggested that the second-order pay satisfaction model was a better fit than the structural equation model linking individual dimensions with organizational outcomes; specifically, the chi-square for the model using dimensions as separate variables was significantly poorer than the structural equation model. Consequently, the second-order model fit the data better than a model linking pay satisfaction dimensions to outcomes.

We also tested the possibility that pay satisfaction may mediate a relationship between actual teacher pay level and organizational outcomes. Within the model predicting student academic competency (Figure 1), we reanalyzed the data with pay satisfaction as the mediator between actual pay level and student academic competency. We conducted the same analysis for the model predicting teacher turnover intentions (Figure 2). (We did not conduct this analysis for the model predicting dropouts because pay satisfaction did not have a statistically significant relationship with dropouts.)

We failed to find support for mediation. Baron and Kenny (1986) stated that the first step in conducting a mediation analysis is to establish a

relationship between the independent variable (actual pay level) and the possible mediator (pay satisfaction). In the model using student academic competency, as well as the model using teacher turnover, the relationship between pay level and pay satisfaction was non significant ($\beta = .05$, $p = .963$). This made further tests of mediation unwarranted. On the surface, it was somewhat curious that actual pay level did not exhibit a significant relationship with the pay satisfaction measure. Yet, it must be borne in mind that teachers incorporate several factors into their overall pay satisfaction including their satisfaction with pay structure, benefits, and pay raises. Perhaps because their pay level is not very high ($28,633, in 1988 dollars), teachers appear to give weight to other compensation-related factors such as the percentage pay increase, the quality of information they are given about pay decisions, and the quality of benefits. Furthermore, most do not decide to enter the teaching profession because of the pay level. Teachers know that pay levels are modest at best. Therefore, their overall pay satisfaction appears to be influenced by other factors besides pay level such as pay structure, pay increases, and benefits. This is not to say that pay level has no effect on pay satisfaction; rather, we believe that the effect of actual pay on overall pay satisfaction was limited because pay level is low and other compensation-related factors have non trivial influences on overall pay satisfaction.

Revisiting Hypothesis 2, we raised the possibility earlier that pay may predict union satisfaction rather than union satisfaction predicting pay satisfaction, as we had stated in Hypothesis 2. We examined this direction of causality issue by analyzing whether actual teacher pay (in dollars, not pay satisfaction) impacts union satisfaction. In particular, we reran the structural models for all three outcome variables with pay (in dollars) as a predictor of union satisfaction. The fit indices for these structural models were all below .90 and the chi-squares were all statistically significant. We take this as preliminary evidence that union satisfaction predicts pay satisfaction, as stated in Hypothesis 2, because pay appears not to predict union satisfaction.

Discussion

Our findings were consistent with previous research on attitudes and organizational effectiveness (e.g., Ostroff, 1992; Ryan et al., 1996), namely that shared employee attitudes can influence organizational outcomes. Furthermore, our results indicated that attitudinal processes exhibited important associations with organizational outcomes. The aggregated pay satisfaction ratings were significantly associated with student academic performance, teacher intention to quit, and student dropout levels,

even after controlling for important educational predictors (i.e., student socio economic status, teacher salary, teacher experience, and facilities).

Our findings also parallel findings in other types of organizations. Previous research found that among mid-level government managers, pay satisfaction was negatively related to intention to quit (Miceli, Jung, Near, & Greenberger, 1991). As discussed earlier, Schneider et al. (2003) found that among 35 organizations, pay satisfaction was positively related to financial indicators of return on assets and earnings per share. Schneider, Hanges, Goldstein, and Braverman (1994) also noted that past service sector findings have been replicated on academic samples. It is worth noting that in several studies, students have been viewed as customers, with instructors being seen as service providers (Masterson, 2001; Schneider et al., 1994). In particular, Masterson (2001) found a trickle-down effect linking instructors' feelings of distributive justice to students' evaluations of their instructors. Masterson argued that when instructors believe they are being fairly compensated for their effort, they feel more committed to their organization. Consequently, they will put more effort into their interactions with students. Although Masterson examined the effects of teachers' attitudes on student reactions, intuitively it seems that teachers' attitudes would have the same effect on student achievement.

One way to make comparisons between the organizational performance measures used in our study of educational institutions versus measures used in other (e.g., for-profit) organizations concerns the degree to which performance measures are vital to the functioning of an organization. For example, many corporate performance metrics—such as revenue, sales projections, return on assets–are vital to a firm's efforts to raise financial resources. In the same manner, in most states, test scores are vital to a school district's efforts to receive state funding and funding from parental groups. In addition, employee assessments used in corporations are used to take corrective action. For instance, in corporations, annual employee performance appraisals are used to decide which individuals must receive further job training. In educational organizations, student academic performance information also is used to take corrective action such as remedial coursework. Yet another way to think about the comparability of organizational measures is the degree to which managers are held accountable for them. Just as managers in corporations are held accountable for financial metrics, school district administrators are held accountable on the basis of student test scores and dropout rates. These are perhaps the two most fundamental measures in evaluating the performance of school administrators—they can be hired, promoted, given salary raises, or fired on the basis of these measures.

Generalizability of Findings to For-Profit Companies: Teachers
Are "Knowledge Workers"

The term "knowledge work" "encompasses both what is referred to as professional work, such as accountancy, scientific and legal work, and more contemporary types of work, such as consultancy, software development, advertising and public relations" (Newell, Robertson, Scarbrough, & Swan, 2002). A defining characteristic of knowledge-based work is the difficulty involved in prescribing ahead-of-time the actions required for successful job performance. Organizations must therefore rely on knowledge workers to use their discretion and expertise to come up with innovative solutions and to make adjustments "on-the-fly" to respond to changing situations and customer demands. Indeed, the performance of knowledge workers is increasingly being seen as central to the competitive success of firms in industries ranging from customer call centers, to health care, to management consulting and other professional service organizations in which social interaction is a critical part of the service or product being supplied (Arthur, Currall, and Krishnan, 2005).

The job content of teachers parallels knowledge-based occupations in the for-profit sector. For example, like their knowledge worker counterparts in for-profit firms, public school teachers engage in a number of job activities typically associated with supervisory and managerial work (Shedd & Bacharach, 1991). Although supervisory and managerial activities have traditionally been separated from the responsibilities of front-line employees, these distinctions tend to be blurred in knowledge-based occupations. In particular, the job of teachers is most similar to occupations in for-profit firms that require a relatively large number of both professional/technical as well as managerial/ supervisory activities (Shedd and Bacharach, 1991). These researchers found that the work of teachers, like that of other professional occupations, scored highly on the number of professional/technical characteristics including "college degree required," "diagnoses problems and determines needed action," and "analyzes and interprets data" (p. 27). Teachers must diagnose student learning challenges, determine pedagogical strategies, and interpret student performance data. Of the 77 jobs analyzed by Shedd and Bacharach (1991), they found that the jobs of civil engineers and television news directors were most similar to that of teachers. Like civil engineers and television news directors, teaching is an occupation that involves blurred distinctions between managerial and front-line activities, analysis of data, diagnosing problems, and devising solutions based on analyses.

In summary, there are fundamental parallels in the job content of teachers and other knowledge workers in the for-profit sector. Therefore, our findings on the linkage between pay satisfaction and organizational

outcomes in public education begin to shed light on the pay satisfaction–organizational outcome linkage in other organizational contexts, such as for-profit firms that employ a significant proportion of individuals in knowledge-based occupations.

Limitations

Our data were cross-sectional, which makes it difficult to draw causal linkages between these sets of variables. Although we proposed that aggregated pay satisfaction is related to organizational outcomes, given the nature of our data it is plausible that organizational outcomes predicts pay satisfaction (see Schneider et al., 2003). We acknowledge that one possible reason for the strong relationship between pay satisfaction and turnover intentions was that both measures were obtained from the same individuals. On the other hand, our use of both survey and archival data (student academic performance and student dropout rate) indicates that the pattern of our overall results showing a linkage between pay satisfaction and organizational outcomes cannot be attributed solely to a common method. Therefore, potential concerns with same source bias were mitigated by the use of multiple performance measures, including both objective and subjective performance criteria. In addition, we note that the survey items assessing turnover intentions focused on respondents' intentions to find employment in a field other than public education. Therefore, these items cannot rule out the possibility that a teacher may seek employment in a different school district. Although our data were collected between 1988 and 1990 (figures for student socio economic status and actual teacher salary were in 1988 dollars), we expect the key relationships found in our results to hold true today.

Another limitation of our study was that, unlike previous research (Ostroff, 1992; Ostroff & Schmitt, 1993; Ryan et al., 1996), we were restricted to three organizational outcome metrics. The metrics in our study, however, were fundamental indicators of organizational performance for the public education sector and were based on both attitudinal measures and objective performance criteria. Future research is needed that includes a wider range of criteria across a range of industries.

Future Research Directions and Managerial Implications

One important issue for future research is the identification of factors that mediate the linkage between pay satisfaction and organizational outcomes (Ostroff, 1992; Ryan et al., 1996). For example, as discussed earlier, shared attitudes can develop through shared experiences and social interactions (James, Joyce, & Slocum, 1988; Ryan et al., 1996). Formal (e.g.,

meetings with union representatives or management) and informal (e.g., gossip around the coffee machine) discussions concerning issues of pay may lead to shared opinions concerning the adequacy of compensation. During these interactions, employees compare and discuss organizational performance in addition to individual performance (Ryan et al., 1996). These shared attitudes can lead, for example, to a collective intent to leave or stay with the organization. These dynamics must be explored in future research.

Another future research area is exploration of other antecedents of pay satisfaction besides union satisfaction. One reason for the dearth of empirical studies on possible antecedents of pay satisfaction at the organizational level of analysis is the difficulty in identifying sampling frames and in obtaining responses from both organizations and employees (Schwab & Olson, 2000). Schwab and Olson (1990) designed a simulation to test how different types of performance–pay programs influenced performance at the organizational level of analysis. Although they did not investigate whether performance–pay systems were related to pay satisfaction, findings showed that merit systems (i.e., periodic pay increments) were better predictors of performance than bonus systems (i.e., incentives linked to performance) when measured over three time periods. More research is needed that links pay practices to attitudes and from attitudes to outcomes using the organization as the unit of analysis.

The findings presented in this study suggest that preliminary confidence may be placed in the relation between pay satisfaction and organizational outcomes. Our research focused on one aspect of job satisfaction—namely satisfaction with pay—yet, future research could investigate linkages between organizational outcomes and other aspects of job satisfaction, such as intrinsic elements of work, which enhance employee satisfaction. Beyond replication of the findings, the most fruitful areas for future research are inclusion of different aspects of job satisfaction, adoption of a longitudinal approach, and identification of variables that mediate the effects of pay satisfaction on organizational outcomes.

Managerial implications of our findings are threefold. First, managers should be mindful that not only does pay satisfaction impact individual job performance, aggregate (i.e., organizational level) pay satisfaction of employees may have an important linkage with overall organizational performance, which, in turn, can impact the organization's competitiveness among rival organizations. Second, our measurement model findings suggest to managers that, although some distinctions may exist among aspects of pay such as pay raises and benefits, employees seem to bundle their attitudes toward pay into a single overarching affective reaction to pay. Hence, trying to increase pay satisfaction by tinkering with a single element of pay, such as pay raises, may not always be sufficient to impact overall

affective reactions toward pay. Lastly, organizations that are characterized by employees with low pay satisfaction are susceptible to high rates of employee turnover. Although not new, this finding serves to remind managers that one way to reduce turnover is to attend to pay satisfaction. For instance, managers who oversee employees in jobs where the pay level is modest may do well to be resourceful in placing simultaneous emphasis on the multiplicity of factors contributing to overall pay satisfaction such as pay level, the quality and timing of information that employees receive about pay, and the quality of employee benefits.

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