

The Influence of a Merit Pay Guide Chart on Employee Attitudes Toward Pay at a Transit Authority

The influence of the merit pay guide chart on managerial, professional, technical, and clerical attitudes toward pay is examined in a large transit authority. Although findings indicate that both instrumentality and merit pay satisfaction are influenced by a merit pay guide chart (i.e. position in range and performance ratings) and the size merit increases, the relationship are not necessarily in the predicted direction. Regression analysis indicated that the impact of guide chart ratings on merit pay satisfaction is considerably more than on instrumentality belief. Employees who received merit increases larger than suggested by the guide chart are more satisfied with their merit pay increase than those who receive what is specified or less than what is specified. Implications for future research and compensation practices in the public sector are discussed.

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Compensation systems in the public sector have multiple goals that include attracting qualified employees, retaining those individuals, and motivating their performance. To motivate employees with pay, Lawler¹ prescribed strong linkages between performance and rewards. Merit pay programs are often used to create such linkages.² Under a merit pay program, supervisors are expected to award individual pay increases based on performance. Since merit increases become part of an employees base pay, high performers will eventually move to the top of their pay range, average performers will gravitate to the middle, and poor performers will stay at the bottom.

However, other goals of the pay system may cause managers to compromise the linkage between pay and performance. For instance, competitive pressures in the labor market can cause employers to increase pay levels regardless of employee performance in order to attract or retain those who can competently perform their jobs. Furthermore, Hills,³ Patten,⁴ Meyer⁵ and Heneman⁶ have described problems that merit pay programs have linking performance and pay increases. Some of these difficulties center on supervisors who can obscure the linkage by granting merit increases for reasons other than performance (e.g., friendship, gender or race bias, threat of losing a highly valued employee, and a desire to avoid conflict). These difficulties have received considerable attention by researchers.⁷ Indeed, Markham⁸ found that supervisor unit effects can diminish the pay increase-performance relationship at the individual level of analysis.

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In addition to problems associated with supervisors obfuscating the pay-performance linkages, there are also administrative mechanisms that can weaken these linkages, particularly when pay plans have conflicting goals (e.g., adjusting for inflation or pay demands of occupation in high demand). As a result, it is not surprising that Lawler⁹ obtained low correlations between performance and salary levels for managers in four private and three public organizations. Foster and Lynn¹⁰ found that position-in-range had a stronger influence on merit increases than did employee performance. In other words, employees with higher initial salaries within a pay grade (containing similarly valued jobs) received larger pay increase than employees who started with lower salaries.

A Bureau of National Affairs¹¹ study indicated that 82 percent of the companies studied had established guidelines (guide charts) to assist managers in recommending merit increases for subordinates. Deadrick and Scott¹² found merit pay programs to be the most widely used form of incentive pay program in urban mass transit. Even though merit pay programs and guide charts in particular are widely used, Heneman¹³ noted that there is almost no research on the influence of guide charts on pay decisions or employee reactions to these decisions. Consequently, the current study examines the influence of a merit pay guide chart on merit increase satisfaction and instrumentality belief.

Merit Pay Guide Charts

A merit pay guide chart is a "look-up" table for awarding merit increases based on (1) employee performance, (2) position in the pay range, and, in a few cases, (3) the time since the last pay increase.¹⁴ For the merit pay guide chart, employee performance is typically measured with a performance appraisal instrument completed by their immediate supervisor. The pay range indicates the minimum and maximum amount that an employee can earn for the position they hold. An employee's position in the pay range can be attributed to a number of factors including the pay level that the employee had when he or she entered the pay grade, the time in a grade, and pay increases received while in a grade. In a pay structure with ranges, the midpoint is usually designed to be the competitive pay level for an average performer.¹⁵

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One feature of most merit pay guide charts is that they are designed to move new job incumbents relatively quickly up to the mid-point once they can competently perform the job. The purpose of getting employees' pay to the mid-point is to ensure that they are competitively compensated and are not tempted to move to other employers who pay higher wages or salaries. A second feature of the guide chart is to slow the employees' progress in the pay range above the mid-point to ensure that only top performers move toward the upper limit of the range. If too many employ-

ees are paid above the mid-point, the organization is paying a premium for labor, and top performers who are at the top of the pay range cannot receive pay increases unless the pay range is adjusted.

The merit pay guide chart shown in Figure 1 is typical and is used to award merit increases for employees who participated in this study. The pay range for each pay grade is divided into 5 levels (quintiles) with Quintile 1 (Q1) at the bottom of the pay range and Quintile 5 (Q5) at the top. On the left, employee performance (as determined by the annual appraisal) is arranged in five levels from high (Outstanding) to low (Unsatisfactory). Within the matrix, cells formed by quintile (position in range) and performance level indicate the percentage pay increases to be awarded. For example, an employee who is at the top of the pay range (Q5) and gets a performance rating of "outstanding" will fall in cell "e" of the matrix and should be awarded a 6% pay increase. However, an outstanding performer at the bottom of the pay range (Q1) will fall in cell "a" and should receive a 9% increase.

Figure 1

Performance Level	Quintile (Position in Range)				
	1	2	3	4	5
Outstanding (5)	(a) 9%	(b) 9%	(c) 8%	(d) 7%	(e) 6%
Superior (4)	(f) 7%	(g) 7%	(h) 6%	(i) 5%	(j) 4%
Competent (3)	(k) 5%	(l) 5%	(m) 4%	(n) 3%	(o) 3%
Needs Improvement (2)	(p) 0%	(q) 0%	(r) 0%	(s) 0%	(t) 0%
Unsatisfactory (1)	(u) 0%	(v) 0%	(w) 0%	(x) 0%	(y) 0%

Merit pay guide chart used by the organization participating in the study (letters in parentheses are cell identifiers for reference purposes and numbers within cells represent percent pay increase based on position in pay range and performance appraisal).

Because the purpose of the guide chart is to balance conflicting pay goals, it compromises, by design, the relationship between merit raise increases and performance appraisal ratings. As illustrated in Figure 1, the highest rated performers will not always be the employees with the highest percentage increase. Notice that a superior performer in Quintiles 1, 2 and 3 can receive a percentage increase that is as much or more than an outstanding performer in Quintile 5. As a result, employees are likely to learn that pay increases are not determined just by performance. However, for money to serve as a motivator, expectancy theory specifies that employees must believe there is a link between performance and pay increases which is termed instrumentality belief.¹⁶

Numerous empirical studies support a positive relationship between instrumentality belief and both effort and performance.¹⁷ Finn and Lee¹⁸ found that the performance-reward (instrumentality) relationship were

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higher among employees who felt they were equitably paid. Despite the importance placed on instrumentality belief in the literature, there exists little empirical research on the effect the pay system may have on these beliefs. Folger and Konousky,¹⁹ and Miceli, Jung, Near and Greenberger²⁰ both found a positive relationship between merit pay increases and instrumentality belief. However, no studies were found which investigated the relationship between instrumentality belief and either pay level (position in range) or performance rating. Thus, based on expectancy theory and numerous comments the authors have heard from compensation managers and employees, one would predict that individuals who are high performers, but who are treated less favorably by the guide chart because of their position in the pay range, will have lower instrumentality belief. As a result, it is hypothesized (1) that:

Employees who receive high performance ratings and who are toward the top of their pay ranges will have lower instrumentality belief than employees who receive lower performance ratings and who are toward the bottom of their pay range.

Since guide charts are designed to provide smaller percentage increases for employees who are toward the top of the pay range and larger increases for those who are below the mid-point, it is possible that the employees' satisfaction with merit increases may vary depending on their position in the guide chart matrix. Employees who are high performers and at the top of their respective pay ranges may get a lower percentage pay increase than employees who have an equal or lower performance rating but who are not at the top of their pay range. As a result, it is hypothesized (2) that:

Employees who receive high performance ratings and who are toward the top of the pay range will express lower merit increase satisfaction than employees who receive lower performance ratings and who are toward the bottom of the pay range.

Another way that guide charts may impact employee attitudes toward pay is suggested by Heneman²¹ who proposes that employees may use the guide chart as a means for making a social comparison. Since the guide chart represents the organization's pay increase policy, it establishes a level of expectation with respect to the size of pay increase an employee will receive. Thus, one would expect an employee who receives less than suggested by the guide chart to be less satisfied with the merit increase and have lower instrumentality belief than an employee who receives this amount or more than expected.

Lawler²² and Adams²³ propose that discrepancies between employees' perceptions of the pay they should receive and the amount of pay they actually receive will increase their negative perceptions about pay. How-

ever, research indicates that higher than expected pay will increase pay level satisfaction.²⁴ As a result, it is predicted that:

Employees who receive a pay increase equal to or greater than the pay increase suggested by the merit pay guide chart will be more satisfied with their merit increase (Hypothesis 3a) and have stronger instrumentality belief (Hypothesis 3b) than employees who received a pay increase that is less than suggested by the guide chart.

Employee reactions to merit increases may vary depending upon individual differences.²⁵ For example, employees may evaluate their pay increase relative to past pay increases.²⁶ Tenure or length of service is another potentially important issue since one of the express purposes of a merit pay program is to reward employees for performance rather than longevity. Although research indicates that managers rank the criteria of length-of-service as least important for increasing pay²⁷ the notion that employees should have higher pay for longevity is certainly widespread. Human capital models proposed by Becker²⁸ and Hashimoto²⁹ predict that job tenure will be positively related to higher wages because companies value and want to retain experienced employees. As a result, both tenure and the amount of the most recent pay increase are used as control variables.

Methods

Sample and Protocol

Data for this research were taken from an audit of a transit organization's merit pay program. The organization implemented a merit pay program three years prior to the study. Employees eligible for merit pay increases included nonunion office employees in managerial, professional, technical, and clerical positions. This research location was chosen from among approximately 200 transit authorities that had merit pay systems because it was comparable to "state of the art" programs in industry and was well-administered.

After explaining the purpose of the study an attitude survey was administered jointly by two researchers to groups of 30-50 employees. Confidentiality was stressed and participation was strictly voluntary. Questionnaires were obtained from 842 of the approximately 900 employees eligible for a merit increase. Performance data, pay increase, and tenure information were taken from company records. To obtain a complete set of information (connect attitude survey with personnel records), employees were asked to put their names at the end of the questionnaire. However, the request for self-identification was clearly marked as optional. The inability to match employee records with the attitude survey and changes in the employment status, (e.g., promotions, reassignments and quits) of an

employee reduced the final usable sample to 677, which was 75 percent of those employees eligible to complete the questionnaire.

The merit pay system in this organization involved a supervisor's assessment of performance that was subsequently linked to merit pay increases. Under this system, individual supervisors reviewed each of their subordinates and rated his or her performance. The employee's merit increase was based on the outcome of this evaluation as dictated by the merit pay guide chart shown in Figure 1. The merit increase was announced two months later and this increase was the only change in pay during the year. Individuals who received pay increases associated with promotions, demotions, or reassignment of a position to another pay grade were excluded from this study.

Since the transit authority was a public organization, pay information on individual employees is readily available and an open pay system is the norm in this organization. Furthermore, the guide chart is used to communicate how a pay increase decision is made. As result, the impact of the guide chart on pay should be readily apparent to employees.

Measures

Performance Rating. The performance rating used to determine position in the guide chart is based on the supervisors' appraisals of their subordinates work habits, job behaviors, and results. The supervisor supported each rating with a narrative essay addressing key behaviors. This component of the appraisal is analogous to a critical incident technique.³⁰ The supervisor is required to combine all this information "clinically" into an overall judgment of performance using a five-point continuum from "Unsatisfactory" to "Outstanding." For this study, the overall evaluation is used as the measure of performance level. The scaling is converted to a numeric system by assigning values to the performance levels in the following manner: 1 = Unsatisfactory, 2 = Needs improvement, 3 = Competent, 4 = Superior, and 5 = Outstanding. Performance appraisal information is taken from employee records. However, employees seldom received a performance rating below 3 which would indicate that if an employee's performance did not improve, he or she would be fired or demoted.

Position-in-Range. The employees position-in-range or quintile is determined by the number of "steps" the employee has advanced in their pay range. These steps are grouped to form the quintiles for the merit pay guide chart as shown in Figure 1.

Merit Increase Satisfaction. Merit increase satisfaction is measured with a four-item, six-point Likert Scale adapted from the Minnesota Satisfaction Scale. "I am very satisfied with the last merit increase I received" is an example of the items used for this scale. The coefficient alpha for merit increase satisfaction was .85. An employee's score on this variable (and for

instrumentality belief) is computed by summing the responses from each item and dividing the score by the total number of items used for the measure. Response categories ranged from "strongly agree" to "strongly disagree" for each item on the merit increase satisfaction scale and for instrumentality belief.

Instrumentality Belief. Instrumentality belief is measured with a five-item, six-point Likert Scale developed for this study. "Merit increases accurately reflect an individual's job performance" is an example of the items used for this scale. The coefficient alpha for instrumentality belief is .84.

Merit Increase. Pay increase data were collected from the payroll files for each employee. It was possible to calculate two measures of merit increase: (1) the percentage increase from the previous year's pay, and (2) the actual dollar increase. Depending on the width of the salary range, a higher percentage increase at the lower end of the salary range could actually translate into fewer actual dollars, when compared to a lower percentage increase at the upper end. As a result, it is conceivable that employee perceptions of the size of their merit increase could be influenced either by the percentage increase or the actual dollar amount they receive. One might argue that the employee who is lower in the pay range has received a larger increase relative to his or her own pay (percentage increase), but, in real dollar terms, the employee could conceivably receive less than another employee doing work of similar value (same job grade). In fact, Vecchio and Terborg³¹ find that the absolute dollar pay increase was perceived differently (as being fairer) than a percentage increase by seventy first-year MBA students. However, our data indicated that these two measures were highly correlated ($r = .74$), and when analyzed independently provided similar findings. As a result, only the results for the percentage of merit pay increase is present.

Merit Deviation. Merit deviation is the difference between the merit pay increase actually awarded to an employee and the merit pay increase specified in the guide chart given the employee's performance rating and position in the pay range (quintile). Merit deviation is calculated by subtracting the suggested guide chart increase from the merit pay increase actually awarded to the employee. This value can, therefore, have positive or negative values, and is used as a continuous variable.

Length of Service. Length-of-service is the total number of years an employee has worked for the organization. This measure was taken from company personnel records.

Analytical Procedure. Means, standard deviations and reliability coefficients were calculated. Correlational analyses were included to show the relationship between individual variables. Multiple regression analysis was

used to examine the predicted relationships with instrumentality belief and merit pay satisfaction. Length of service and the most recent pay increase were entered into the formula first to control for impact on the regression formula.

Results

Descriptive statistics (means and standard deviations) and Pearson's correlations are shown in Table 1. The average percentage pay increase is 5.17% (s.d. = 1.60, range = 0-9.68%) for the 677 employees who are included in this study. The average performance rating is 3.60 (s.d. = .66) and the average quintile score (position-in-range) is above the mid-point (\bar{x} = 2.89, s.d. = 1.34). On average, employees have been with the organization for 11.36 years (length of service). The average score for merit increase satisfaction and instrumentality belief are both below the mid-point of the scales (\bar{x} = 2.84, s.d. = 1.61; \bar{x} = 2.58, s.d. = 1.26; respectively). The dispersion of scores is not sufficiently skewed to require that these data be corrected.

The correlation matrix for the data is also shown in Table 1. Merit increase satisfaction is positively correlated with pay increase ($r = .36$, $p < .001$), performance rating ($r = .43$, $p < .001$), position-in-range ($r = .19$, $p < .001$), increase deviation ($r = .20$, $p < .001$), and instrumentality belief ($r = .48$, $p < .001$). Instrumentality belief is positively correlated with pay increase and performance rating ($r = .12$, $p < .001$; $r = .15$, $p < .001$, respectively). Unlike merit increase satisfaction, instrumentality belief is not significantly correlated with length of service or position-in-range. Although instrumentality belief and merit pay satisfaction are correlated, the differences in how the concepts are defined and measured, differences in the relationships that they have with the other variables, and the alpha coefficient indicate that these are indeed separate variables. Finally, length of service was negatively correlated with pay increase ($r = -.18$, $p < .001$). The employees who had been with the organization the longest received the smaller percentage increase. However, length of service is not significantly correlated with performance ratings.

Increase deviation (i.e., the amount that the actual pay increase differed from the specified award by the guide chart) is positively related to the size of the pay increase ($r = .59$, $p < .001$) and merit increase satisfaction ($r = .20$, $p < .001$) but not to instrumentality belief. Length of service, performance rating, and position-in-range are also positively related to increase deviation ($r = .20$, $p < .001$; $r = .26$, $p < .001$; and $r = .34$, $p < .001$, respectively).

Table 1: Descriptive Statistics and Pearson's Correlation Matrix (N = 677)

Variables	Mean	Standard Deviation	Correlation Matrix						
			1	2	3	4	5	6	
1. Percentage Pay Increase	5.17%	1.60							
2. Length of Service	11.36	8.42	-.18 ^c						
3. Performance Rating	3.60	.66	.69 ^c	.05					
4. Position-in-Range	2.89	1.34	-.07 ^a	.51 ^c	.45 ^c				
5. Increase Deviation	.18	.88	.59 ^c	.20 ^c	.26 ^c	.34 ^c			
6. Instrumentality Beliefs	2.58	1.26	.12 ^c	-.03	.15 ^c	-.02	.00		
7. Merit Increase Satisfaction	2.84	1.61	.36 ^c	.03	.43 ^c	.19 ^c	.20 ^c	.48 ^c	

^a p < .05

^b p < .01

^c p < .001

Hypothesis 1: Instrumentality Belief

Even though a significant interaction term in the regression analysis (see Table 2) indicates support for Hypothesis 1, Figure 2 shows that employees who receive high performance ratings and are toward the top of their pay ranges have higher instrumentality beliefs than employees who receive lower performance ratings and are toward the bottom of their pay range. However, it is interesting to note that for employees rated competent those who are lower in the pay range have higher instrumentality beliefs than those who are higher in the pay range. Thus, hypothesis 1 is support only for employees who receive competent performance ratings. Length of service, actual pay increase, performance rating, and position in range have been entered in the regression equation before the interaction term of interest (performance rating X position-in-range) to control for their influence. The model indicates that significant amount of variance in instrumentality belief was explained by the employees position-in-range, and the interaction term (position-in-range x performance rating). Although there is a significant effect of the interaction term ($t = 1.94, p = .05$), the total model explained little of the variance in the data set ($R^2 = .04, p < .001$).

Hypothesis 2: Satisfaction with Merit Increase

Although the results of the regression analyses indicate an interaction between performance and position in range, Figure 3 shows mixed support for hypothesis 2. Employees who receive high performance ratings and are toward the top of the pay range expressed higher merit increase satisfaction than employees who receive lower performance ratings and are toward the bottom of their pay range. However, employees who are rated competent support hypothesis 2 to the degree that the size of an employee's pay increase is lower than employees who received higher performance rating and those employees who were toward the top of their pay range were less

satisfied than those toward the bottom of the pay range. Employees who received a superior or outstanding performance rating did not seem to be affected by their position in range. Length of service, actual pay increase, performance rating, and position-in-range have been entered in the regression equation before the interaction term of interest (performance rating X position-in-range) to control for their influence. This model explains a larger portion of the variance in merit increase satisfaction in ($R^2 = .20$, $p < .001$) than it did for instrumentality belief.

Table 2: Results of Multiple Regression Analysis (N=677)
(with percentage (%) pay increase in formula)

Independent Variables	Instrumentality Beliefs			Merit Increase Satisfaction		
	Beta	t	Signif.	Beta	t	Signif.
Constant	2.73	3.64	.01	1.02	1.16	.25
Length of Service	.02	.43	.67	.01	.19	.85
% Pay Increase	-.05	-.72	.47	.18	3.00	.01
Performance Rating	.05	.39	.69	.05	.46	.64
Position-in-Range	-.60	-2.52	.01	-.45	-2.06	.04
Interaction (Performance Rating and Position-in-Range)	.57	1.94	.05	.65	2.43	.02
R square	.04			.20		
F	5.28			33.70		
Probability of F	.001			.001		

Figure 2: Instrumentality Belief by Guide Chart Group

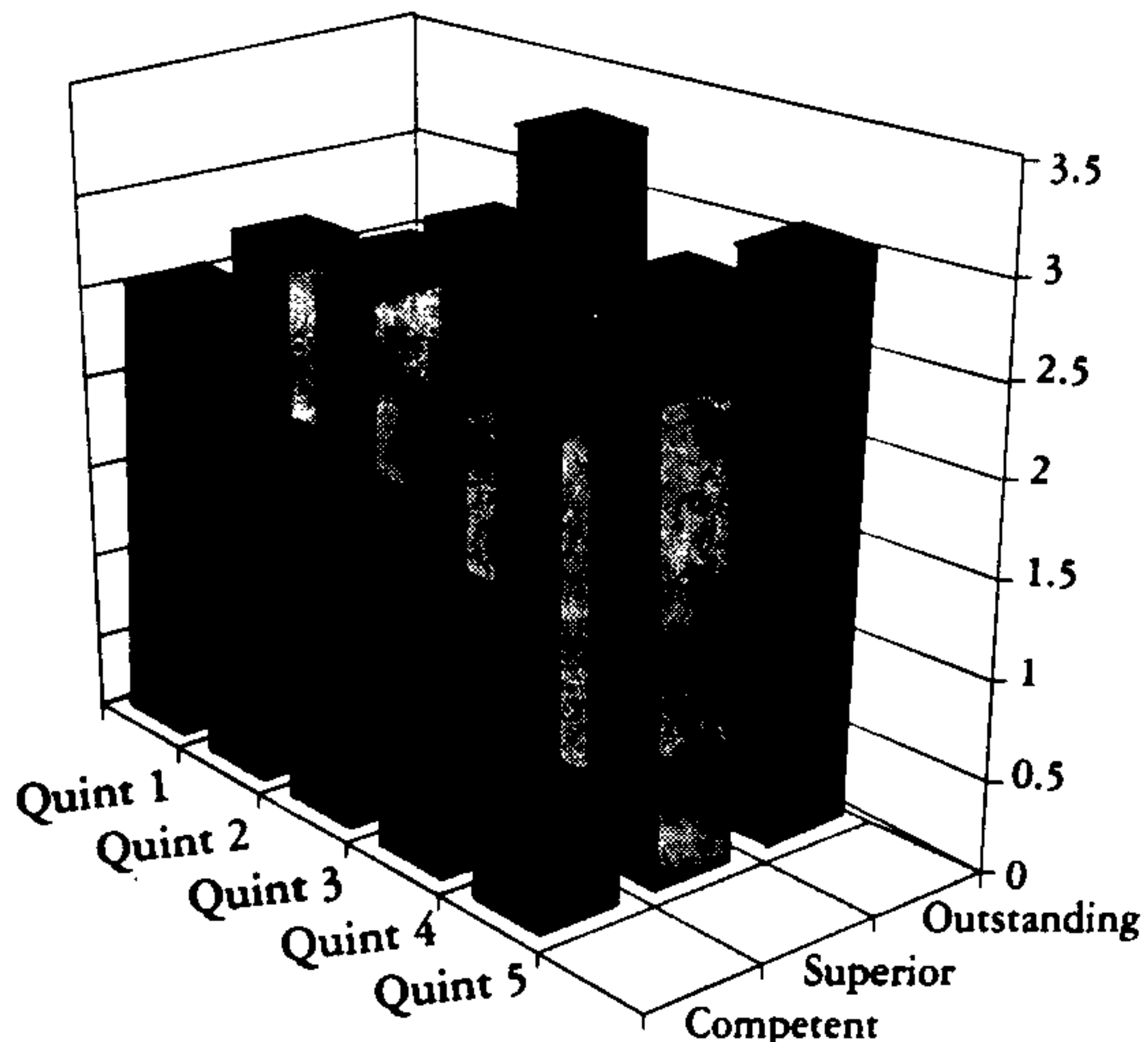
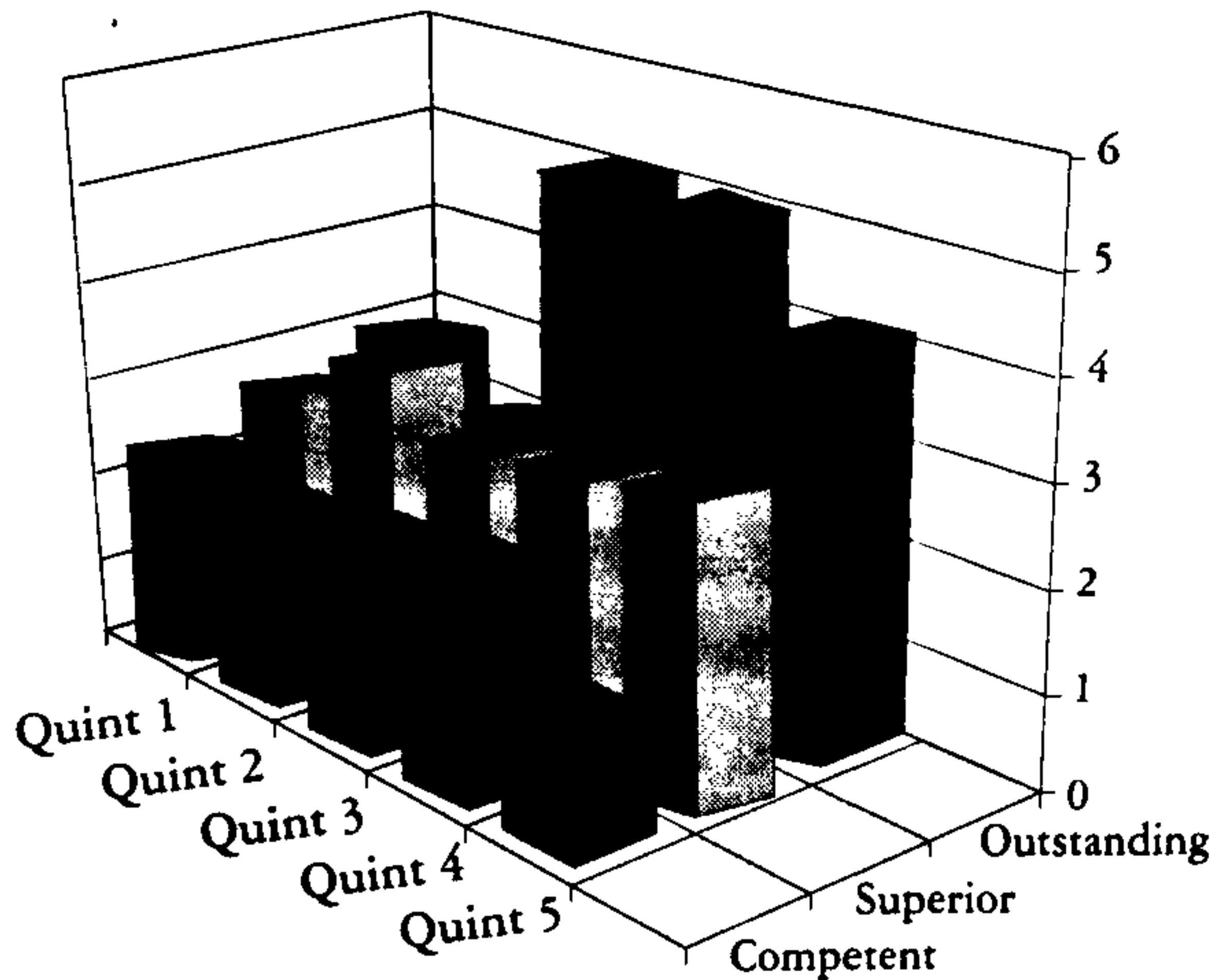


Figure 3: Merit Increase Satisfaction by Guide Chart Group



Hypotheses 3(a & b): Merit Deviation

The correlation matrix (Table 1) shows that there is a significant positive relationship between merit increase satisfaction and the deviation of actual merit increase than specified by the guide chart ($r = .20$; $p < .001$) which supports hypothesis 3a. In other words, if a person received less than what the guide chart specified, they were more dissatisfied than those who were awarded what the guide chart indicated they should. By the same token, those who received more than specified by the guide chart are even more satisfied than those who were awarded what the guide chart indicated that they should. Since no relationship is found between instrumentality belief and merit deviation, hypothesis 3b is not supported.

Discussion

Merit pay guide charts are designed to integrate multiple pay goals and to ensure that pay increases are consistently applied by supervisors throughout the organization. Consistent treatment is believed to create a pay environment in which employees feel fairly treated. However, our results did not indicate that instrumentality belief and merit increase satis-

faction are adversely affected when high performers receive smaller pay increases because they are toward the top of their pay ranges. Thus even though merit pay guide charts may successfully slow employee movement through the upper half of the pay range, employee attitudes are not necessarily negatively affected. Overall these results are good news for those companies that use merit pay system. However, for employees who are rated competent they indeed had weaker instrumentality beliefs and are less satisfied with their merit increases. Interestingly, this effect is considerably weaker for instrumentality belief than it is for merit increase satisfaction.

This study supported findings by Folger and Konousky,³² and Miceli, Jung, Near and Greenberger³³ that there is a positive relationship between instrumentality belief and merit increase satisfaction ($r = .48, p < .001$). Furthermore, as might be expected, instrumentality beliefs were positively related to both pay increases and performance ratings but not to position-in-range or length of service. (However, it was disappointing that these did not explain more variance in instrumentality belief.)

The correlation analysis indicates that instrumentality belief and merit satisfaction are more strongly related to performance rating than position-in-range. Even though the highest percentage pay increases were given to transit employees who were rated as superior and outstanding performers, and who were not toward the top of the pay range, on average employees given an outstanding performance rating received higher actual dollar increases than those rated superior because of their position in the pay range. Similarly, transit employees who were rated superior received a larger pay increase in dollars than those rated competent. Thus, employees with higher performance ratings received larger pay increases in actual dollars even though those who were lower in the pay range may have received a larger percentage increase. Although Foster and Lynn³⁴ noted a similar effect, it would seem that the mixed outcomes from the pay system could create ambivalent attitudes among employees toward pay increases.

Another effect that the guide chart may have on transit employee attitudes is by establishing a pay increase expectation. Because the merit pay guide chart is used to communicate how pay decisions are made in the organization, the employees had access to this information and had an opportunity to form an expectation about how much their pay increase should be. As a result, it is not surprising that merit increase satisfaction is also related to the deviation between the pay increase suggested by the merit increase guide chart and what the employee actually receive. Employees who receive more than expected had higher levels of merit increase satisfaction than employees who received less than expected which is consistent with Fossum³⁵ and Miceli, et al.³⁶ Thus, if management is going to utilize a guide chart for rationalizing and communicating pay policy, it

needs to ensure that the pay increase levels suggested by the guide chart are followed when awarding pay increases.

The results of the study indicate that length-of-service is related to position-in-range but not to performance rating. In other words, employees with the least length-of-service are at the lower end of the pay ranges but on average they did not receive lower performance ratings than did employees at the top of the pay range. In some ways failure to find a relationship between tenure and pay increase or performance rating is probably "good news" since a goal of the pay system is for pay increases to be related to performance, not tenure. However, it may indicate that employee development is not being translated into higher performance for more senior employees.

The generalizability of results beyond this organization maybe limited to public sector or even transit authorities with similar guide chart systems. The guide chart specifies the trade-offs between performance and position-in-range. Because organizations change merit pay guide charts over time, longitudinal research will be required to assess the impact of such changes. However, it is unlikely that the pay decision drives the performance rating in this case because the amount of the pay increase was not known when supervisors assessed employee performance.

Although this research indicates that guide chart ratings influence instrumentality belief and merit pay satisfaction, overall instrumentality beliefs and merit satisfaction are influenced by the performance rating and to a lesser degree the position in range. Thus, the guide chart must be considered an important variable whose effects must be explicitly investigated in order to better understand how pay-for-performance systems can be modeled. Future merit pay research should, at a minimum, report the characteristics of the guide chart in use by the organization studied. From a practitioner's perspective, managers must consider the implications of the trade-offs that they build into merit pay charts. Since pay satisfaction is one goal of the pay system perceptions that merit is not reward can have a negative impact on employee attitudes. However, more important, management needs to carefully administer the program so employees do not receive less than the guide chart indicates that they deserve, so as to better understand the context of the pay-for-performance relationship.

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