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Merit Pay: Just or Unjust Desserts

*An empirical examination
of a pay-for-performance program*

*By Frederick S. Hills, K. Dow Scott,
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The principle of merit pay, or pay-for-performance, is well established in corporate America. Surveys of pay practices indicate that more than 80 percent of U.S. companies have merit pay programs for one or more of their employee groups (The Conference Board, 1976). Moreover, interest in merit pay is surging both within the public and private sectors of the economy. Executives see merit pay as a prescription for improving productivity in an increasingly competitive world.

The widespread and continued use of merit pay plans is certainly prima facie evidence that managers believe such programs enhance employee performance and productivity; however, the value attributed to merit pay programs is in large part an act of faith. There is very little empirical evidence with which to evaluate these programs rigorously (Dunnette & Bass, 1963; Haire, et al. 1967; Lawler, 1971). Furthermore, a number of experts have identified weaknesses in merit pay programs, and they

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contend that these programs can create motivational problems if the programs are improperly used (Meyer, 1975; Hills, 1979). Overall, we suggest the key issues for evaluating a merit pay system. Specifically, the efficacy of a merit pay program within the transit environment is addressed in this research. However, our methods are appropriate for studying merit pay systems in any environment, and we believe our results are typical of what might be found in many merit pay settings.

Scope of the research project

The general thrust of the research was to examine a merit pay system empirically within the context of a large organization. As Hills, et al. (1987) have outlined in a previous *Personnel Administrator* article, the evaluation of pay systems requires information about the organization's pay practices, as well as information about employees' and their attitudes toward the pay system. That is, any pay evaluation must, at a minimum, attempt to address two issues. First, it should determine sources of systematic variation and covariation in performance levels and pay increase levels. This is obviously important since reward programs should be contingent on performance and not other forces. Second, it is important to assess employee attitudes toward the merit system. Regardless of organizational decisionmakers' wishes or beliefs, the effectiveness of the system ultimately rests with employees: Do they perceive the merit program as an equitable method of allocating pay increases, and do they perceive their performance as the determinant of their pay increase? If employee do not value merit rewards

nor perceive merit pay to be associated with high performance, then it will not motivate.

Therefore, we propose the following as key research questions which need to be answered during an evaluation of merit pay program:

- Is there a relationship between performance appraisal scores and merit increases?
- Are either of these scores effected by biases which distorts or contaminates the relationship between pay and performance?
- Is there a relationship between employee attitudes and performance appraisal scores?
- To what extent do the distributions of these scores reflect potential problems?

Although funding sources dictated that this study be conducted with a transit organization, we believe our findings apply generally to the private sector. First, unlike some public sector organizations, transit authorities provide a readily identifiable service. In fact, urban transit operations were primarily privately held through the 1940's. Furthermore, there is a major push to return urban transit operations to the private sector. Second, the research team has worked extensively with pay systems in the private sector. As a result, one primary criterion for selecting the research location from more than 900 transit authorities was to identify a merit pay program that was "state-of-the-art" for both the public and private sectors. The location selected has a merit pay program that would be considered a "classic" program in either the private or public sector. Finally, this merit pay program covers non-union managerial, supervisory, professional and office workers. The nature of the work conducted at this level in the organization is similar across the public and private sectors.

Methodology

Research site

The research site is a large transit organization located on the West Coast. This organization employs more than 4,000 individuals, approximately 1,200 of which participated in the merit pay plan. This transit system maintains a fleet of more than 2,000 buses, and during the fiscal year 1984-85, it carried more than 400 million passengers.

This transit organization was selected from among 900 other transit authorities in the United States because: (a) it was large and, as a result, our data would be amenable to statistical analysis; (b) the transit authority had made a considerable

investment to establish a "workable" merit pay plan; (c) at the time of the study the organization had three years of experience with its "new" merit pay plan; (d) the system was willing to provide organizational records to our research team; and (e) the system was willing to allow us to survey employees to obtain their opinions about their work environment, in general, and the merit pay system in particular.

Profile of employees responding to the survey

More than 800 employees completed the survey questionnaire for 79 percent response rate. The age of respondents ranged from 26 to 67 years, with an average of 44.8 years. Respondents had an average length of service of 13.5 years, ranging from 1 to 44 years. Seventy-eight percent of the respondents were male, and 22 percent were female. A wide variety of ethnic backgrounds was represented: 26 percent were black, 55 percent white, 7 percent Asian/Pacific Islanders and 13 percent were Hispanic. Respondents also had a varied educational background: 8 percent held a high school diploma, 43 percent had some college, 21 percent had a college degree, 11 percent had some graduate work, and 15 percent held a graduate degree.

Description of the program

This transit organization has a merit pay program with two important, traditional elements. The first is an annual performance review conducted in June. The review summarizes employee performance levels from July 1 of the previous year through the review date. This performance review serves as the standard upon which the employee's merit increase is based. The second part of the program is the pay increase itself. The pay increase amount is dependent upon management's policy decision, and can and does vary from year to year. The individual receives his/her pay increase which goes into effect in July of the review year. This increase becomes part of the employee's base pay for future years.

Results

Performance appraisal scores

We investigated the distribution of performance appraisal scores within this organization. (Performance evaluation scores range from 1 to 5 with 1 being unsatisfactory, 2 needs

improvement, 3 competent, 4 superior, and 5 outstanding.) The descriptive statistics for this analysis appear in Figure 1.

One of the interesting observations about the data in Figure 1 is that the average performance appraisal score is slowly creeping up over time. In 1983, 39 percent of the employees were evaluated as superior and only 4 percent were evaluated as outstanding. By 1985, 45 percent were rated as superior and 8 percent were rated as outstanding. The average performance appraisal score for employees average: 3.46 in 1983, 3.50 in 1984, and 3.60 in 1985. The 1985 average score is statistically significantly higher than 1983 and 1984 scores ($F = 16.69, p = .0001$).

One of the important questions about performance appraisal scores in a merit pay context is: Do all supervisors give the same average appraisal score to their employees? For a merit pay increase to be effective, there must be perceived equity across supervisory units when allocating pay increases. This will not happen if some supervisors give their employees very high evaluations and other supervisors give their employees low evaluations. To test for this we examined the average performance appraisal score across supervisory units. To be sure that the data were not biased by supervisors with only one or two subordinates, we included only those supervisors who supervised four or more people.

Figure 2 indicates that there is significant variation in the average performance appraisal score that supervisors gave their employees. For example, in 1983 one supervisor gave his/her

employees a 2.8 average evaluation whereas another supervisor gave his/her employees an average evaluation of 4.5. For the year 1984 the minimum and maximum average evaluations were 3.00 and 4.43 respectively, while for the year 1985 these values were 3.00 and 4.80 respectively. Statistical tests of the variation in average performance appraisal scores by supervisor (Duncan/Scheffe tests) indicate that there are statistically significant differences in average performance scores across supervisors for each of the three years.

An intriguing finding of our study is that an employee's performance score is significantly related to the job worth score as measured by the job grade for each employees' position. The statistically significant correlations was $r = .12, .12,$ and $.08$ for the years 1983, 1984, and 1985, respectively. These results, while needing further investigation, suggest a form of systematic bias in performance evaluation scores.

Performance Evaluation - Pay Increase Correlation: One of the major tests of whether a merit pay system is working properly is if there is any correlation between performance appraisal scores of employees and the size of their pay increase. A significant association between performance appraisal score and percentage pay increase for all three study years was found ($r = .44$ in 1983, $r = .32$ in 1984, and $r = .73$ in 1985). However, the correlation only reaches meaningfulness in the year 1985. The 1983 and 1984 correlations, while statistically significant, suggest that there is not as clear a link between performance and pay increase

FIGURE 1
FREQUENCY DISTRIBUTION OF
PERFORMANCE APPRAISAL SCORES

| | Unsatisfactory | Needs Improvement | Competent | Superior | Outstanding |
|-------------|----------------|-------------------|-----------|----------|-------------|
| 1983 | | | | | |
| Number | 1 | 16 | 600 | 425 | 45 |
| Frequency | 0% | 1% | 55% | 39% | 4% |
| 1984 | | | | | |
| Number | 1 | 19 | 628 | 466 | 75 |
| Frequency | 0% | 2% | 53% | 39% | 6% |
| 1985 | | | | | |
| Number | 0 | 14 | 576 | 588 | 107 |
| Frequency | 0% | 1% | 46% | 45% | 8% |

FIGURE 2
AVERAGE PERFORMANCE APPRAISAL SCORE
FOR SUPERVISORS (AND VARIATIONS)

| Year | Number of Supervisors | Number of Subordinates | Average Evaluation Score | S.D. | Min. | Max. |
|------|-----------------------|------------------------|--------------------------|------|------|------|
| 1983 | 75 | 580 | 3.48 | .60 | 2.80 | 4.50 |
| 1984 | 82 | 653 | 3.49 | .63 | 3.00 | 4.43 |
| 1985 | 98 | 701 | 3.61 | .67 | 3.00 | 4.88 |

as might be desired by the pay-for-performance policy.

Employee attitudes toward merit pay system

Another important way to evaluate a merit pay system is to solicit employee opinions about it. We asked employees a series of questions to ascertain their attitudes toward the merit pay system. These questions, along with employee responses, are reported in Figure 3.

Attitudes Toward Performance Appraisal: Performance appraisals are a vital part of merit pay systems since appraisal drives the recommendations for a merit increase. Therefore, we asked a series of questions to determine employees' attitudes about the performance appraisal process. One of these questions asked the employee to indicate how satisfied he/she was with his/her last performance appraisal. The question, and employee responses, appear in item 1. (For these questions the abbreviation "SA" means Strongly Agree and the abbreviation "SD" means Strongly Disagree. The most interesting observation about the results concerning level of satisfaction with the last performance appraisal is that employees seem to fall into two extreme groups. There is a substantial proportion (21 percent) highly satisfied with their last performance appraisal. However, there is a substantial proportion (28 percent) highly dissatisfied with their performance appraisal. Clearly, employees are sharply divided in their attitudes toward satisfaction with their last performance appraisal.

Further insight into employees' attitudes about the performance appraisal process can be gleaned from the second item in Figure 3. Similar to the question about satisfaction with the

performance appraisal, employees are strongly divided in their attitudes toward consistency of performance appraisals. Twenty-one percent strongly agree that their last review is consistent with actual performance, while 28 percent strongly disagree with the statement. Further, the same employees who indicate strong satisfaction or dissatisfaction with item 1 are also the same ones that indicate strong satisfaction or dissatisfaction on item 2. The correlation of responses for the two questions is $r = .90$ ($p = .001$, $n = 827$).

While substantial groups of employees are not pleased with their assessed performance levels, further analysis reveals employees with the lowest appraisal scores are the most dissatisfied. This is borne out by the correlation statistic between items 1 and 2 with employees' actual appraisal scores. The correlation between performance appraisal score and satisfaction with evaluation received is $.64$ ($p = .0001$, $n = 698$). Similarly, the correlation between belief that the last evaluation was consistent with past job performance and actual appraisal score was $.62$ ($p = .001$, $n = 693$). In other words, employees with high appraisal scores thought their appraisals reflected their true performance, and they were satisfied with their appraisal from their supervisor. On the other hand, those employees who received low supervisory appraisals were dissatisfied with their appraisal and felt it did not reflect their true performance. At least two conclusions are possible from these results. First, if appraisal scores reflect true performance, then employees, while dissatisfied, have nothing to gripe about. Second, if appraisal scores are *not* reflective of true performance, then the merit pay system is creating undesirable dissatisfaction.

Attitudes Toward Merit Increases: There are several ways to find out how employees feel about

merit increases. One way is to ask employees whether merit increases, in general, are tied to performance level. This question was asked of employees in two different ways as shown in item 3 and item 4. The responses to these two questions provide startling results: 72 percent of the employees disagreed (to some extent) with the statement that merit increases accurately reflected their job performance. Employee responses to item 4 show very similar patterns of responses indicating that employees strongly disagreed with the assertion that merit raises reflect job performance. Thus, while there are some problems with the performance appraisals, there appear to be more problems with the merit allocation.

The questions discussed so far have asked

the employee to give their opinions about merit increases and performance. Yet another way for employees to assess their raises is to ask them to think about their raise relative to other employees. This was done with the question which appears in Figure 3 as item 5. Interestingly, there is not the same kind of extreme results when employees compared their own raises to those of other employees. In fact, employees are highly dispersed, ranging from 23 percent who strongly agreed (that they are disappointed with their raise when compared to what other employees received) to the 15 percent who strongly disagreed.

Supervisor Decision Rules for Pay Raises: Previous questions in this report indicated that employees felt considerable dissatisfaction with their last pay raises. The data also indicate that

**FIGURE 3
EMPLOYEE ATTITUDES TOWARD MERIT PAY PROGRAM**

| Question | SA' | MA | ?A | ?D | MD | SD | na |
|--|------------|------------|------------|------------|------------|------------|----------|
| 1) I am very satisfied with the last performance evaluation I received. | 174 21% | 144 17% | 103 12% | 72 9% | 78 9% | 228 28% | 30 4% |
| 2) My last performance evaluation was consistent with my job performance. | 172 21% | 143 17% | 105 13% | 80 10% | 72 9% | 229 28% | 32 4% |
| 3) Merit increases accurately reflect an individual's job performance. | 58 7% | 63 8% | 107 13% | 131 16% | 111 13% | 356 43% | 10 1% |
| 4) This organization gives pay increases on the basis of job performance. | 53 6% | 79 10% | 151 18% | 116 14% | 117 14% | 302 36% | 12 1% |
| 5) I was very disappointed with the size of my last pay increase when I think about what other employees received. | 190 23% | 87 10% | 125 15% | 133 16% | 112 13% | 125 15% | 69 8% |
| 6) In my job, all employees should get the same percentage pay increase. | 205 25% | 58 7% | 76 9% | 132 16% | 95 11% | 262 31% | 10 1% |
| 7) To be fair, everyone in my job should get the same pay increase. | 167 20% | 50 6% | 74 9% | 135 16% | 98 12% | 297 36% | 10 1% |
| 8) Pay increases should be based primarily on length of service. | 51 6% | 63 8% | 105 13% | 165 20% | 118 14% | 331 40% | 3 0% |
| 9) In my job, the largest pay increases should go to the most senior employees. | 37 4% | 41 5% | 66 8% | 176 21% | 120 14% | 387 46% | 9 1% |

'SA = Strongly Agree MA = Moderately Agree ?A = Somewhat Agree
 ?D = Somewhat Disagree MD = Moderately Disagree SD = Strongly Disagree

employees did not feel that their last performance evaluation reflected their true performance level. It is worth exploring, therefore, what criteria employees felt their supervisors used in making pay increase decisions. Surprisingly, employees ranked performance as the number one criteria that supervisors used to determine their past pay raise. Length of service, friendships and economic need were ranked second, third and fourth, respectively.

Employees' Criteria for Pay Increases: One of the most important questions which needs to be answered when evaluating a merit pay system is: Do employees want pay to be based on individual merit? Unfortunately, obtaining the answer is not easy since to disagree with the concept of merit is about as popular as disagreeing with motherhood and apple pie. Therefore, we asked a series of indirect questions which, along with employee responses, appear in Figure 3, items 6-9. Notice that the majority of the respondents (58 percent) disagreed with the idea of equal pay increases (item 6). Item 7 asks the same question in a slightly different way, and there is high consistency in the responses. Employees strongly disagreed with the notion that all employees should get equal pay raises. Items 8 and 9 ask employees if they would like pay raises based on seniority. Again, the data indicate there is strong disagreement with the use of seniority for granting pay increases. Based on these data we infer that employees do not wish pay increases to be based on alternative criteria. Further, employees appear to believe that supervisors do tend to use performance to make pay increase decisions. However, they apparently think that the supervisor's evaluations are biased since employees do not agree that their performance is reflected in their performance evaluation or in their merit pay increase.

Summary and conclusions

Three important conclusions for management can be drawn from this research. First, it is important to evaluate the pay-for-performance program just as one might audit the accounting books or inventory levels. Well designed programs undoubtedly may have dysfunctional properties, or as this study revealed, the program may not be

achieving the desired goals and objectives. For example, the finding of a weaker than expected link between performance evaluation score and percentage pay increase suggests the need for refinement of the program. On the other hand, the trends we found in the data suggest that the organization is on the right track strengthening this linkage.

Second, the evaluation process revealed that supervisors and line managers who administered the program may unintentionally (or intentionally, for that matter) introduce bias into the program. Thus, no matter how credible a job is done in designing the merit pay program, it is important to evaluate the program periodically for extreme differences in average ratings across supervisory groups or across departments.

Third, as the evaluation revealed, it is important to survey employee attitudes toward the program. What management thinks is happening in the pay-for-performance program and what is actually happening in the employees' view of things may be two different stories. Our analysis revealed this discrepancy, for example, by showing that employees believe in the concept of merit in general

and that employees believe that supervisors, in general, used merit. However, in their own individual cases, employees perceived that merit raises did not reflect their actual performance which created substantial dissatisfaction with the pay-for-performance program.

Clearly, more work is necessary to refine this particular merit pay program. However, dissatisfaction with a merit program is not necessarily bad. For instance, if it is the poorest performers who are dissatisfied with their pay increases and the highest performers who are most satisfied, then the system is working. In other words, the program is rewarding high performers and giving low performers the proper feedback. Low performers then have a choice of improving their performance or exiting the organization.

However, the value attributed to merit pay programs is in large part an act of faith.

In summary, we have suggested a general procedure for evaluating any merit pay program.² using the following steps: (1) an examination of the strength of the linkage between performance appraisal scores and merit increases; (2) an evaluation of the importance of sources of undesirable error variance (such as large differences between supervisory units or contamination by job grade bias); (3) an examination of the relationship between performance scores and attitudes to ensure linkage; and (4) an analysis of the distribution of attitudinal scores to check for possible polarization and employee dissatisfaction. ■

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