

WORKING PAPER SERIES

# Who's Contented Now? Gainsharing and the Paradoxical Female Worker

Mary E. Graham  
Theresa M. Welbourne

Working Paper 96-15



**WHO'S CONTENTED NOW?  
GAINSHARING AND THE PARADOXICAL FEMALE WORKER**

**MARY E. GRAHAM**

W. T. Beebe Institute of Personnel and Employment  
Relations and the Department of Management  
College of Business Administration  
Georgia State University  
Atlanta, GA 30303-3083  
404/651-1098

**THERESA M. WELBOURNE**

Department of Human Resource Studies  
School of Industrial and Labor Relations  
393 Ives Hall  
Cornell University  
Ithaca, NY 14853-3901

November 1996

This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of research, conferences, and projects available to others interested in human resource management in preliminary form to encourage discussion and suggestions.

<http://www.ilr.cornell.edu/CAHRS>

## **WHO'S CONTENTED NOW? GAINSHARING AND THE PARADOXICAL FEMALE WORKER**

The "paradox of the contented female worker" describes the phenomenon of women reporting higher work and life satisfaction levels than men, despite being objectively worse off than their male counterparts. Using models of pay satisfaction and theories of equity, distributive justice, and relative deprivation, we examined the existence of this paradox in four companies with gainsharing plans. Results confirm that the paradox prevails for all under traditional pay systems, but under gainsharing, there is no paradox for lower-paid employees and a strong paradox among higher-paid employees.

This research was supported in part by a research grant from the College of Business Administration of Georgia State University. This research was also supported by the Center for Advanced Human Resource Studies (CAHRS) of Cornell University's School of Industrial and Labor Relations. We would like to thank Vida Scarpello for comments on an earlier draft of this paper, and Linda Cyr for her assistance with the data.

There is mounting evidence that women tend to have higher work and life satisfaction than men, even though women are in many cases worse off than their male counterparts in terms of pay levels and career success (Crosby, 1982; Major & Konar, 1984; Major, 1994; Sauser & York, 1978; Steel & Lovrich, 1987). Crosby (1982) coined the term the "paradox of the contented female worker" to describe this phenomenon.

Women's participation in the workforce, and particularly in management, is at an all-time high (Fagenson, 1993), which suggests that gender differences in satisfaction may have important implications for organizations. Gender differences in = satisfaction may be particularly important today as companies are experimenting with new pay systems such as group- and team-based pay programs. Gender differences in pay satisfaction resulting from changes to traditional pay systems may lead to gender differences in other workplace attitudes or to changes in job behaviors such as absenteeism and turnover (Heneman, 1985), which may be at odds with other organizational human resource interventions, such as workforce diversity programs.

Even though the possibility of women's higher pay satisfaction levels has potentially significant consequences, research on gender differences in pay satisfaction is limited. Some evidence of higher pay satisfaction levels among women is provided by Varca, Shaffer, and McCauley, (1983), and Dreher (1981). In addition, documented gender differences in work and life satisfaction (Crosby, 1982; Major, 1994; Major & Konar, 1984; Miceli, Jung, Near & Greenberger, 1991; Sauser & York, 1978; Steel & Lovrich, 1987) suggest the potential for gender differences in pay satisfaction. There are theoretical reasons to expect such gender differences since a number of predictors of pay satisfaction have been delineated, along which men and women may differ. These predictors include structural variables such as salary level, human capital variables such as pay system knowledge, and psychological process variables such as the choice of referent standards by which pay is judged. These structural variables may be related to other workplace differences, such as differences in access to mentors or informal information networks, that could affect pay satisfaction levels.

Probably because the evidence on gender differences in pay satisfaction is limited, there is little research evidence on the stability of women's and men's relative pay satisfaction levels over time, should they exist. Such stability (or instability) would have important implications for organizations as well. If implementation of new pay systems can alter women's and men's relative pay satisfaction levels, companies trying to achieve organizational goals by altering compensation may unknowingly affect the success and survival of pay plan interventions themselves (Bowie-McCoy, Wendt, & Chope, 1993; Brown & Huber, 1992; Gerhart, Trevor, &

Graham, 1995; Milkovich & Milkovich, 1992; Santora, 1991; Welbourne, Balkin, & Gomez-Mejia, 1995). For example, if women become more dissatisfied with their pay under new pay programs such as gainsharing, they may choose to participate less in the suggestion programs that are often an integral part of gainsharing.

If, in fact, women have higher pay satisfaction levels than men under a traditional pay system in a particular organization, we posit that pay interventions may cause women's and men's pay satisfaction levels to become more similar. This would occur because pay interventions provide a way for women (and men) to learn more about their companies' pay structures through training, through organizational communications related to the pay intervention, and through greater opportunities for participation.

We compared the pay satisfaction levels of female and male employees under traditional pay (base pay plus merit raises) to those of employees under gainsharing programs (traditional pay plus gainsharing bonuses). Although gainsharing plans have existed since the 1930s, their use has increased in recent years (Lawler & Cohen, 1992; Markham, Scott, & Little, 1992). The design of these plans may ensure that gender-related changes in pay satisfaction levels occur for several reasons. First, the cross-functional work groups that underlie gainsharing programs can alter traditional patterns of gender-related occupational segregation, resulting in employees beginning to include information about those of the opposite sex in their judgments about their pay. Second, the high level of employee involvement under gainsharing makes the overall pay system particularly salient to employees, which may be a precursor to any changes in pay satisfaction levels. In fact, a number of compensation experts have said that high worker involvement is necessary for gainsharing to succeed (Graham-Moore & Ross, 1983, 1990; Hammer, 1988; Hills, Bergmann, & Scarpello, 1992).

Briefly, gainsharing systems such as the Scanlon Plan, which was developed by union member Joseph Scanlon in the 1930s, create committees of employees who screen and pursue implementation of employee suggestions (Welbourne & Gomez-Mejia, 1995). Goodman and Moore (1976) suggested that employee learning is enhanced under gainsharing because workers obtain information about the work environment and the tasks others perform. Consistent with this notion is Hanlon and Taylor's (1991) finding that after six months' experience with gainsharing, employee communication with peers, supervisors, and others significantly improved. In short, it seems reasonable that as women and men learn more about a pay system, learn more about co-workers' work inputs and outputs, and choose more similar referents against which to judge their pay, their pay satisfaction levels should become similar, all else being equal.

Our research contributes to gender-based literatures by studying women's and men's relative pay satisfaction<sup>1</sup> longitudinally and in a context in which it had not yet been researched. In addition, this study contributes to the growing literature on gainsharing by addressing the effects of gainsharing implementation on women and men. Much of what scholars know about gainsharing is based on a male standard because gainsharing systems have typically been implemented in manufacturing environments that tended to be dominated by men (Bullock & Bullock, 1982; Bullock & Lawler, 1984). Given the growing use of gainsharing in nontraditional environments in which there are many women, such as banks and hospitals (Welbourne & Gomez-Mejia, 1995), a more complete understanding of the effects of such interventions is critical.

In summary, our study provides the first empirical test of women's and men's relative pay satisfaction levels under gainsharing as opposed to traditional pay. This research also provides the first empirical test of the stability of relative female-male pay satisfaction levels. We examined employee responses to gainsharing interventions in four companies using a quasi-experimental design (Cook & Campbell, 1979). In two companies, we studied employee pay satisfaction levels before and after the introduction of gainsharing programs, and in the other two firms, we compared women's and men's pay satisfaction for control groups (no gainsharing plan) and experimental groups (a gainsharing plan introduced). This design permitted tentative causal inferences regarding the effects of information sharing and employee participation in the workplace on relative female-male pay satisfaction levels.

### **PAY SATISFACTION AND THE PARADOXICAL FEMALE WORKER**

As noted above, the paradox of the contented female worker refers to findings suggesting that women's satisfaction levels are higher than they should be, given their objective situations.<sup>2</sup> Pay satisfaction models (Heneman, 1985; Lawler, 1971; Miceli & Lane, 1991) include a number of explanations for this phenomenon, relying on theories of equity (Adams, 1965), distributive justice (Folger, 1986, 1987; Greenberg, 1990), and relative deprivation (Crosby 1976, 1982; Stouffer, Suchman, DeVinney, Starr, & Williams, 1949). These theories delineate several potential sources of pay satisfaction differences between women and men. These sources include gender differences in the following: human capital characteristics, demographic characteristics, pay level, and attitudes (Dyer & Theriault, 1976; Heneman, 1985); choice of referent standards (Crosby, 1976; Goodman, 1974; Sweeney, McFarlin, & Inderrieden, 1990; Zanna, Crosby, & Loewenstein, 1987); work experiences (Kanter, 1977); valuation of pay (Blau & Ferber, 1991; Nieva & Gutek, 1981); expectations regarding pay level

(Major, 1987); knowledge regarding pay systems (Major & Konar, 1984); valuation of work inputs (Major & Deaux, 1982); and willingness to trade pay for noncash rewards (Hollenbeck, Ilgen, Ostroff, & Vancouver, 1987; O'Neill, 1985).

Equity theory may be especially helpful in understanding gender differences in pay satisfaction. Equity theory describes the process by which individuals judge their pay by comparing their inputs (e.g., work effort) and outputs (e.g., bonuses received for effort) to their perceptions of others' input-output ratios. If individuals perceive that they and their referents are being treated relatively equally, they are satisfied (Adams, 1965). If they are treated worse, then they are dissatisfied. Research evidence suggests that perceived underpayment results in dissatisfaction and perceived equity or overpayment results in satisfaction (e.g., Bretz & Thomas, 1992; Miceli et al., 1991).

Thus, equity theory may help explain women's higher satisfaction in three ways. First, women may undervalue their work inputs. For example, if women do not believe that their skills are as valuable as the skills of their male co-workers (even when they are as valuable), they would perceive equity (i.e., pay satisfaction) at lower pay levels. Second, women may overvalue their outputs (what they received) or have broader definitions of outputs than men. For example, women may include noncash, intangible work outputs such as flexible scheduling in their input-output equations, which again might lead to perceived equity at lower pay levels. Of course, both of these avenues -- undervaluation of inputs and overvaluation of outputs -reflect women's perceptions relative to how their male co-workers perceive their own inputs and outputs.

Finally, women and men may compare their input-output ratios to different referent standards. If they use their own pay histories or women in general to judge their pay (e.g., Rotter, 1964), women would tend to perceive equity, or be satisfied, at lower pay levels than would men, since historically women have been paid less than men for their inputs, all else being equal (Cain, 1986; Groshen, 1990; Johnson & Solon, 1986). Or individuals may compare their pay to those who are most similar to themselves and closest to them -- typically co-workers of the same sex (Crosby, 1976; Goodman, 1974; Sweeney et al., 1990). This comparison is not set in stone, however. Hampton and Heywood (1993), in their study of one occupation (physicians), found that women accurately perceived their levels of underpayment and discrimination relative to their male peers.

One reason for the tendency toward same-gender comparisons may be gender-related occupational segregation (Major, 1994). Although occupational segregation occurs under both traditional and gainsharing pay systems, a single gainsharing plan can cover multiple

occupations, so interaction across occupations and employee identification with a larger, more occupationally diverse work group results. Training on the workings of a gainsharing bonus system and employee participation in suggestion systems and work committees, both of which occur across occupational groups, are integral to gainsharing (Hammer, 1988; Welbourne, et al. 1995). Generally, traditional pay systems do not require these efforts.

In sum, models and theories of satisfaction emphasize perceived work inputs and outputs and referent standards as determinants of pay satisfaction levels. Differences between traditional pay and gainsharing systems may create gender differences in these perceptions and referent standards. Thus,

Hypothesis 1: Among employees covered by traditional pay plans, women will have higher pay satisfaction levels than men.

Hypothesis 2: Among employees covered by gainsharing plans, women and men will not differ in pay satisfaction levels.

Support for the first two hypotheses would indicate that overall, women have higher pay satisfaction than men under traditional pay plans, but not under gainsharing plans. One way to strengthen the conclusion that differences in the two pay systems underlie differences in relative female-male pay satisfaction is to examine the results for the traditional group by salary level. Work on internal labor markets and research on gender suggest that higher female pay satisfaction (relative to men) may be more evident among lower-paid employees than among higher-paid employees, since women receiving low pay have the shortest career ladders, lowest pay levels, and lowest status of any other group in the workplace (Kanter, 1977; Ospina, 1996; Ryan, 1983). For example, compared to higher-paid women, women who receive low pay may have more difficulty than their male peers gaining pay system knowledge through contact with highly paid employees, fewer opportunities to network outside of their immediate occupational peer groups, and fewer opportunities to participate in career-enhancing programs such as mentoring. Because of these barriers and limited opportunities, lower paid women have less information about the work inputs and outputs of their male peers, and may use same gender referents more, than higher-paid women.

Hypothesis 3: Under traditional pay, the pay satisfaction of similarly situated women and men will differ more among lower-paid employees than among higher-paid employees.

We do not offer a corresponding hypothesis for gainsharing because we do not expect women's and men's pay satisfaction to differ by salary level under such plans. Since



gainsharing provides opportunities for information sharing and the formation of a wider group identity, we expect it to eliminate female-male pay satisfaction differences among all employees, as stated in Hypothesis 2.

Causal conclusions about gainsharing's ability to alter the conventional pattern of differential female-male pay satisfaction will be strengthened if we can rule out alternative explanations for such differences, between our traditional pay group and gainsharing group. One way of doing this is to distinguish gainsharing's impacts on four pay satisfaction components: (1) pay level, (2) pay structure and administration, (3) pay raises, and (4) benefits (Heneman & Schwab, 1985; Judge & Welbourne, 1994; Scarpello, Huber, & Vandenberg, 1988). Because we focus on gainsharing interventions that alter overall pay levels, we believe that satisfaction with the pay level, and pay structure and administration components is more likely to change as a result of interventions, than is satisfaction with pay raises and benefits. Overall pay levels for a particular year will increase as gainsharing bonuses are paid, and pay levels are directly related to overall pay satisfaction (Heneman, 1985). In addition, we expect that under gainsharing employees will gain additional knowledge regarding their organizations' pay structures through participation in gainsharing committees and in training sessions devoted to gainsharing. We do not expect pay raise satisfaction to change because raises are generally not related to gainsharing payouts and would be less likely to be the focus of information sharing among employees. Similarly, we do not expect change in benefits satisfaction, since gainsharing is unrelated to benefits levels, and in many organizations there is not as much variation in benefits as in pay (Hills et al., 1994). In sum, a number of studies have documented these different pay dimensions as discrete. The four pay dimensions are the focus of our next hypothesis, which examines differences between our two groups, in women's and men's relative pay satisfaction:

Hypothesis 4: Differences between the traditional group and the gainsharing group in women's and men's relative pay satisfaction will be larger for pay level and pay structure and administration, than for pay raises and benefits.

Our four hypotheses were tested with a sample of workers drawn from four companies that had implemented gainsharing. These workers and companies are discussed in more detail next.

## METHODS

### Sample

Our sample contains a traditional pay group and a gainsharing group. Employees of all four of the companies at which we collected data are represented in both the traditional pay

group and the gainsharing group. However, we obtained data from companies A and B using a pretest posttest design with no control group, and collected data from companies C and D using control and treatment groups, but no pretest data. Since the focus of our study was not to compare the effectiveness of the gainsharing plans, and because one company (B) had few women, survey data from all four companies were aggregated.<sup>3</sup> The traditional pay group consisted of 412 surveys, 43 percent of which were from women, for an overall survey response rate of 47 percent. The gainsharing group had 361 surveys, 49 percent of which were from women, for an overall response rate of 46 percent.

The compositions of the traditional and gainsharing groups by company are as follows, with gainsharing group percentages in parentheses: company A, 42 % (42 %); company B, 22% (19 %); company C, 14 % (13 %); and company D, 22 % (26 %). The compositions of the traditional and gainsharing groups by occupation are as follows, with the gainsharing group percentages in parentheses: craft/production, 44 % (40 %); clerical, 10 % (14 %); managerial/professional, 39 % (37 %); and other, 7 % (9 %). The average salary level was \$29,997 for the traditional pay group, with a range of \$7,155 to \$125,000; and it was \$30,076 for the gainsharing group, with a range of \$9,000 to \$175,000. In companies A and B, the two companies that had a pretest posttest design, raises were not given between the pretest and posttest and so base salary levels did not change. This was not an issue for companies C and D as control and treatment data were collected at the same point in time. The median company tenure was five years and seven years for the traditional pay and gainsharing groups, respectively. The median education level was "some college," meaning that individuals had more than a high school education but less than a four-year degree, for both the traditional pay and gainsharing groups.

Formal test of differences in the makeup of the traditional and gainsharing groups follow. Pearson chi-squared tests indicated that the company compositions, gender compositions, and occupational compositions of the traditional pay and gainsharing groups did not differ significantly. The results of t-tests of mean difference between the traditional and gainsharing groups on the variables of education and tenure were not significant ( $p < .05$ ), but those in the gainsharing group averaged 1.9 on more years of employment with their companies ( $p < .001$ ). Where data were available, we examined differences between the traditional and gainsharing groups on these variables by company, and these results indicated that the above test results were not due solely to the effects of one company.<sup>4</sup>

Information on differences between survey respondents and nonrespondents indicate some minor differences. Information on nonrespondents was not available for companies A and

B, but management indicated that the data appeared representative of the group covered by gainsharing. In company C, the chi-square distribution of respondents and nonrespondents in the traditional pay and gainsharing groups revealed no significant differences ( $p < .05$ ) for the gender variable. No other nonrespondent data was available from company C. In company D, a chi-square test of the gender distribution of respondents and nonrespondents revealed no difference ( $p < .05$ ) for either the traditional pay or gainsharing groups. The results of t-tests of means for respondents and nonrespondents on the variables of salary level and education revealed no difference for either group, and no difference in tenure for the traditional pay group. One difference was revealed between respondents and nonrespondents for the gainsharing group: respondents averaged two more years company tenure than nonrespondents ( $p < .05$ ). Table 1 provides summary information on the sample.

**TABLE 1**  
**Sample Size and Descriptive Statistics**

	All Companies Traditional	All Companies Gainsharing	Company A Traditional	Company A Gainsharing	Company B Traditional	Company B Gainsharing	Company C Traditional	Company C Gainsharing	Company D Traditional	Company D Gainsharing
Sample size	412	361	171	150	92	70	59	47	90	94
[Response Rate]	[47%]	[46%]	[85%]	[74%]	[78%]	[59%]	[70%]	[61%]	[19%]	[24%]
(% Female)	(43%)	(49%)	(49%)	(47%)	(14%)	(13%)	(59%)	(68%)	(50%)	(69%)
Pay Satisfaction Means (std. deviations):										
Overall	3.08 (.67)	3.12 (.64)	3.10 (.65)	3.20 (.63)	2.83 (.74)	2.87 (.68)	3.17 (.58)	3.09 (.58)	3.22 (.65)	3.19 (.63)
Women	3.23 (.62)	3.12 (.67)	3.20 (.63)	3.19 (.66)	3.48 (.81)	2.19 (.45)	3.18 (.54)	3.06 (.59)	3.25 (.59)	3.22 (.66)
Men	2.97 (.69)	3.11 (.62)	3.01 (.65)	3.21 (.60)	2.73 (.68)	2.97 (.66)	3.15 (.63)	3.14 (.57)	3.19 (.71)	3.12 (.57)
Salary Means (std. deviations):										
Overall	29,997 (16,737)	30,076 (18,041)	21,234 (11,018)	23,533 (12,106)	28,870 (9,920)	29,714 (9,887)	48,507 (19,327)	47,790 (20,121)	35,664 (17,584)	31,929 (22,830)
Women	26,289 (14,157)	26,560 (15,333)	18,048 (8,099)	19,056 (9,698)	20,538 (9,171)	21,667 (7,071)	41,910 (12,837)	43,154 (16,708)	40,144 (20,366)	27,266 (14,077)
Men	32,789 (17,974)	33,458 (19,768)	24,310 (12,538)	27,557 (12,685)	30,240 (9,403)	30,902 (9,726)	58,127 (23,143)	57,680 (23,625)	31,185 (13,023)	42,381 (33,386)

**Research Setting**

The four companies from which the sample was drawn all used gainsharing programs to supplement their traditional pay programs. These four gainsharing programs were similar in that they were based upon the concept of sharing revenue increases and cost reductions that result from improving production and other work processes with employees. The gainsharing programs were also similar in that they all relied upon employee involvement in one form or another to meet the goals included in the gainsharing formula or, in other words, to generate the revenues or cost savings to pay for gainsharing bonuses. Also, the introduction of all four gainsharing plans was accompanied by training on the workings of the new system. All four companies also had traditional pay programs that provided employees with base salaries plus annual merit raises that were rolled into base salaries.

The four companies differed in that they represented four different industries in three areas of the country. In addition, the four gainsharing bonus formulas had different criteria, thresholds, and payout schedules. Since our goal was not to compare gainsharing plans, but rather to compare women's and men's pay satisfaction levels under traditional pay and gainsharing, the diversity in the companies and in the details of their gainsharing strengthen our research conclusions. Table 2 summarizes the gainsharing programs of the four companies from which our sample is drawn.

TABLE 2

## Summary Description of Study Setting and Gainsharing Programs, by Company

	Company A	Company B	Company C	Company D
<b>Company Characteristics:</b>				
Industry	software manufacturing	consumer products (food products)	consumer products (paper products)	customs brokerage & freight forwarding
Location	western U.S.	western U.S.	midwest U.S.	northeast U.S.
<b>Gainsharing Program:</b>				
Type	Scanlon Plan	Improshare	customized Scanlon Plan	customized Scanlon Plan
Employee participation level	high	medium	medium	medium
Bonus formula components	revenues, expenses, customer service	revenues, expenses, safety, quality	revenues, expenses, customer service	revenues, expenses, quality
Payout schedule	quarterly	quarterly	annual	annual
Average bonus payout	\$474	\$2,620	\$1,200	\$100
Year implemented	1991	1991	1994	1994

Next, we present specific information about each company in five areas: (1) company background, (2) gainsharing introduction dates and data collection schedules, (3) the types of gainsharing programs, including levels of participation, (4) gainsharing bonus formulas and payout details, and (5) occupations covered by gainsharing. Both company A and company B are large firms, with each generating over one billion dollars in annual revenues in 1991, the year the data were collected. Company A is a software manufacturing firm and company B is a manufacturer of food products. Company C and company D are both Fortune 500 firms; company C produces consumer paper products, and company D is a customs brokerage and freight forwarding organization.

Second, both company A and company B implemented their gainsharing programs in 1991, and data were collected by survey in 1991 during on-site meetings with employees held both before the gainsharing program was introduced, and after three financial quarters had elapsed. Three years later, company C and company D implemented their gainsharing programs, and data were collected by surveys distributed by the companies in early 1995 to the following: (1) a control group that was not eligible for gainsharing, and (2) an equivalent treatment group that was covered by the gainsharing program. Company C's control and treatment groups each contained two departments, and company D's control and treatment groups each contained employees from three regions of the country.

Third, three of the four companies had Scanlon or customized Scanlon gainsharing programs, and the fourth used a version of gainsharing called Improshare. Specifically, company A's gainsharing program was modeled very closely on the Scanlon Plan (Frost, Wakely, & Ruh, 1974), and as such it stressed cost reduction and employee participation in the development and implementation phases of the program. The primary form of participation was a suggestion system, and suggestion activity was high, with 341 suggestions submitted and reviewed during the three quarters studied. In fact, suggestion committees were organized on the first day gainsharing was announced. The participative concept of gainsharing, the importance of active employee involvement, and the procedures for submitting and evaluating suggestions were explained to all employees and supervisors via formal training programs and other approaches (printed brochures, informal meetings, notice on bulletin boards, etc.).

In contrast, company B's gainsharing program was modeled closely on Improshare (Fein, 1991), which focuses less on cost reduction and more on productivity gains. In addition, there is generally less participation under Improshare than under Scanlon plans, and so there was less employee participation surrounding gainsharing in company B than in company A. Company B did have suggestion committees but suggestion levels were substantially lower than

at company A, with only 20 suggestions made during the three quarters during which this study took place. However, as in company A, employees participated in the design of the gainsharing program and in a number of training sessions regarding its operation.

Like company A, company C had a gainsharing program adapted from a Scanlon Plan, but as in Company B, the program did not have substantial employee participation component in the form of suggestion systems or teams. However, employees did receive extensive training from the company's human resources professionals regarding the goals and operation of the bonus program, and during the training the employees had opportunities to share information about the pay system. Company D's gainsharing plan was a customized Scanlon Plan much like company C's, with quality measures included in the bonus formula and a moderate level of employee participation. To support gainsharing, the company implemented weekly team meetings so employees could discuss ways to improve performance. In addition, there were training programs associated with the gainsharing's introduction as well as substantial internal publicity.

Fourth, all companies' gainsharing bonus formulas contained the components of revenues and expenses, and two gainsharing formulas included quality components. Company A's gainsharing bonuses were awarded when a historical base of net revenues was exceeded. The plan also incorporated a customer service "gate," a provision that prevented bonus payouts unless previous customer service levels, as measured by customer surveys, were met or exceeded. Company B's gainsharing formula included revenues, expenses, quality, and safety. The safety component of company B's gainsharing program operated similarly to company A's customer service gate; employees had to maintain adequate safety levels in order to earn gainsharing bonuses. Company C's bonus formula consisted of revenues, expenses, and customer service. Gainsharing bonuses were paid when net shipments reached a target level, or business unit margins exceeded 80% of target, or both. Company D's gainsharing bonus formula consisted of revenues, expenses, and quality measures. Gainsharing bonuses were paid when net operating income targets were met. Companies A and B paid gainsharing bonuses quarterly, and companies C and D paid gainsharing bonuses annually. The companies varied in average gainsharing bonus payouts, ranging from company D's small average bonus of \$100 per year to company B's average quarterly bonus of \$2,620. All four companies paid gainsharing bonuses as equal percentages of base salaries.

Fifth, each of the four companies' gainsharing programs covered somewhat different employee groups. In company A, employees covered by gainsharing were service, maintenance, security, and managerial employees, whereas in company B, gainsharing covered



production supervisors and employees in the skilled crafts and machine operation areas. Company C's gainsharing plan covered employees in the areas of artistic design and production supervision, including management. Company D's gainsharing program covered employees in a broader range of occupations, including administration, sales, order processing, and supervision.

## Measures

The dependent variable used for testing the hypotheses is a standardized overall pay satisfaction index composed of the 18 items of the Pay Satisfaction Questionnaire (PSQ; Heneman & Schwab, 1985). Subsets of these 18 items measure several dimensions, or components, of pay: pay level, pay structure and administration, pay raises, and benefits, and were used to create standardized indexes for each of these four components. These indexes were used in the analyses as well. For the traditional pay group, the reliability (coefficient alpha) for overall pay satisfaction (18-item PSQ for the four companies in this study) was .90. For the gainsharing group the reliability of this overall pay satisfaction measure was .91. For all four of the pay satisfaction component measures, the reliabilities were .80 or above for both the traditional pay and the gainsharing groups.<sup>5</sup>

The key independent variable used in our ordinary least squares (OLS) regression analyses was a gender dummy variable. Other independent variables used in the analyses include important structural determinants of pay satisfaction (Heneman, 1985), including salary levels (Dreher, 1981), companies (Scarpello, et al, 1988), company tenure (Dreher, 1981), educational levels (Ronan & Argant, 1973), and occupations (Scarpello et al, 1988). Specifically, salary level is measured as a standardized continuous variable constructed from self-reported data in companies A, B, and C, and from the company records of company D. For company D, the only company from which we have two sources of salary data, the correlations between self-reported salary and company salary records were .99 and .96 for the traditional pay and gainsharing groups, respectively.

Company tenure is a standardized continuous variable measured as self-reported years with the company. Self-reported education level was measured on a continuous scale ranging from 1 (high school education or less) to 4 (four-year degree or more), which was created by collapsing and standardizing multiple educational categories from the four companies. Since self-reported occupational categories were not identical across companies, and some categories held few observations, we created four common occupational categories across all four companies: clerical/administration, production, managerial/professional, and other.<sup>6</sup>

In addition to these independent variables, several control variables were used in the analyses. We included dummy variables for employer (company A, B, C, or D) to hold constant employer-specific characteristics such as work culture and the years in which data were collected (1991 for companies A and B; 1995 for companies C and D).

In the gainsharing group, we used a measure of gainsharing satisfaction to control for differences between women and men in satisfaction with the intervention, that could affect their overall pay satisfaction. For example, if women as a group disliked gainsharing, this could explain women's lower (or equal) pay satisfaction relative to men in the gainsharing group. Gainsharing satisfaction was measured as standardized indexes of responses to seven statements in companies A and B and similar statements in companies C and D. An example is, "I am satisfied with the gainsharing plan." The average overall reliability (coefficient alpha) for this measure, weighted by company sample size, was .86. The appendix presents the items in these indexes.

### ANALYSES

As stated earlier, our four hypotheses were tested in a sample that aggregates employee survey data from all four companies. We performed ordinary least squares (OLS) regression analyses on the dependent variable of overall pay satisfaction (Hypotheses 1, 2, 3), and separate OLS regression analyses on the dependent variables of pay level satisfaction, pay structure and administration satisfaction, pay raise satisfaction, and benefits satisfaction (Hypothesis 4), using two models:

$$\begin{aligned}
 \text{Pay Satisfaction} &= \text{Gender } X_1 + \text{Company } X_2 \\
 &+ \text{Salary } X_3 + \text{Tenure } X_4 + \text{Education } X_5 \\
 &+ \text{Occupation } X_6 + [\text{Gainsharing Satisfaction } X_7] + \mathbf{m}
 \end{aligned}
 \tag{1}$$

$$\begin{aligned}
 \text{Pay Satisfaction} &= \text{Gender } X_1 + \text{Company } X_2 \\
 &+ \text{Salary } X_3 + \text{Tenure } X_4 + \text{Education } X_5 \\
 &+ \text{Occupation } X_6 + [\text{Gainsharing Satisfaction } X_7] + \\
 &+ \text{Gender*Salary } X_8 + \mathbf{m}
 \end{aligned}
 \tag{2}$$

In these models, pay satisfaction is the 18-item Heneman and Schwab (1985) standardized pay satisfaction index, gender is a dummy variable (men=0), company is represented by four dummy variables (company A=0), salary is standardized continuous salary level, tenure and education are self-reported, standardized, continuous variables, and occupation is represented

by four dummy variables (production=0). Gainsharing satisfaction is bracketed to indicate it is used only for the gainsharing group in both models. Model 2 adds a gender\*salary interaction to model 1.

We tested Hypotheses 1 and 2 by examining the gender coefficient from the regression results for model 1 for the traditional pay and gainsharing groups, respectively. A positive and significant coefficient implies that women have higher pay satisfaction than men. We tested Hypothesis 3 by examining the coefficient on the gender\*salary interaction of model 2 for the traditional pay group. A significant gender\*salary coefficient would require the interaction to be plotted to determine the nature of the interaction, or, in other words, to determine at what salary levels gender differences in pay satisfaction levels occur (Cohen & Cohen, 1983). Both models include the following controls for possible structural reasons behind the gender differences in pay satisfaction: company, salary level, company tenure, education level, and occupational membership. We tested Hypothesis 4 by comparing the gender coefficients from regression results for model 1, for our two groups, for four separate dependent variables: (1) pay level satisfaction, (2) pay structure and administration satisfaction, (3) pay raise satisfaction, and (4) benefits satisfaction. The differences in the coefficients on gender between the traditional pay group and the gainsharing group should be greater for pay level, and pay structure and administration satisfaction, than for pay raises and benefits satisfaction.

## RESULTS

Table 3 presents correlations, means, and reliabilities of the variables used in the analyses. Table 4 presents regression results for both groups (traditional pay and gainsharing) for model 1 only, with model 2 results described in the text.<sup>7</sup>

**TABLE 3**  
**Pearson Correlation Coefficients and Variable Means**  
**(Bottom Half=Traditional Pay Group Correlations**  
**Top Half=Gainsharing Group Correlations)**

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. Pay satisfaction (overall) <sup>f</sup>		.81***	.80***	.81***	.42***	.01	.10*	-.19**	-.02	.06	.05	.03	-.05	.07	-.02	-.01	-.09+	.43***
2. Pay level satisfaction <sup>f</sup>	.83***		.57***	.70***	.03	-.08	-.13*	.10+	.04	.03	.16**	.06	.01	-.04	-.04	.07	-.01	.23***
3. Pay structure satisfaction <sup>f</sup>	.85***	.62***		.62***	.07	-.13*	.09+	.09+	-.15**	-.07	.01	-.11*	-.12*	.14**	-.03	-.10+	-.04	.40***
4. Pay raise satisfaction <sup>f</sup>	.85***	.68***	.66***		.03	-.06	-.01	.13*	-.04	-.07	.06	-.06	-.05	.04	-.10+	.01	.04	.31***
5. Benefits satisfaction <sup>f</sup>	.50***	.18***	.24***	.25***		.30***	.33***	-.80***	.09+	.28***	-.07	.16**	.01	.04	.10+	-.02	-.20***	.27***
6. Sex (1=women)	.19***	.14**	.21***	.13**	.07		-.03	-.35***	.15**	.24***	-.19***	.05	-.01	-.07	.30***	-.07	-.13*	-.03
7. Company A (1=yes)	.03	.08	.07	.08	-.13**	.10*		-.41***	-.33***	-.50***	-.30***	-.02	-.30***	.31***	-.12*	-.18**	-.03	.39***
8. Company B (1=yes)	-.19***	-.18***	-.24***	-.13**	.03	-.31***	-.45***		-.19***	-.29***	-.01	-.24***	-.12*	.08	-.11*	-.10+	.23***	-.17**
9. Company C (1=yes)	.05	.12*	-.03	.03	-.02	.14**	-.34***	-.22***		-.23***	.38***	.17***	.36***	-	-.01	.14**	.00	-.12*
10. Company D (1=yes)	.11*	-.01	.19***	.02	.15**	.08	-.45***	-.28***	-.22***		.06	.10*	.17**	-	.23***	.18**	-.18**	-.19***
11. Salary level (annual dollars)	.11*	.16**	.01	.05	.09+	-.19***	-.44***	-.04	.45***	.18***		.26***	.42***	-	-.22***	.54***	-.07	-.07
12. Company tenure (years)	.05	.12*	-.03	.00	.04	.07	-.07	.25***	.40***	.00	.49***		.08	-	.00	.16**	-.05	.02
13. Education level (1=low to 4=high scale)	.03	.08	.00	.04	-.05	-.07	-.31***	-.16**	.37***	.23***	.48***	.11*		-	-.06	.47***	-.11*	-.15**
14. Production occupation (1=yes)	-.19***	-.18***	-.14**	-.14**	-.12*	-.05	.29***	.14**	-.22***	-.29***	-.42***	-.28***	-.40***		-.30***	-.57***	-.23***	.20***
15. Clerical occupation (1=yes)	.17**	.12*	.20***	.11*	.07	.31***	.02	-.07	-.03	.07	-.19***	.05	-.14***	-	-.29***		-.12*	-.08
16. Professional occupation (1=yes)	.11*	.14**	.05	.06	.08+	-.08+	-.29***	-.16**	.24***	.31***	.57***	.19***	.51***	-	-.26***		-.22***	-.08
17. Other occupation (1=yes)	-.05	-.01	-.04	.01	-.03	-.09+	.08	.01	.05	-.15**	-.02	.16**	.03	-	-.09+	-.21***		-.03
Means (standard deviations) Traditional Pay Group	3.08 (.67)	2.86 (1.02)	2.86 (.75)	2.83 (.90)	3.87 (.89)	.43 (.50)	.42 (.49)	.22 (.42)	.14 (.35)	.22 (.41)	29,997 (16,737)	6.28 (5.16)	2.48 (1.22)	.42 (.49)	.10 (.31)	.37 (.48)	.07 (.26)	---
Means (standard deviations) Gainsharing Group	3.12 (.64)	2.99 (1.04)	2.92 (.71)	2.98 (.93)	3.67 (1.07)	.49 (.50)	.42 (.49)	.19 (.40)	.13 (.34)	.26 (.44)	30,076 (18,041)	8.16 (6.86)	2.45 (1.23)	.37 (.48)	.13 (.34)	.35 (.48)	.08 (.28)	3.03 (.89)

Significance levels: + p < .10      \* p < .05      \*\* p < .01      \*\*\* p < .001      a 5-point scale, with 1=very dissatisfied and 5=very satisfied

**TABLE 4**  
**Regression Coefficients (std. Error) and Fit Statistics for Overall Pay Satisfaction <sup>a</sup>**

Variables	(a) Traditional Pay (n=412)	(b) Gainsharing n=361
Sex (women= 1)	.32** (.11)	-.06 (.11)
Company A	.00 (.00)	.00 (.00)
Company B	-.43 * * (.13)	-.18 (.14)
Company C	-.18 (.18)	.18 (.18)
Company D	-.06 (.14)	.37** (.13)
Salary level <sup>a</sup>	.27*** (.08)	.10+ (.06)
Company tenure <sup>a</sup>	-.16* (.07)	-.04 (.04)
Education Level	-.09 (.06)	-.06 (.06)
Occupation: Craft/production	.00 (.00)	.00 (.00)
Clerical	.59*** (.17)	-.09 (.15)
Managerial/professional	.22 (.14)	-.15 (.13)
Other	.24 (.20)	-.19 (.17)
Gainsharing satisfaction <sup>a</sup>	n/a	.43*** (.05)
Intercept	-.22 * (.11)	.06 (.10)
R <sup>2</sup>	.12	.23
F for model	5.38***	9.63***

<sup>a</sup> Variable is standardized.

n/a = variable not included in model

Significance levels:

+ p < .10

\*\* p < .01

\* p < .05

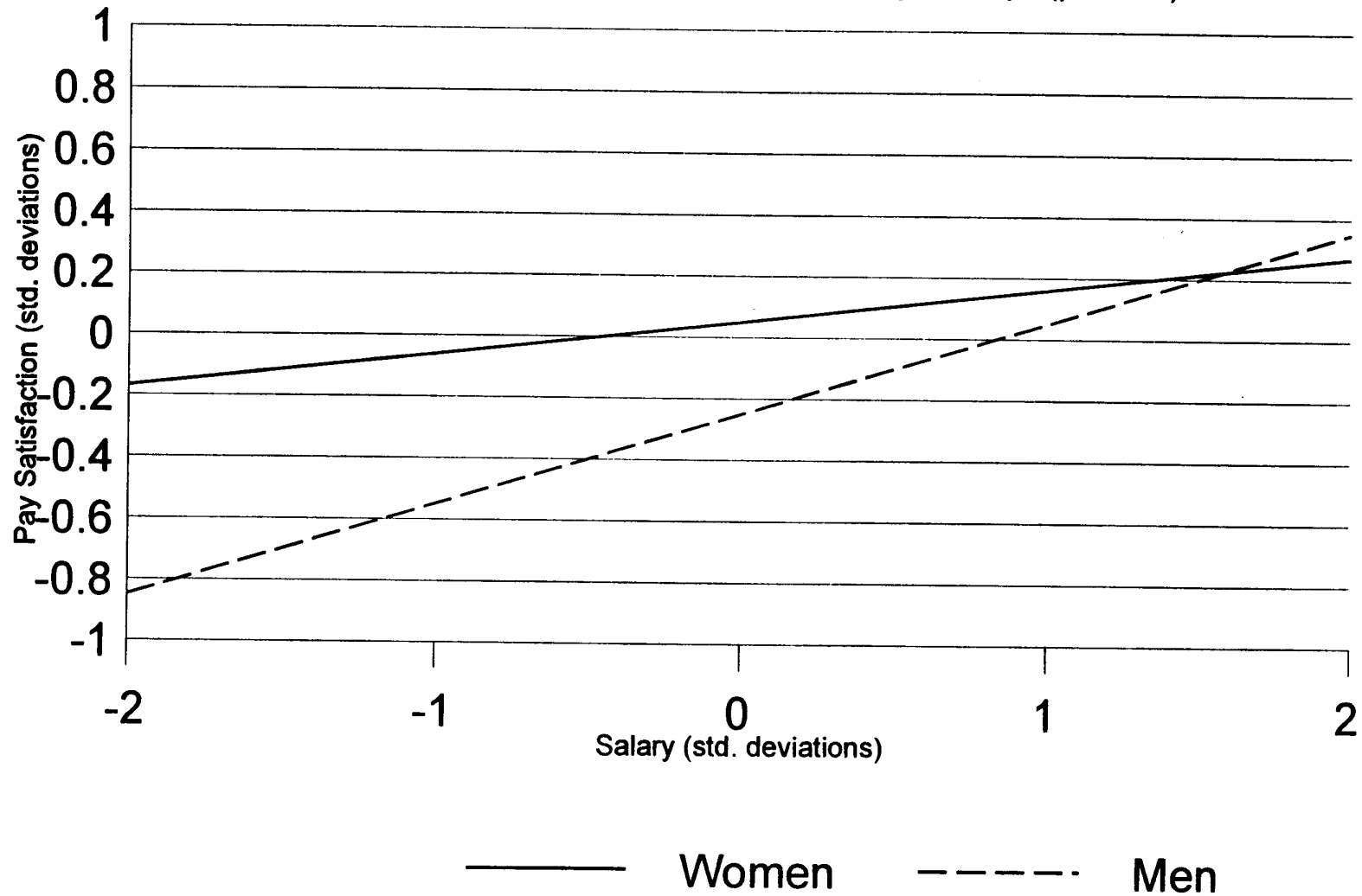
\*\*\* p < .001

Hypothesis 1, predicting that women will have higher pay satisfaction levels than men in the traditional pay group, was supported. The traditional pay group regression revealed significant and positive coefficients on gender, which indicates that women's pay satisfaction was higher than men's (Table 4), all else being equal. Specifically, women reported .32 standard deviations higher pay satisfaction levels than men ( $p < .01$ ), while controlling on company, salary level, company tenure, education level, and occupation.

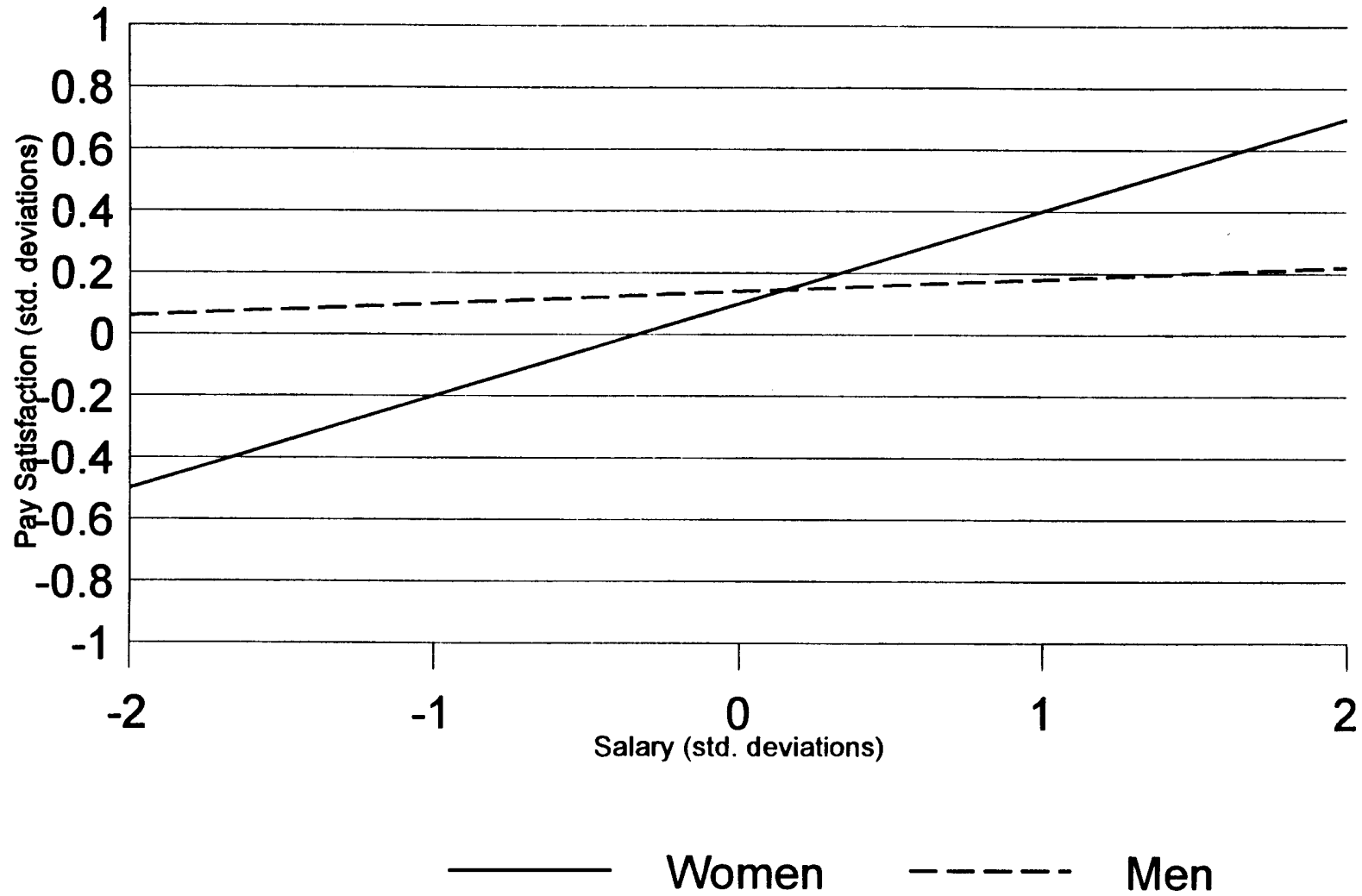
Hypothesis 2, which posits that among employees covered by gainsharing, women and men will not differ in pay satisfaction, was also supported. In model 1 results for the gainsharing group (Table 4), the gender coefficient was not significant, which indicates that on the whole, women and men did not differ in their pay satisfaction levels in the presence of gainsharing.<sup>8</sup>

Hypothesis 3, which predicts that higher female pay satisfaction levels will be more evident with lower-paid women, was partially supported. The interaction between gender and salary in the traditional pay group (Model 2) was marginally significant ( $p < .10$ ), and the plot of this interaction (see Figure 1) indicated that it was in the hypothesized direction. By way of comparison, we also examined the gender by salary interaction for the gainsharing group. Unexpectedly, this interaction was significant at the .01 level. A plot of the interaction indicated that lower-paid women had lower pay satisfaction than their male peers under gainsharing; however, higher-paid women were more satisfied than their male peers under gainsharing (see Figure 2).

FIGURE 1  
Gender\*Salary Interaction for Traditional Pay Group (p < .10)



**FIGURE 2**  
**Gender\*Salary Interaction for Gainsharing Group (p < .01)**





Hypothesis 4, which states that differences between our gainsharing and traditional pay groups in women's and men's pay satisfaction will be most evident for the pay satisfaction components of pay level and pay structure, was supported. Table 5 presents the gender coefficients from regression results pertaining to Hypothesis 4.

**TABLE 5**  
Differences in Relative Female/Male Pay Satisfaction Levels  
between Traditional Pay and Gainsharing Groups  
for Overall Pay Satisfaction

Dependent Variable (standardized)	(a) Sex Coefficient <sup>a</sup> (std. error) for Traditional Pay Group Model 1	(b) Sex Coefficient <sup>a</sup> (std. error) for Gainsharing Group Model 1	(c) Change in Sex Coefficient <sup>b</sup> (column a - column b)
Overall Pay Satisfaction	.32** (.11)	-.06 (.11)	-.38**
Pay Satisfaction Components: <sup>c</sup>			
Pay Level Satisfaction	.23* (.11)	-.07 (.12)	<b>-.30**</b>
Pay Structure Satisfaction	.30** (.11)	-.14 (.11)	<b>-.44**</b>
Pay Raise Satisfaction	.23 * (.11)	.07 (.12)	<b>-.16</b>
Benefits Satisfaction	.17 + (.10)	-.01 (.08)	<b>-.18</b>

<sup>a</sup> = sex coefficient is from OLS regression model containing independent variables of sex, company, salary level, company tenure, education, occupation, and for column b, gainsharing satisfaction. The sex variable is measured as a dummy variable with women coded as 1, men as 0.

<sup>b</sup> = significance of difference in coefficients is assessed by a t-test, with alpha set at .01, with significance indicated by "\*\*".

<sup>c</sup> = complete regression results for the four pay satisfaction components (pay level, pay structure, pay raises, and benefits) are not presented due to space limitations, but are available upon request.

**Bold** = figures used to test Hypothesis 4.

Regression results indicate that there were differences in women's and men's relative pay satisfaction levels between the gainsharing and traditional pay groups on two components of pay satisfaction: pay level and pay structure. For pay level, the gender coefficient was lower in the gainsharing group than in the traditional pay group by .30 standard deviations ( $p < .01$ ), and for pay structure and administration satisfaction, the gender coefficient was lower in the gainsharing group by .44 standard deviations ( $p < .01$ ). Such figures indicate that on these two pay satisfaction variables, women in the gainsharing group were less satisfied than the women in the traditional pay group, when both groups of women are assessed relative to their male coworkers. It should be noted that women covered by gainsharing did not experience lower pay level, and pay structure and administration satisfaction than women in the traditional pay group; rather, women in the gainsharing group reported lower pay satisfaction relative to their male peers, in the gainsharing group. We did not find differences in relative pay satisfaction in the pay raise satisfaction and benefits satisfaction components, as hypothesized.<sup>9</sup>

## DISCUSSION

Two main findings emerge from our examination of changes in women's and men's pay satisfaction levels stemming from gainsharing interventions in four companies. First, higher female pay satisfaction levels appeared to exist among employees who were paid under traditional pay systems, and were not (or not yet) the recipients of gainsharing interventions, holding company, salary level, company tenure, education level, and occupation constant. These higher female pay satisfaction levels were slightly stronger among lower-paid women. Second, the paradox did not appear to exist among women and men who were subject to the gainsharing interventions; however, further examination indicated that this was true only of lower-paid women. Both of these important findings are discussed in turn.

### Paradox Confirmed and Examined

The first part of this study sought to determine whether the pay satisfaction of women was higher than that of men, among employees paid under traditional pay systems and under gainsharing programs in four organizations. Our intent was not to fully explain differences in pay satisfaction between women and men; rather, our purpose was to document relative female-male pay satisfaction rates and their stability in the face of gainsharing interventions. With the traditional pay group, we confirmed Crosby's paradox of the contented female worker; women reported higher pay satisfaction levels than their male co-workers, even though it could be argued that as a group, they might have been less well off than those coworkers.

We found evidence that the paradox was driven in part by the relative pay satisfaction levels of lower-paid women. This finding is consistent with the argument that lower-paid women may have the fewest opportunities and lowest status in organizations, which limits their knowledge about their pay systems or leads them to choose pay referents of the same gender. However, the marginal significance of this finding suggests that these barriers may exist for more highly paid women as well, to a certain extent.

### **Gainsharing Interventions Eliminate Paradox Among Lower-Paid Employees**

For the first time there is evidence that it may be possible to alter relative female-male pay satisfaction levels by way of organization-level interventions. Women in the traditional pay group were more satisfied than their male counterparts, all else being equal, but this was not true of the gainsharing group. Further examination revealed that in fact the paradox was nonexistent only for lower paid women, who reported lower pay satisfaction than their male peers under gainsharing, all else being equal.

We infer that the apparent elimination of Crosby's paradox among lower paid employees covered by gainsharing was due to such factors as gender differences in pay referents that the two pay groups used, rather than dissatisfaction with the gainsharing interventions themselves. Our rationale is as follows. First, we controlled for satisfaction with gainsharing, so any gender differential in pay intervention satisfaction should not be reflected in the gender coefficient of the gainsharing group regression. Also, examination of raw means on gainsharing satisfaction indicated that lower-paid women and men (workers with salaries below the median) did not differ significantly in their satisfaction with the gainsharing interventions.

Second, we have some limited descriptive information that indicates that women and men participated equally in the gainsharing programs. With only minor exceptions lower-paid women and men indicated similar participation rates and offered similar numbers of suggestions under all of the gainsharing programs.<sup>10</sup> Third, changes in relative female-male pay satisfaction levels did not occur with raises and benefits, but did occur with pay level, and pay structure and administration, the two components that are most directly affected by gainsharing programs. This finding strengthens our contention that gainsharing interventions were the catalyst for changes in relative female-male pay satisfaction, for two reasons. First, that the same pattern was not found with all four pay satisfaction components is evidence that sample selection bias was not occurring between our two groups. Second, the fact that the strongest results were found in the components most directly affected by gainsharing argues against the possibility that

other organizational interventions or workplace trends were behind the differences in results between our two groups.

One alternative explanation for the absence of higher female pay satisfaction levels among lower-paid employees in the gainsharing group is that female and male satisfaction levels are regressing to mean levels of satisfaction for a population of workers, independently of the gainsharing interventions (Cohen & Cohen, 1983). In fact, plots of the gender by salary interactions are consistent with a regression to the mean explanation in that under gainsharing, the pay satisfaction of women at lower pay levels approaches and even passes that of the pay satisfaction of lower-paid men in traditional pay systems, and vice versa (see Figure 1 and Figure 2). However, we disagree that regression to the mean is occurring, for several reasons. First, we can infer from the gainsharing and pay satisfaction literatures discussed earlier that women's and men's pay satisfaction rates may become more similar under a group-based pay plan such as gainsharing. Second, the use of four companies decreases the likelihood that the pay satisfaction measures in our two groups represent the random variations characteristic of regression to the mean. Third, while there may well be a common mean level of pay satisfaction for women and men in similar situations in organizations, it could be argued that currently women's and men's experiences in work and non-work settings are so different that a substantial, possibly economy-wide, jolt may be needed to equalize their pay satisfaction (Crosby, 1982; Major, 1989).

Another alternative explanation for our findings is that the introduction of these performance-based pay programs actually made the pay systems more difficult to understand than they had been before (Brown & Huber, 1992), which might explain the lower-paid women's decrease in pay satisfaction levels relative to their male peers. This is a possibility given our earlier discussion of lower-paid women's low status and lack of opportunities in organizations. We were able to measure pay system knowledge in companies C and D, and there were no significant gender differences in pay system knowledge within either the traditional pay or gainsharing groups, among workers with salaries below the median for these companies. We should note too that pay system knowledge may be affected by some of the gender-related processes that are behind gender differences in pay satisfaction; that is, women under traditional pay may tend to report higher pay system knowledge than their male peers, all else being equal, and women under gainsharing may realize how much they do not know about their pay through the gainsharing intervention and its corresponding training and participation requirements. In addition, there were no gender differences in gainsharing satisfaction among

lower paid workers in the gainsharing group, as might be expected in the presence of gender differences in pay system knowledge.

One of the more intriguing results of this study is that among higher-paid employees, there is an apparent paradox of the contented female worker, or alternatively, a paradox of the discontented male worker (Figure 2). This is a complicated finding to interpret; however, additional perspective can be gained by comparing Figure 2 with the marginally significant interaction in Figure 1 for the traditional pay group. This comparison reveals that higher paid women were more satisfied under gainsharing than under traditional pay plans, and higher-paid men were not. One explanation for this finding (a necessarily tentative explanation given that this result was not hypothesized) is that higher-paid women perceive the formalization of pay rules in a gainsharing formula as a means to level the playing field for and improve opportunities for success for themselves, since women are traditionally at a disadvantage among the informal interpersonal networks in organizations (e.g., Northcraft & Gutek, 1993). This formalization of rules may result in higher paid women's having greater satisfaction with their pay than comparable men. But higher-paid men, who are used to working informal networks to their advantage, may dislike sharing the wealth with their female counterparts, so their satisfaction with their pay is lower than women's. A related explanation is that women may value group- or team-based pay programs more than men, whereas men may value individual-based pay systems. Such differences may stem from women's and men's different experiences or psychological tendencies, or both (e.g., Bem, 1993; Gilligan, 1982). However, these explanations raise a question as to why this phenomenon emerged only at higher salary levels.

We argue that this gender difference in pay satisfaction among higher-paid employees should be labeled a "paradox of the discontented male worker" rather than the paradox of the contented female worker. Our reasoning is as follows. The pay satisfaction literature has documented that salary levels tend to be positively correlated with pay satisfaction levels (Heneman, 1985), and the gainsharing literature indicates that gainsharing tends to positively affect workplace attitudes (Welbourne & Gomez-Mejia, 1995). Consistent with these literatures, we find that women's salaries were positively correlated with pay satisfaction and higher-paid women had higher pay satisfaction under gainsharing, than under traditional pay. Higher-paid men, however, did not have higher pay satisfaction under gainsharing and their salaries were not correlated with pay satisfaction. While lower-paid women also did not have substantially higher pay satisfaction under gainsharing, their pay satisfaction levels under gainsharing were consistent with the positive correlation between salary and pay satisfaction found in the literature. Thus, the remarkable part of this gender by salary interaction in the gainsharing group

is the "low" pay satisfaction of higher-paid men, given that it could be argued that they are objectively better off than many other employee groups. On the other hand, perhaps downsizings and trends toward flatter organizations have hit higher-paid men particularly hard, relative to their situations in organizations prior to these occurrences (e.g., Meyer, 1995). Perhaps higher-paid men view gainsharing as part of these overall trends and an additional threat to their well-being in organizations.

Consistent with Major (1994), our findings do not support Crosby's (1982) and Major's (1989) speculation about the stable, or fairly permanent, relationship between women's and men's pay satisfaction, because gainsharing, a firm-level intervention, appears to alter the equation. This conclusion is consistent with the related perspectives of pay satisfaction models, equity theory, distributive justice, and relative deprivation, which provide a number of ways that pay satisfaction and by extension, the relative pay satisfaction of women and men, can change. The failure of our control variables to explain away the gender differences in pay satisfaction is consistent with other pay satisfaction research that has found a relatively small relationship between these variables with pay satisfaction (Dreher, 1981; Dyer & Theriault, 1976; Heneman, 1985; Scarpello, et. al, 1988).

## Implications

Alterable female-male pay satisfaction levels may be somewhat troubling for employers implementing supplemental, performance-based pay programs. If women, in particular those at lower pay levels, become more dissatisfied (relative to men) when gainsharing is introduced, it would most likely be an unintended consequence of the intervention. Similarly, the dissatisfaction of higher-paid men relative to higher-paid women might also be an undesired consequence of innovative pay programs. There is no evidence that these secondary, gender-related effects of pay program intervention outweigh potential performance gains, or even overall pay satisfaction gains from these programs, yet the findings may challenge employers who are unaware of this possible gender effect. This study suggests some positive effects of gainsharing on pay satisfaction, namely substantial increases in pay satisfaction for lower paid male workers and higher paid female workers.

Supporters of compensation *innovations* often find or suggest that increased employee participation in and knowledge of pay systems can enhance productivity and satisfaction (for an exception, see Major, 1989: 112). For example, Jenkins and Lawler (1981) found that employee participation in the design of a compensation system raised pay satisfaction levels. Rice and colleagues (1990: 392) suggested publicizing pay information in order to lower the standards by

which employees judge their pay, and Greenberg and McCarty (1990: 279) concluded that studies of open pay systems "clearly demonstrate workers' positive reactions" to such systems. Similarly, Miceli (1993) suggested that greater openness regarding pay levels in organizations (i.e., elimination of pay secrecy) would result in higher pay satisfaction levels.

Our results are not inconsistent with these findings in that plots of the gender by salary interaction for the gainsharing group (Figure 2) indicated that both women and men had higher pay satisfaction levels in the presence of gainsharing than under traditional pay, all else being equal. However, pay satisfaction models and related theories suggest caution in making assumptions that pay satisfaction will increase under such compensation changes, because employee judgments regarding their pay are based upon complex processes. Our findings also suggest caution in that all groups did not receive the same bump in pay satisfaction with gainsharing. Thus, a more accurate response to the question of what happens to pay satisfaction levels, and in particular, relative female-male pay satisfaction levels following pay interventions may be, "it depends." Additional research is needed to further specify the conditions under which pay satisfaction does in fact increase and the conditions under which women's and men's relative pay satisfaction levels may change differentially.

## CONCLUSION

This study provides the first indication that pay interventions such as gainsharing can alter relative female-male pay satisfaction levels, which may have important implications for organizations. Our findings can serve as a foundation for future research on pay satisfaction and in particular, gender differences in pay satisfaction. In addition, this study highlights the importance of comparing women's and men's pay satisfaction by salary level. Future research may want to address two limitations of our study. First, as stated earlier, the data precluded direct testing of some of the explanations for the differences in women's and men's pay satisfaction among the two groups studied. Second, we were not able to implement a quasi-experimental pretest posttest design with a control group in all four companies; such a design would help strengthen our conclusions (Cook & Campbell, 1979). Future research on this topic would provide much needed information for employers and compensation professionals seeking to maximize the benefits of supplemental pay-for-performance programs such as gainsharing, and lead to a greater understanding of the theoretical basis for differences and changes in women's and men's relative pay satisfaction.

## REFERENCES

- Adams, J.S. 1965. Inequity in social exchange. In L. Berkowitz (Ed.), Advances in experimental social psychology, 2: 267-299. New York: Academic Press.
- Bern, S.L. 1993. The lenses of gender. New Haven, CT: Yale University Press.
- Blau, F.D. & Ferber, M.A. 1991. Career plans and expectations of young women and men. The earnings gap and labor force participation. The Journal of Human Resources, 26: 581-607.
- Blau, F.D. & Ferber, M.A. 1992. The economics of women, men, and work (2d ed.). Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Blau, F.D. & Kahn, L. 1992. The gender earnings gap: Learning from international comparisons. American Economic Review, 82: 533-538.
- Bowie-McCoy, S.W., Wendt, A.C., & Chope, R. 1993. Gainsharing in public accounting: Working smarter and harder. Industrial Relations, 32: 432-445.
- Bretz, R.D. & Thompsett, R.E. 1992. Comparing traditional and integrative learning methods in organizational training programs. Journal of Applied Psychology, 77: 941-951.
- Brown, K.A. & Huber, V. 1992. Lowering floors and raising ceilings: A longitudinal assessment of the effects of an earnings-at-risk plan on pay satisfaction. Personnel Psychology, 45: 279-311.
- Bullock, R.J. & Bullock, P.F. 1982. Gainsharing and Rubik's cube: Solving system problems. National Productivity Review, 1(4): 396-407.
- Bullock, R.J. & Lawler, E.E. III. 1984. Gainsharing: A few questions and fewer answers. Human Resource Management, 23(1): 23-40.
- Cain, G.G. 1986. The economic analysis of labor market discrimination: A survey. In O. Ashenfelter & R. Layard (Eds.), Handbook of Labor Economics. Amsterdam: North-Holland.
- Cook, T.D. & Campbell, D.T. 1979. Quasi-experimentation. Design & analysis issues for field settings. Boston, MA: Houghton Mifflin Company.
- Crosby, F. 1976. A model of egoistic relative deprivation. Psychological Review, 83: 85-113.
- Crosby, F. 1982. Relative deprivation and working women. New York: Oxford University Press.
- Dreher, G.F. 1981. Predicting the salary satisfaction of exempt employees. Personnel Psychology, 34: 579-589.
- Dyer, L. & Theriault, R. 1976. The determinants of pay satisfaction. Journal of Applied Psychology, 61: 596-604.



- Fagenson, E.A. 1993. Diversity in management: Introduction and the importance of women in management. In E. Fagenson (Ed.), Women in management. Trends issues and challenges in managerial diversity: 3-15. Newbury Park, CA: SAGE Publications, Inc.
- Fein, M. 1991. Improshare: A technique for sharing productivity gains with employees. In Rock, M.L. & L.A. Berger (Eds.), The compensation handbook (3d ed.): 158-175. New York: McGraw-Hill, Inc.
- Folger, R. 1986. A referent cognitions theory of relative deprivation. In J.M. Olson, C.P. Herman, & M.P. Zanna (Eds.), Relative deprivation and social comparison: The Ontario symposium. volume 4. Hillsdale, NJ: Lawrence Erlbaum, Associates, Publishers.
- Folger, R. 1987. Reformulating the preconditions of resentment: A referent cognitions model. In J.C. Masters and W.P. Smith, Social Comparison, Social Justice, and Relative Deprivation: 183-215. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Frost, C., Wakeley, J., & Ruh, R. 1974. The Scanlon plan for organization development: Identity, participation, and equity. East Lansing, MI: Michigan State University Press.
- Gerhart, B., Trevor, C.O. & Graham, M.E. 1996. New directions in compensation research: Synergies, risk, and survival. In G. Ferris (Ed.), Research in personnel and human resources management, 14: 143-203.
- Gilligan, C. In a different voice: psychological theory and women's development. Cambridge, MA: Harvard University Press.
- Goldin, C. 1990. Understanding the gender gap: An economic history of American women. New York: Oxford University Press.
- Goodman, P.S. 1974. An examination of referents used in the evaluation of pay. Organizational Behavior and Human Performance, 3: 340-352.
- Goodman, P.S & Moore, B.E. 1976. Factors affecting acquisition of beliefs about a reward system. Human Relations, 29: 571-588.
- Graham-Moore, B.E. & Ross, T.L. 1983. Productivity gainsharing: How employee incentive programs can improve business performance. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Graham-Moore, B.E. & Ross, T.L. 1990. Gainsharing: Plans for improving performance. Washington, D.C.: Bureau of National Affairs.
- Greenberg, J. 1990. Organizational justice: Yesterday, today, and tomorrow. Journal of Management, 16: 399-432.
- Greenberg, J. & McCarty, C.L. 1990. Comparable worth: A matter of justice. Research in personnel and human resources management, 8: 265-301.
- Groshen, E. 1990. The structure of the female/male wage differential: Is it who you are, what you do, or where you work? The Journal of Human Resources, 26: 457-472.

- Hammer, T. 1988. New developments in profit sharing. In J. Campbell, R. Campbell & Associates (Eds.), Productivity in organizations: 328-366. San Francisco: Jossey-Bass.
- Hampton, M. & Heywood, J.S. 1993. Do workers accurately perceive gender wage discrimination? Industrial and Labor Relations Review, 47: 36-49.
- Hanlon, S.C. & Taylor, R.R. 1991. An examination of changes in work group communication behaviors following installation of a gainsharing plan. Group and Organization Studies, 16: 238-267.
- Heneman, H.G. 1985. Pay satisfaction. In K.M. Rowland & G.R. Ferris (Eds.) Research in personnel and human resources management, 3: 115-139. Greenwich, CT: JAI Press.
- Heneman, H.G. III & Schwab, D.P. 1985. Pay satisfaction: Its multidimensional nature and measurement. International Journal of Psychology, 20, 129-141.
- Hills, F.H., Bergmann, T.J. & Scarpello, V.G. 1994. Compensation decision making (2d ed.). New York, NY: The Dryden Press.
- Hollenbeck, J.R., Ilgen, D.R., Ostroff, C., & Vancouver, J.B. 1987. Sex differences in occupational choice, pay, and worth: A supply-side approach to understanding the male-female wage gap. Personnel Psychology, 40: 715-743.
- Jenkins, G.D. & Lawler, E.E. III. 1981. Impact of employee participation in pay plan development. Organizational Behavior and Human Performance, 28: 111-128.
- Johnson, G. & Solon, G. 1986. Estimates of the direct effects of comparable worth policy. American Economic Review, 76: 1117-1125.
- Judge, T.A. & Welbourne, T.M. 1994. A confirmatory investigation of the dimensionality of the pay satisfaction questionnaire. Journal of Applied Psychology, 79: 461-466.
- Kanter, R.M. 1977. Men and women of the corporation. New York: Basic Books.
- Lawler, E.E. III. 1971. Pay and organizational effectiveness: A psychological view. New York: McGraw-Hill.
- Lawler, E.E. III & Cohen, S.G. 1992. Designing a pay system for teams. American Compensation Association Journal, 1(1): 6-19.
- Major, B. 1987. Gender, justice, and the psychology of entitlement. In P. Shaver & C. Hendrick (Eds.), Review of personality and social psychology: Sex and gender, 7: 124-148. Beverly Hills, CA: Sage.
- Major, B. 1989. Gender differences in comparisons and entitlement: Implications for comparable worth. Journal of Social Issues, 45: 99-116.
- Major, B. 1994. From social inequality to personal entitlement: The role of social comparisons, legitimacy appraisals, and group membership. Advances in Experimental Social Psychology, 26: 293-355 .

- Major, B. & Deaux, K. 1982. Individual differences in justice behavior. In J. Greenberg & R. Cohen (Eds.), Equity and justice in social behavior. New York: Academic Press, 43-76.
- Major, B. & Konar, E. 1984. An investigation of sex differences in pay expectations and their possible causes. Academy of Management Journal, 27: 777-792.
- Markham, S.E., Scott, K.D., & Little, B.L. 1992. National gainsharing study: The importance of industry differences. Compensation and Benefits Review, 24(1): 34-35.
- Meyer, G.J. 1995. Executive blues: down and out in corporate America. New York, NY: Franklin Square Press.
- Miceli, M.P. 1993. Justice and pay system satisfaction. In Cropanzano, R. (Ed.), Justice in the workplace. Approaching fairness in human resource management: 257-283. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Miceli, M.P., Jung, I., Near, J.P. & Greenberger, D.B. 1991. Predictors and outcomes of reactions to pay-for-performance plans. Journal of Applied Psychology, 76: 508-521.
- Miceli, M.P. & Lane, M.C. 1991. Antecedents of pay satisfaction: A review and extension. Research in personnel and human resources management, 9: 235-309.
- Milkovich, G. & Milkovich, C. 1992. Strengthening the pay-performance relationship: The research. Compensation and Benefits Review, 24(6): 53-62.
- Nieva, V.F. & Gutek, B.A. 1981. Women and work: A psychological perspective. New York: Praeger.
- Northcraft, G.B. & Gutek, B. 1993. Point-counterpoint: Discrimination against women in management -- Going, going, gone or going but never gone? In E. Fagenson, (Ed.) Women in management. Trends, issues and challenges in managerial diversity: 219-245. Newbury Park, CA: SAGE Publications, Inc.
- Orazem, P.F. & Mattila, P.J. 1989. Comparable worth and the structure of earnings: The Iowa case. In R.T. Michael, H.I. Hartmann, & B. O'Farrell (Eds.), Pay equity empirical inquiries. Washington, DC: National Academy Press.
- Ospina, S. 1996. Illusions of opportunity. Employee expectations and workplace inequality. Ithaca, NY: ILR Press, an imprint of Cornell University Press.
- Ronan, W.W. & Argant, G.J. 1973. Determinants of pay and pay satisfaction. Personnel Psychology, 26: 503-520.
- Rotter, J.B. 1954. Social learning and clinical psychology. Englewood Cliffs, NJ: Prentice-Hall.
- Ryan, M.P. 1983. Womanhood in America: From colonial times to the present. New York: Franklin Watts.
- Santora, J.E. 1991. DuPont returns to the drawing board. Personnel Journal, 70(2): 34-36.

- Sauser, W. & York, M. 1978. Sex differences in job satisfaction: A reexamination. Personnel Psychology, 31: 537-547.
- Scarpello, V., Huber, V.L., & Vandenberg, R. 1988. Pay satisfaction: Its measurement and dimensionality. Journal of Applied Psychology, 73: 163-171.
- Steel, B.S. & Lovrich, N.P., Jr. 1987. Comparable worth: The problematic politicization of a public personnel issue. Public Personnel Management, 23-36.
- Stouffer, S.A., Suchman, E.A., DeVinney, L.C., Starr, S.A. & Williams, R.M. 1949. The American soldier: Adjustment during army life (Vol. 1). Princeton, NJ: Princeton University Press.
- Sweeney, P.D., McFarlin, D.B., & Inderrieden, ET 1990. Using relative deprivation theory to explain satisfaction with income and pay level: A multistudy examination. Academy of Management Journal, 33: 423-436.
- Varca, P. E., Shaffer, G. S., & McCauley, C. D. 1983. Sex differences in job satisfaction revisited. Academy of Management Journal, 26: 348-353.
- Welbourne, T.M., Balkin, D.B., & Gomez-Mejia, L.R. 1995. Gainsharing and mutual monitoring: A combined agency-organizational justice interpretation. Academy of Management Journal, 38: 881-899.
- Welbourne, T.M. & Gomez-Mejia, L.R. 1995. Gainsharing: A critical review and a future research agenda. Journal of Management, 21: 559-609.
- Zanna, M.P., Crosby, F., & Loewenstein, G. 1987. Male reference groups and discontent among female professionals. In B. Gutek & L. Larwood (Eds.), Women's career development, pp. 28-41. Newbury Park, CA: Sage.

## APPENDIX

The reliability (coefficient alpha) for the gainsharing satisfaction index was .77 for company A and .95 for company B. The items comprising the gainsharing satisfaction indexes for companies A and B, which are on a 5-point strongly disagree to strongly agree scale, are as follows:

- I am satisfied with the gainsharing plan.
- I am satisfied with the bonus formula.
- I am satisfied with the suggestion committees.
- My company should continue the gainsharing program.
- The gainsharing plan is good for managers.
- The gainsharing plan is good for non-managers.
- The gainsharing plan is good for all employees in corporate services.

The reliability (coefficient alpha) for the gainsharing satisfaction index was .94 for company C and .85 for company D. The items comprising the gainsharing satisfaction indices for companies C and D, which are on a 5-point very dissatisfied to very satisfied scale, are as follows:

- How the gainsharing plan is administered.
- The gainsharing plan.
- The gainsharing formula (Company D only).
- The way in which our gainsharing bonus is calculated.
- Size of the gainsharing payment (Company D only).
- My most recent gainsharing payment.

## ENDNOTES

<sup>1</sup> By "women's and men's relative pay satisfaction" or "relatively higher female pay satisfaction" we mean comparisons of women's and men's pay satisfaction levels. We opt for this terminology over the term "paradox of the contented female worker" in order to assist readers in understanding our findings in pay satisfaction language.

It should also be noted that we do not directly measure the extent to which individual women in our sample are "worse off" than their male counterparts as is stated in the definition of the paradox; rather, we rely upon literature that says that as a group, women still receive lower rewards in the workplace than men, a finding that is not explained away by measurable job-related or human capital factors (Blau & Kahn, 1992; Cain, 1986; Ospina, 1995; Orazem & Mattila, 1989). This approach is in keeping with other literature on the paradox that does not measure directly differences in workplace outcomes between similarly situated individual women and men (e.g., Crosby, 1982).

<sup>2</sup> Although the paradox focuses on women, in actuality it reflects a difference between women's and men's pay satisfaction levels. There is documented correlation between individuals' objective states (e.g., salaries received) and their attitudes (e.g., pay satisfaction) (Dyer & Theriault, 1976; Heneman, 1985). Lacking any objective standard for judging this relationship (i.e., what makes a pay satisfaction level "too high" relative to actual pay?), the literature discussing this correlation uses a male standard. Crosby (1982) based the paradox terminology upon a finding that women's relatively high satisfaction appeared at odds with their low objective states, when compared to men's satisfaction with their own objective states. In fact, the paradox of the contented female worker could be relabeled the "paradox of the discontented male worker" and still describe the same satisfaction rates found in the literature.

<sup>3</sup> The results for each company are available from the authors.

<sup>4</sup> Results of formal tests of differences in the distributions on these variables by company are available from the authors.

<sup>5</sup> Specifically, the traditional pay group reliabilities were as follows: pay level satisfaction, .95; pay structure and administration satisfaction, .84; pay raise satisfaction, .80; and benefits satisfaction, .93. For the gainsharing group, reliabilities were as follows: pay level satisfaction, .95; pay structure and administration satisfaction, .82; pay raise satisfaction, .81; and benefits satisfaction, .91.

<sup>6</sup> Observations in the "other" category come from Companies A, B, and C. Possible occupations represented in this category include staff members not considered to be clerical, sales and marketing employees who would not necessarily classify themselves as professionals, and people in support functions to production, such as shipping and receiving.

<sup>7</sup> The results for Models 1 and 2 are very similar. Complete regression results for Model 2 are available from the authors.

<sup>8</sup> The control variables of company, salary level, company tenure, education, and occupation are not major contributors to the differences in pay satisfaction between women and men found for the traditional pay group. A simple regression of sex on overall pay satisfaction levels for the traditional pay group revealed a sex coefficient of .39 ( $p < .001$ ), or .07 standard deviations above the .32 sex coefficient ( $p < .01$ ) for the traditional pay group, a non-significant difference. However, these structural variables did add explanatory power to this simple regression of sex on pay satisfaction levels as evidenced by a significant increase in RZ of .08 ( $p < .001$ ).

<sup>9</sup> In addition to results presented, additional analyses were performed with the salary variable for companies A and B adjusted from 1991 to 1995 dollars. No significant differences between these results and results presented in this paper were found. In addition, analyses were performed excluding those in the "other" occupational category and again, there were no substantial differences from the results reported in this paper.

<sup>10</sup> Differences in participation levels were assessed with alpha set at .05. The two minor exceptions to the conclusion that lower-paid women and men participated equally in gainsharing are as follows. In company C, women were more likely to submit formal suggestions than men. Conversely, in company D men were more likely to submit formal suggestions. In all companies, women and men did not differ in their likelihood of submitting informal suggestions.