



## RESEARCH PAPERS

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# ***Predicting Employee Attitudes and Performance from Perceptions of Performance Appraisal Fairness***

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### **Abstract**

*Organizations develop performance appraisal systems to motivate and reward employee performance; however, effectiveness of the appraisal system depends on employee reactions to the appraisal process and the outcomes they receive. The public service agency in this study developed a performance appraisal system to increase and reward employee productivity. After a two-year trial, the agency wanted to examine employees' support for continuing the appraisal process. Thus, this setting offers a rare opportunity to examine how employee perceptions of performance appraisal fairness (procedural, distributive, and interactional) predicted employee reactions to the system including employee performance, organizational commitment, supervisory satisfaction, job satisfaction, and pay satisfaction. Findings show procedural fairness is a significant predictor of each of the dependent variables, while distributive fairness predicts performance and organizational commitment. Interactional fairness predicts supervisory satisfaction and organizational commitment.*

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### **Introduction**

A major concern of public service agencies is controlling costs while improving the quality and number of services provided. One widely accepted notion for improving individual performance is tying pay to performance. According to Lawler (1990), "in many re-



spects an effective formula-driven pay for performance system is the most credible because it is an automatic way to ensure that pay and performance are in fact related" (p. 19).

This study examines employee perceptions of a formula-driven performance appraisal system implemented by a large public service agency in the Southeast. The system was designed to link pay to performance in order to increase employee productivity. At the end of a two-year trial of the appraisal system, administrators asked the researchers to evaluate employee attitudes of the system, including perceptions of fairness to determine if employees wanted to continue the appraisal system.

The administrators who developed the system understood that research has consistently demonstrated that reliability and validity alone are insufficient to ensure the success of a performance appraisal system (Bernardin & Beatty, 1984; Cascio, 1981; Lawler, 1967), and the concept of fairness applies whenever resources are allocated among individuals (Rawls, 1971). Employee perceptions of fairness are often critical to appraisal acceptance and success (Jawahar, 2007; Narcisse & Harcourt, 2008; Landy, Barnes, & Murphy, 1978). Research suggests if employees perceive that the appraisal system is unfair: a) they may be less willing to modify their behavior according to performance feedback (Ilgen, Fisher, & Taylor, 1979); b) they may be less accepting of financial incentives tied to performance criteria; and c) the appraisal system may lead to decreased motivation, turnover, and dissatisfaction with the organization (Dobbins, Cardy, & Platz-Vieno, 1990). Many organizations routinely use performance appraisal scores to determine the distribution of pay, promotions, and other rewards; however, few organizations attempt to evaluate how employee perceptions of performance appraisal fairness impact employee attitudes and performance.



The study's objective is to determine if employee perceptions of procedural, distributive, and interactional fairness of the appraisal system predict employee goal attainment (job performance), job satisfaction, pay satisfaction, satisfaction with one's supervisor, and organizational commitment.

### Previous Research

A number of studies over the years examined appraisal fairness. Fairness was initially defined as distributive fairness, "the degree to which rewards and punishments are related to performance inputs" (Price & Mueller, 1986, p. 123). Equity theory (Adams, 1965), the theoretical foundation of distributive fairness, is based on the premise that each employee determines the fairness of his allocations, by comparing the ratio of his relative inputs and outcomes to the inputs and outcomes of others (see also Salimaki, Hakonen, & Heneman, 2009; Scott, Colquitt, and Paddock, 2009). The greater the similarity, the more satisfied the persons are and when inequities are perceived, employees make behavioral and psychological adjustments to resolve perceived inequities, including responses to appraisal systems (Greenberg, 1990); therefore, perceptions of fairness are likely to influence attitudes toward the organization and employee performance.

The earliest studies focused on defining characteristics of the appraisal process that influenced perceptions of distributive fairness; however, findings were inconclusive, but researchers discovered that perceptions of fairness depended on process variables (Landy, Barnes & Murphy, 1978; Landy, Barnes-Farrell & Cleveland, 1980). In 1981, Dipboye and de Pontbriand found that employees were more receptive to negative evaluations when they perceived that the appraisal process was fair, thus providing the first evidence of two distinct types of fairness, distributive and procedural, in



the context of performance appraisals. Extending this research, Greenberg (1986) confirmed the existence of the constructs of distributive and procedural fairness by using open-ended questionnaires and a Q-sort technique. Procedural fairness is concerned with the procedures and policies used to determine outcomes, such as the performance appraisal score (Cloutier & Vilhuber, 2008; Greenberg, 1986; Scott et. al., 2009; Thurston & McNall, 2010). Some studies suggest that employees are more concerned with the fairness of procedures than the outcomes of the appraisal process (Greenberg, 1987; Lau and Moser, 2008; Lind & Tyler, 1988). Although most research examines three types of justice: distributive, procedural, and interactional, recently researchers have suggested there may be four distinct justice types: distributive, procedural, interactional, and informational (Ambrose & Shminke, 2009; Jawahar, 2007; Thurston & McNall, 2010).

One stream of research investigated employees' ability to distinguish sources of procedural fairness: organizational policies, procedures, appeals, and supervisory fairness in conducting the appraisal (Bies & Shapiro, 1987; Cobb, Vest, Hills, Fry, & Tarnoff, 1991; Moorman, 1991; Thurston & McNall, 2010). Subsequently, the fair treatment of employees by agents of the organization was identified as a third type of fairness, interactional fairness (i.e., actions taken by managers as they implement organizational procedures) (Loi, Yang, & Diefendorff, 2009; Thurston & McNall, 2010). The existence of interactional fairness is confirmed in legal settings (Tyler, 1987), although few studies have examined interactional fairness in organizational settings (Cobb, et al., 1991; Jawahar, 2007; Thurston & McNall, 2010). Interactional fairness is important because it recognizes that supervisors can influence employee attitudes through interpersonal treatment (Ambrose & Schminke, 2009; Jawahar, 2007; Loi et. al., 2009; Moorman, 1991; Thurston & McNall, 2010).



Another research stream attempted to identify how perceptions of fairness affect employee attitudes. Alexander and Ruderman (1987), while investigating perceptions of procedural and distributive fairness, found that procedural fairness contributed more to attitudes toward the job satisfaction, evaluation of supervisors, conflict, and trust in management, while distributive fairness had a stronger relationship with intentions to leave the organization (Cloutier & Vilhuber, 2008; Chiaburu & Lim, 2008).

Konovsky, Folger, & Cropanzano, (1987) found that procedural fairness is more important to organizational commitment, and distributive fairness is more important to pay satisfaction (Cloutier & Vilhuber, 2008; Chiaburu & Lim, 2008) and satisfaction with the rating received (Jawahar, 2007). Employees who believe the procedures are fair also experience higher commitment with their organizations and, consequently, perform better (Lau and Moser, 2008).

Later research, including additional outcome variables, found that procedural fairness is important to trust in one's supervisor (Chiaburu & Lim, 2008), and distributive fairness is important to satisfaction with a pay raise (Folger & Konovsky, 1989). These findings were supported in a study by McFarlin & Sweeney (1992) which demonstrated that perceptions of distributive fairness are more highly correlated with pay satisfaction and promotion satisfaction, while procedural fairness is more important for organizational commitment and other attitudes requiring a longer perspective (Folger & Konovsky, 1989; Konovsky, Folger, & Cropanzano, 1987; Greenberg, 1987; Lind & Tyler, 1988).

In addition to examining the main effects of procedural and distributive fairness, a few studies found an interaction effect between procedural and distributive fairness (Cropanzano & Folger, 1989; Greenberg, 1987;



McFarlin & Sweeney, 1992). If employees believe the procedure itself is fair, they may be willing to accept some injustice in the outcomes (Sabeen & Mehboob, 2008). Interactions suggest that when procedures are perceived as fair, even if rewards are low, employees are likely to have higher commitment and that when procedures are perceived as unfair and rewards are low, commitment is likely to be low (Lau & Mosser, 2008). Employees are also less likely to blame their organization for low rewards if procedures are found to be fair (Lau, Wong, & Eggleton, 2008).

Managers are concerned with how perceptions of fairness affect employee reactions to the appraisal system and subsequently affect satisfaction, commitment, and performance, yet few field studies have examined these relationships (Jawhar, 2007; Thurston & McNall, 2010). Now field research must determine how different types of fairness impact various attitudes and performance (Folger & Konovsky, 1989; Jawahar, 2007; Thurston & McNall, 2010). This study provides the opportunity to examine the impact of employee perceptions of procedural, distributive, and interactional fairness on organizational commitment, job satisfaction, pay satisfaction, satisfaction with one's supervisor, and performance. Based on previous research, the following propositions are examined:

1. Employees can distinguish between fairness of appraisal procedures established by the organization (procedural fairness) and the supervisor's implementation of the procedures (interactional fairness) (Choi, 2008; Cobb et al., 1991; Jawahar, 2007; Thurston & McNall, 2010).
2. Procedural fairness will be the strongest predictor of organizational commitment (Folger & Konovsky, 1989).
3. Distributive fairness will be the strongest predictor of pay and job satisfaction (Lau et al., 2008; Forret and Love, 2008; Folger & Konovsky, 1989).



4. Interactional fairness will be the most important predictor of supervisory satisfaction (Jawahar, 2007; Moorman, 1991; Thurston & McNall, 2010).
5. Distributive fairness will be the most important predictor of performance (Greenberg, 1986).

## **Methodology**

### ***Subjects***

The sample included 230 professional employees in a state public services agency who participated in a two-year trial of a new performance appraisal system. At the end of the second year, the appraisal system was evaluated using a combination of focus group interviews and survey feedback. Of the 230 potential respondents, 219 chose to participate; however, 23 surveys were not included due to missing information, yielding a response rate of 85% (n=196).

All respondents have at least a bachelor's degree; 66 percent have a master's degree and eight percent have studied at the post-masters level. Forty-four percent of the sample is females, and the average tenure with the organization is 13.2 years.

### ***Procedure***

Questionnaires were distributed to employees at their worksites. Employees were allowed to complete the surveys at work or away from work and had the option of returning the surveys through the office mail or mailing the completed survey directly to the researchers. Participation was voluntary and confidentiality was assured. Survey packets included a cover letter from the chief executive officer endorsing the research project, the survey, instructions, and a return envelope. The organization provided performance scores, negotiated goals, and goal attainment scores for each employee, which were later matched with



each employee's questionnaire. In order to match organizational data to specific questionnaires, employees were asked to provide the name of their work unit and the last four digits of their social security number.

### ***Performance Appraisal System***

The performance appraisal system was developed exclusively for this public service organization. This system was designed to communicate clear performance expectations and to link financial incentives to specific objective performance criteria (Latham & Yukl, 1975). Frequency of evaluations (Landy et al., 1978) was controlled by evaluating all employees at the same time each year. All supervisors were promoted from the incumbent job, which controlled for supervisor familiarity with the job (Greenberg, 1986; Landy et al., 1978).

Employee and managerial understanding of the appraisal system, which has been cited as an important factor in appraisal fairness (Whiting, Kline, & Sulsky, 2008; Dobbins et al., 1990), was controlled by extensive training for all employees and managers. Focus group interviews assured the researchers that all participants understood the process and criteria for evaluation. Research has proven that sufficient information on performance appraisal criteria increases satisfaction with the performance appraisal system (Salimaki et al, 2009).

The consistent application of evaluation standards (Greenberg, 1986) was controlled by clearly designed standards. To remove as much bias as possible, the performance appraisal system utilized three performance standards. At the end of each year, a composite performance appraisal score was calculated from the weighted summation of the three performance standards, including a work standards rating, a process review standard, and an outcome standard. The work





standards rating indicated how well the employee followed established procedures and policies. The process review standard was based on the supervisor's evaluation of ten work samples drawn randomly from all of the employee's assignments in the current year. Work samples were evaluated against four criteria and an average of all work sample scores and the rating was weighted as 40 percent of the overall performance score.

The outcome standard was measured as the number of assignments successfully completed compared to the individual's goal. Goal attainment was a critical component of the appraisal process, accounting for 60 percent of the employee's overall rating. Landy et al. (1978) suggest that making performance evaluation contingent upon goal setting increases the acceptability of the performance appraisal system. Allowing subordinates to participate in setting goals enhances employees' commitment to, and satisfaction with the goals (Barsky, 2008). The usefulness of performance appraisal systems also increases when goals are set with manager assistance (Whiting et al., 2008). Thus, production goals were negotiated annually between the employee and the immediate supervisor (Latham & Marshall, 1982; Latham & Saari, 1979) and were specified in writing (Locke & Latham, 1984). To ensure that the negotiation process resulted in realistic goals which incorporated the unique circumstances of each individual's job, all supervisors and employees received goal setting training (Erez & Arad, 1986). If the employee and supervisor failed to reach an agreeable goal, either could initiate the goal appeal process. On a daily basis employees recorded their production in a computerized tracking system. This system provided constant and immediate goal attainment feedback to each employee (Ivancevich & McMahon, 1982).

At the end of the appraisal year, the employee's performance appraisal score and the extent to which



employees met or exceeded their goals determined their annual bonus (a percentage of their annual salary); seventy-four percent achieved the largest possible bonus.

### ***Measures***

Seven scales and four single items were analyzed. These scales can be organized into three categories: a) scales measuring procedural, distributive, and interactional fairness, b) scales measuring job satisfaction, supervisory satisfaction, and pay satisfaction and one scale measuring organizational commitment, c) single items measure the employee's age, gender, tenure, and performance appraisal score.

### ***Procedural, distributive and interactional fairness***

The fairness items were adapted from previously developed fairness instruments. Items were chosen to conform to the literature's definitions of fairness (Folger & Konovsky, 1989). Procedural fairness consists of four items asking employees to indicate the fairness of procedures used to evaluate work standards, process review standards, the overall performance score, and the fairness of the formula used to calculate individual bonuses. All items, except the procedural fairness items, used a seven-point, seven-anchor, Likert-type response format. The procedural fairness items used a five-point, five-anchor response format. Distributive fairness consisted of six items, adapted for this sample from the Price and Mueller Distributive Job Index (1986). These items ask employees to indicate how well performance scores accurately reflected their performance. Interactional fairness consisted of five items that measure how fairly the employee was treated by their immediate supervisor in the appraisal process.

Attitudes toward the organization. The survey included the nine-item version of the Organizational



Commitment Questionnaire (Mowday, Steers, & Porter, 1979). Pay satisfaction, supervisory satisfaction, and job satisfaction were measured with these subscales from the Job Diagnostic Survey (Hackman & Oldham, 1980).

### ***Analytic Technique***

The 15 fairness items were factor analyzed using principal components analysis with an oblique rotation (Hair, Black, Babin, & Anderson, 2010) (see Table 2). Normality was assessed and supported with a studentized residual analysis (Kutner, Nachtsheim, Neter, & Li, 2005). Means, standard deviations, and correlations are reported in Table 1. Internal consistency of each scale was assessed using Cronbach's alpha (see Table 1 below).

In the second stage of analysis, attitudes toward the organization, which may be influenced by procedural, distributive, and supervisory fairness, were subjected to hierarchical regression analysis (Folger & Konovsky, 1989; Kutner et al., 2005). This analysis is used to determine which variable, procedural, distributive, or interactional fairness, accounts for the most variance in organizational commitment, job satisfaction, pay satisfaction, supervisor satisfaction, and performance.

Hierarchical regression allows the researcher to specify the order in which the variables enter the regression equation (Folger & Konovsky, 1989; Kutner et al., 2005). Analysis followed the suggestion of Cohen and Cohen (1983) that main effects should be tested before entering interaction terms; therefore, a four-step analysis was performed for each of the five outcome variables. In the first step age, tenure, and gender were entered first to control for inflation or suppression that may influence relationships between independent and dependent variables (McFarlin &



Sweeney, 1992; Staines, Pottick, and Fudge, 1986). In the second step, procedural, distributive and interactional fairness were entered. The third step contained three two-way interaction terms and the fourth step contained one term to test for a three-way interaction.

TABLE 1  
Correlations and Descriptive Statistics for All Variables\*

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10
Interactional Fairness	4.28	1.42	(.85)									
Procedural Fairness	3.26	.96	.34	(.76)								
Distributive Fairness	3.08	1.11	.32	.54	(.74)							
Organizational Commitment	3.40	.83	.34	.34	.33	(.88)						
Pay Satisfaction	3.96	1.65	.11	.24	.08	.26	(.91)					
Job Satisfaction	4.89	1.37	.24	.40	.27	.59	.17	(.77)				
Supervisory Satisfaction	4.54	1.68	.82	.46	.39	.37	.19	.33	(.84)			
Performance <sup>b</sup>	6.53	1.63	.14	.04	.44	.07	.00	.02	.14	1.00		
Age	43.72	8.03	-.25	.02	.01	-.14	-.01	-.04	-.12	-.01	1.00	
Tenure	13.2	7.73	-.20	.07	.02	-.18	-.07	-.04	-.10	.10	.63	1.00
Gender <sup>c</sup>	1.56	.49	.21	.06	.10	-.12	-.09	-.09	-.11	.03	.34	.35

\* Correlations greater than .18 are significant at  $p < .01$ . Reliability coefficients for multi-item scales are on the main diagonal. <sup>b</sup> Performance measured on an 8 point scale. <sup>c</sup> For Gender 1 = man and 2 = woman.

## Results

The factor loadings of the principle components analysis demonstrate that the fairness items form three distinct measures of fairness, with each item loading on the appropriate factor (see Table 2 - next page). In this sample, employees are obviously able to distinguish between the fairness of the procedures established by the organization and the fairness of the supervisor's implementation of the procedures.

Table 3 below displays the results of the hierarchical regression analysis and the order in which the variables were entered into the regression equations. None of the demographic variables were significant predictors of any of the dependent variables. Procedural fairness significantly predicts each of the de-



pendent variables, although distributive fairness is a stronger predictor of performance and interactional

TABLE 2  
Factor Analysis of Fairness Measures - Rotated Factor Patterns

Questionnaire Items	Interactional Fairness	Distributive Fairness	Procedural Fairness
My immediate supervisor is always fair with me.	.89		
My immediate supervisor treats all subordinates as equals.	.85		
My immediate supervisor stands up for me with "higher ups."	.81		
My immediate supervisor encourages me to participate in important decisions.	.75		
Supervisors feel they must find something wrong or they aren't doing their job.	.58		
Counselors receiving the maximum level of incentive pay are, in fact, the best counselors.		.77	
Incentive pay awards accurately reflect an individual's job performance.		.73	
My last performance evaluation was a true indicator of my actual performance.		.68	
Under the Counselor Performance Appraisal Program rewards are based on total job performance.		.63	
Counselors receiving the minimum level of incentive pay are the poorest counselors.		.58	
I am very satisfied with the last performance evaluation I received.		.44	
Please indicate fairness of the procedures to evaluate work standards.			.90
Please indicate fairness of the procedures to evaluate process standards.			.83
Please indicate fairness of the procedures to evaluate outcome standards.			.72
The formula used to calculate incentive pay is fair.			.44
Eigenvalues	4.94	2.24	1.38
Percentage of Variance Explained	.28	.22	.19

fairness is a stronger predictor of supervisory satisfaction. All three types of fairness are significant predictors of organizational commitment, with procedural being the strongest predictor, followed by distributive and then interactional fairness. No interaction terms were significant.

## Discussion

In support of proposition one, factor analysis clearly indicates that employees can distinguish between the sources of organizational and supervisory fairness. Previous studies, not distinguishing between procedural



and interactional fairness, found that procedural fairness predicts supervisory satisfaction. But, when inter-

TABLE 3

Results of Hierarchical Regression Analysis

Independent Variables	Pay Satisfaction	Job Satisfaction	Performance	Supervisory Satisfaction	Organizational Commitment
Step 1					
Age	-.01	.00	-.04	-.02	-.00
Gender	-.47	-.28	.07	-.12	-.15
Tenure	.03	.00	.03	.01	.03
R <sup>2</sup>	.02	.01	.03	.01	.03
Step 2					
Procedural Fairness	.39 <sup>*</sup>	.45 <sup>***</sup>	-.44 <sup>***</sup>	.29 <sup>***</sup>	.15 <sup>*</sup>
Distributive Fairness	-.04	.07	.77 <sup>***</sup>	.08	.13 <sup>*</sup>
Interactional Fairness	.05	.12	.11	.93 <sup>***</sup>	.11 <sup>*</sup>
R <sup>2</sup>	.05 <sup>**</sup>	.17 <sup>**</sup>	.22 <sup>**</sup>	.71 <sup>**</sup>	.18 <sup>**</sup>
Step 3					
R <sup>2</sup> 2-way interaction	.02	.01	.01	.00	.01
Step 4					
R <sup>2</sup> 3-way interaction	.00	.00	.00	.00	.00
F	1.65	3.69 <sup>**</sup>	5.23 <sup>***</sup>	42.17 <sup>***</sup>	4.36 <sup>***</sup>
df	10	10	10	10	10
* p < .05 ** p < .01 *** p < .001					

actional fairness is included, it is a stronger predictor of supervisory satisfaction, which is consistent with the finding of Jawahar (2007) and was predicted in proposition four. However, procedural fairness is also a significant predictor of supervisory satisfaction.

Laboratory research has demonstrated that some people tend to care less about procedures when outcomes are positive. This study demonstrates that in real organizations, even when outcomes are positive, procedures are important. The findings support the notion that employees are more concerned with fair procedures than with the outcome of the appraisal



(Konovsky, Folger, & Cropanzano, 1987; Greenberg, 1987). According to proposition two, procedural fairness was the most important predictor of organizational commitment, while contrary to proposition three, procedural fairness was the only significant predictor for pay satisfaction and job satisfaction. Obviously, in this organization, the policies and procedures of the appraisal system are more influential for satisfaction. The fact that distributive fairness did not predict pay satisfaction may be due to the way the bonus was determined mathematically based on the appraisal score and the percentage of productivity that exceeded the employee's goal. Distributive fairness was built into the appraisal process.

As expected, distributive fairness is the most important predictor of performance. The structure of the appraisal system clearly informed employees of their performance goals and the system allowed employees to track their progress daily; therefore, the distribution of rewards was not dependent upon a supervisor's subjective determination of the outcome or the amount of the reward, the amount was based on a mathematical calculation. A surprising finding is, however, the negative regression weight for procedural fairness in predicting job performance. Since the procedural and distributive interaction term is not significant, the negative weight may indicate a suppressor variable (Kutner et al., 2005). If procedural fairness is a suppressor variable, low perceptions of procedural fairness are suppressing performance. Unexpected negative weights may also result from multicollinearity (Kutner et al., 2005); however, in this study the correlation between procedural and distributive fairness is .54, which is much lower than the range of .67 to .77, reported in other studies of procedural and distributive fairness (e.g., Jawahar, 2007; McFarlin & Sweeney, 1992; and Tyler, 1984).



All three types of fairness were found to be significant predictors for organizational commitment, with procedural having the largest weight, followed by distributive, then interactional fairness. This finding is consistent with McFarlin and Sweeney (1992) and Alexander and Ruderman (1987) who found that both procedural and distributive fairness are significant predictors of organizational commitment.

Contrary to other studies, the results of the regression analysis did not indicate any significant interaction terms. Cohen and Cohen (1983) warn that this type of hierarchical regression analysis may under-estimate the effects of interaction. Despite this warning this analytic approach was considered by the researchers to be the most appropriate to study the main effects of the three types of fairness. In summary, the results provide evidence that the three types of fairness have different effects on the dependent variables used in this study (Alexander & Ruderman, 1987; Jawahar, 2007).

Since the data are cross-sectional, the results must be accepted with care. Longitudinal data, collected before, during, and after the implementation of the appraisal system may have provided a better understanding of how perceptions of fairness developed and changed throughout the trial. Because the data were collected at the end of the two-year trial, employee perceptions of fairness may have been influenced by performance scores or treatment received from supervisors near the end of the trial period. The use of self-report questionnaires may have resulted in common method bias.

Moorman (1991) suggests that because organizations use a variety of systems to select, socialize, develop, and motivate employees, researchers need to systematically look at the fairness of each system separately. Despite limitations, this study is one of the first to measure employee perceptions of procedural, dis-





tributive, and interactional fairness of a performance appraisal system and to measure the predictive power of fairness on a variety of attitudes and performance. The results indicate that procedural fairness is of primary importance for performance appraisal systems in work settings.

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