Do Characteristics of Strategic Performance Measurement Systems Used in Incentives Enhance Organizational Fairness?

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Abstract

Economic theory suggests that multiple financial and non-financial measures (i.e., a strategic performance measurement "SPMS") be used in compensation contracting to properly direct employees' attention and motivate behavior aligned with organizational goals. On the other hand, linking incentives to the SPMS can result in various dysfunctional behaviors, including game playing by employees, the achievement of unbalanced performance, and the potential of basing compensation on an incomplete performance measurement system. Prior literature has investigated the use of subjectivity in compensation contracting as a means of potentially mitigating these problems; however, subjectivity can introduce other problems including claims of favoritism and bias. Economic theorists have recently begun expanding the traditional agency model to include the notion of *fairness* or justice. In this study, we obtain data from an organization that uses an SPMS as the basis for the allocation of bonuses and investigate whether perceived organizational fairness is associated with the SPMS. Specifically, we hypothesize and show that the extent to which the SPMS reflects a strategic causal model and the degree to which it is technically valid are associated with higher perceptions of organizational justice. We also provide evidence that heightened levels of organizational justice are the mechanism though which the characteristics of the SPMS are associated with employee performance. The implication is that firms do not necessarily need to introduce subjectivity into the incentive contracting system, but can enhance performance by linking incentive contracts to their SPMS if they design the system so as to enhance perceptions of justice.

Keywords: Organizational justice, Strategic performance measurement systems, Fairness, Performance

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1. INTRODUCTION

We investigate whether characteristics of an underlying strategic performance measurement system (SPMS) used as the basis for incentive compensation affects performance through employees' perceptions of organizational justice, or fairness. "An organization that is performing well is one that is successfully attaining its objectives" (Otley 1999, 364). Recent trends in managerial accounting indicate that many organizations pursue these important objectives by implementing performance measurement systems with more of a strategic focus. These SPMSs are performance measurement systems that consist of financial, operational, and strategic measures that are critical for the attainment of strategic objectives and shareholder value and which translate and communicate the firm's strategy (IMA 1999; Ittner et al. 2003a). Organizations use SPMSs to both facilitate decision-making and to influence employee behaviors (Sprinkle 2003). Multiple theories including agency theory, expectancy theory, goal-setting theory, and reinforcement theory[1] predict a positive relation between incentives and performance (Jenkins et al. 1998; Bonner and Sprinkle 2002); however, some researchers suggest that incentives can cause employees to over invest efforts in one area at the expense of other areas (Beer and Cannon 2004). Indeed, empirical results investigating the effects on performance are mixed (Jenkins et al. 1998; Bonner and Sprinkle 2002).

A formulaic incentive plan is problematic because any one performance measure is incomplete. For example, if a principal contracts with an agent on the basis of profit, the agent may shirk with regards to efforts with long-term payoffs. With an SPMS incentive plan (henceforth, we mean one in which multiple measures linked to a firm's strategic objectives are used to determine incentive compensation), firms can assign weights to each performance measure to calculate incentives (Ittner et al. 2003b). Although a multiple measure SPMS-based incentive plan may be an improvement over a single measure,

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[1] Higher levels of performance are achieved because incentives provide extrinsic motivation, which lead to greater effort (expectancy theory), reinforce the performance goals that are linked to incentives (reinforcement theory), and motivate employees to expend effort to achieve difficult goals (goal-setting theory) (Jenkins et al. 1998).

formulaic system, employees may still engage in "game playing" to maximize compensation or it may result in the achievement of unbalanced performance (Ittner et al. 2003b; Kaplan and Norton 1996). To counteract the negative effects of a formulaic incentive system, an alternative is to allow for subjectivity in the evaluation process (Gibbs et al. 2004); however, this technique may foster feelings of favoritism or bias (Ittner et al. 2003b). We examine a third alternative, which is to use a formulaic system that is based on a carefully designed SPMS incentive plan that fosters perceptions of organizational justice. If employees perceive that they work in a "fair" environment, they are less likely to engage in "game playing" and it is more likely that performance will be enhanced. This proposition is consistent with proponents of incentive programs who suggest that good system design coupled with perceptions of fairness can overcome the negative aspects of incentive programs (Beer and Cannon 2004). Thus, our primary research question is whether an organization can design an SPMS incentive plan such that employees perceive that characteristics of it are associated with organizational fairness, and whether those perceptions of organizational fairness, in turn, are positively associated with organizational performance?

Economics-based agency models assume that employees are self-interested and work-averse. The primary concern of performance measurement systems is to align employee efforts with the principal's objectives. Economic theorists have begun expanding the traditional agency model to include the notion of *fairness*. This literature stream has demonstrated that under certain social conditions, individuals are motivated by phenomena other than self-interest; for example, fairness and reciprocity (Fehr and Schmidt 2000). Streams of literature in management have shown that employees form perceptions of fairness about incentive plans (see e.g., Dulebohn and Martocchio 1998). The management accounting literature has begun studying fairness, especially in negotiating transfer pricing (Kachelmeier and Towry 2002) and budgeting (e.g., Libby 2001; Wentzel 2002; Lindquist 1995; Lau and Lim 2002). These studies generally support the contention that consideration of fairness issues is relevant to the design of the process being studied. We propose that the concept of fairness is also applicable to the performance measurement arena and has thus far been missing from the debate about whether organizational effectiveness is enhanced when decision-facilitating performance measurement systems are linked to compensation systems.

We use two types of organizational justice measures to capture the notion of fairness. Distributive justice reflects perceptions of fairness associated with the distribution of outcomes employees receive, such as pay, promotions, and recognition. Perceptions of distributive justice are high when employees believe their ratio of inputs (e.g., time, effort, and skill put into jobs) to outcomes matches or exceeds a referent other's ratio (Adams 1965). Procedural justice captures the perceived fairness of procedures used to make decisions. Procedures are thought to be fair when they are characterized by consistency, accuracy, lack of bias, ethicality, appeal processes, and when they represent the interests of those affected by the procedures (Leventhal 1980).

A large southeastern financial services firm implemented an SPMS incentive plan. The SPMS consists of a matrix of 8 – 12 key performance measures, uniquely designed for different job positions. Under the incentive plan, employees can earn annual bonuses up to a maximum amount of 50% of their annual compensation. We surveyed these employees and measured their perceptions of two characteristics of the SPMS—degree of technical validity and extent the SPMS reflects a strategic causal model. We also measured the employees' perceptions of organizational justice. We addressed and overcame one of the typical limitations of survey research by matching the employees' responses to two assessments of performance by their supervisors (i.e., we constructed an employee-supervisor dyad). That is, we do not rely on a self-reported measure of performance.[2] Using a sample of 242 employees, we find evidence that supports our hypotheses. We find that both the degree of technical validity and the extent the SPMS reflects a strategic causal model are positively associated with employees' perceptions of distributive and procedural justice. We also show that procedural justice affects performance. Thus, we conclude that characteristics of an SPMS incentive plan are positively associated with performance *through* their effect on organizational justice perceptions. Our model is illustrated in Figure 1.

[Insert Figure 1]

[2] Nor are we subject to common measure bias on the outcome variable due to the construction of the employee-supervisor dyad.

This study is important to those charged with designing an SPMS incentive plan. Previous research has explored the potential of incorporating subjectivity into the reward system as a way to mitigate some of the problems of a formula and SPMS-based reward system. But there are also problems inherent to the use of subjectivity in rewards (Ittner et al. 2003b). Our study suggests that the perception of justice in the environment matters to performance outcomes associated with a scorecard-based reward system. This finding is consistent with Ittner et al. (2003b, 754) who state "the evidence suggests that psychology-based explanations may be equally or more relevant than economics-based explanations in understanding measurement practices in some settings." Thus, this paper extends the (limited) field-based research on SPMS-based incentive systems (see e.g., Ittner et al. 2003b).

The remainder of this paper is organized in four sections. In Section 2, we discuss the related literature and develop our research hypotheses. We describe our research setting, sample, and development of variables in Section 3. In Section 4, we discuss the statistical tests that address our research hypotheses and present a discussion of results. Finally, in Section 5 we summarize our results, present the study's limitations, and discuss implications of our work.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Description of an SPMS

Financial measures are often criticized as providing incomplete assessments of behavior and performance. Thus, firms have begun implementing SPMSs that include multiple financial and non-financial measures specifically chosen because they are critical success factors to the achievement of the firm's business strategy and mission. An organization chooses its performance measures through an organized and deliberate process to ensure that the measures are understandable, accurate, and reliable. A unique characteristic of SPMSs is the explicit link established between performance measures and organizational strategy (Kaplan and Norton 1996; Frigo and Litman 2002). This strategy link reflects a series of hypothesized cause-and-effect relationships that evolve from the clearly defined organizational strategy. Through codification of these critical success factors, the SPMS is the tool that translates the firm's strategy, communicates organizational objectives to its employees, and demonstrates how one activity causes changes in another activity (Gates 1999; Kaplan and Norton 1996). From this communication, employees gain an understanding of "the long term strategy, the relations among the various strategic objectives, and the association between the employees' actions and the chosen strategic goals" (Ittner and Larcker 1998, 223). Consequently, employees should be able to understand the impact of their actions on performance measures, align their actions with organizational strategy, and achieve better performance (Kaplan and Atkinson 1998).

Using the SPMS as a Basis for Incentives

Agency theory assumes that employees are work-averse and self-interested. Thus, in the performance measurement arena, the primary agency problem is how organizations can use the performance measurement system to motivate employees and mitigate organizational control problems (Sprinkle 2003). That is, the objective of linking performance measurement systems to compensation is to induce employee effort that is aligned with the principal's objectives. The informativeness principle suggests that additional measures that are costless should be included in the performance measurement system as long as the measure provides incremental information (Holmstrom 1979). Moreover, the literature shows that since financial measures are incomplete, the inclusion of non-financial measures is often beneficial (Feltham and Xie 1994). Thus, agency literature predicts that organizations should use multiple financial and non-financial measures to properly direct employees' attention and motivate behavior aligned with organizational goals. Based on underlying theory, then, it follows that firms that utilize their SPMS in incentive contracting as a means to influence behavior should induce employee effort and achieve higher levels of performance. In a related study, Fisher et al. (2002) demonstrate experimentally that using budgetary information for both decision-influencing (resource allocation decisions) and decision-facilitating (evaluation) purposes is advantageous.

However, difficulties are also associated with using an SPMS incentive system. Using these systems suggests that the incentive system will be a formulaic one with weights place on each measure. Formulaic incentive systems are often associated with problems, which may include "game playing" by employees to maximize compensation, the risk of receiving incentive compensation for the achievement of unbalanced performance, and the potential of basing compensation on an incomplete performance measurement system (Ittner et al. 2003b; Kaplan and Norton 1996). Effects unique to formulaic SPMS incentive plans include the stress placed on employees now trying to determine how to balance constrained time and effort across multiple objectives. The depiction of Global Financial Services' incentive system provides a stark illustration of the discontent and dysfunctional outcomes that can result when the firm's SPMS is linked to compensation (Ittner et al. 2003b). Indeed, Kaplan and Norton (1996, 221) suggest that while on one hand measures contained in an SPMS should be linked to employees' compensation, on the other hand, "caution" should be used when doing so.

To counter that risk, research has investigated with mixed results whether allowing subjectivity in the contracting process is beneficial. Baker et al. (1994) assume that compensation contracts are distorted since objective performance measures are imperfect. They analytically demonstrate that in certain situations, including a subjective component in the contracting process is complementary to formulaic-based, objective measures; however, other research shows that subjectivity negatively affects employees' motivation and introduces bias and favoritism to the contrasting process (Prendergast and Topel 1993). Empirical research also supports these mixed results. Gibbs et al. (2004) find the use of subjectivity in compensation contracting is associated with higher satisfaction and productivity when the manager's tenure is high. However, Ittner et al. (2003b) find that the use of subjectivity introduces conflict including complaints of favoritism and bias. Ultimately, the firm in the Ittner et al. (2003b) study replaced its contracting system with a one-measure, formulaic system.

Overall, the use of a firm's performance measurement system as the basis for incentive contracting can generate mixed results, even if subjectivity is allowed into the process. Another alternative is to consider the environment in which the incentive contracting is being undertaken (Bonner and Sprinkle 2002). We next consider how the concept of *fairness* may affect the contracting process.

Organizational Justice (Fairness)

Kahneman et al. (1986, S285) state "The absence of considerations of fairness and loyalty from standard economic theory is one of the most striking contrasts between this body of theory and other social sciences—and also between economic theory and lay intuitions about human behavior." Kahneman et al. (1986, S299) question the assumption that fairness is irrelevant to economic theory and, using a set of experiments, conclude that there are three traits of fairness that should be considered in economic models: "(1) they [people] care about being treated fairly and treating others fairly, (2) they are willing to resist unfair firms even at a positive cost, and (3) they have systematic implicit rules that specify which actions of firms are considered unfair."

Following Kahneman et al. (1986), agency-based theorists have begun incorporating fairness into agency models and experimental economics, recognizing that individuals are motivated on traits other than purely self-interest (Fehr and Schmidt 2000). Two papers that investigate fairness and labor economics are Rabin (1993) and Fehr et al. (2001). Rabin (1993) develops a game-theoretic framework for incorporating fairness into economic models. He applies his fairness model to labor economics and concludes that when fairness is negative, the Nash equilibrium holds when the worker exerts low effort and receives no benefit while the firm receives zero revenue; however, in a positive fairness equilibrium workers will exert high effort and receive a benefit while the firm earns revenue (given moderate ranges of disutility and revenue). Fehr et al. (2001) theoretically demonstrate that the optimality of contracts may vary based on concerns for fairness. Overall, these studies demonstrate that fairness is a valid dimension for inclusion in economic models since fairness matters to people.

As intimated by Kahneman et al. (1986) (see above), psychology-based literatures including human resource management and organizational behavior have long investigated issues of fairness; otherwise known as organizational justice research (i.e., the investigation of the impact of employee perceptions of fairness in the workplace (Simons and Roberson 2003)). Moreover, during the last decade, organizational justice has been "among the most frequently researched topics" in organizational behavior and psychology (Cropanzano and Greenberg 1997), due in part, to "the belief that enhanced fairness perceptions can improve outcomes relevant to organizations (e.g., organizational commitment, job satisfaction, and performance)" (Colquitt et al. 2001, 428). Much of the research has traditionally focused on two dimensions of organizational justice: distributive and procedural. Distributive justice reflects perceptions of fairness associated with the distribution of outcomes employees receive, such as pay, promotions and recognitions. Perceptions of distributive justice are high when employees believe their outcomes match or exceed the time, effort and skill they put into their jobs. Procedural justice captures the perceived fairness of procedures used to make decisions. Characteristics of fair procedures include consistency, accuracy, lack of bias, and ethicality (Leventhal 1980).

Research has found that the justice of human resource management systems, including compensation (e.g., Folger and Konovsky 1989), performance management (e.g., Taylor et al. 1995), and staffing (e.g., Gilliland 1994), affects employee behavior. For example, the presence of organizational justice spurs positive employee attitudes and behaviors, such as increased organizational commitment and decreased turnover intentions (Simons and Roberson 2003). Moreover, the positive effects on employees then result in positive effects on customers (Masterson 2001). If employees perceive the systems to be fair, they are satisfied with the outcomes even when the outcomes are less than desired, and they exhibit better attitudes and increased intentions to remain with the organization (Taylor et al. 1995). Some researchers have even suggested that perceptions of procedural justice have a stronger effect on employee behavior than does the allocation of incentives (Taylor et al. 1998).

Limitations of Prior Research

A long stream of literature investigates the relation between incentives, effort, and performance; and research is moving towards explaining *how* the use of incentives affects effort (Bonner and Sprinkle 2002). For example, the relation may be conditional on environmental variables. A second stream of literature, not as well-developed, does not investigate the level or use of incentives, but rather investigates the type of measures used as the basis for incentives. It generally holds that using multiple measures to allocate monetary incentives is associated with better performance (i.e., Kaplan and Norton 1996). Agency research provides some support that the use of multiple measures is advantageous; however, empirical support is mixed (Ittner et al. 2003b) and overall, the relation between use of an SPMS incentive plan and performance appears tenuous. This study investigates incentives; therefore, it touches on the first stream of literature; however, the primary contribution is to the second stream of literature since we focus on characteristics of the performance measurement system upon which the incentives are based. This latter research stream has three primary limitations.

First, little is known about which characteristics of SPMS incentive plans are desirable when the objective is to increase performance outcomes. Prior work has focused on issues of subjectivity (Ittner et al. 2003b; Gibbs et al. 2004) and characteristics of just and unjust performance appraisal systems in general (Taylor et al. 1995); but has not investigated and identified characteristics of effective SPMS. Second, much of what is known about SPMS incentive plans is from analytical (i.e., theoretical) models, which may not be externally valid. Third, unlike the stream of research investigating levels of incentives and performance, the stream of research investigating the relation between the use of SPMS incentive plan and performance has not yet considered mediating environmental variables such as organizational justice; thus it does not attempt to explain *how* the use of an SPMS may affect performance. Moreover, including more links in the causal model helps reveal weak links (Luft and Shields 2003) that may exist between characteristics of an SPMS and performance. We overcome these limitations by (1) investigating two specific characteristics of the SPMS—its degree of technical validity and the extent it reflects a strategic causal model and (2) integrating the justice literature as an additional link in the SPMS—Performance relation, thus providing evidence on an environmental mediating variable.

Hypotheses

We investigate two characteristics of an SPMS incentive plan—the extent to which it reflects a strategic causal model and its degree of technical validity. Overall, if the SPMS reflects a strategic causal model and has a high degree of technical validity, employees will feel more in control and also feel that they are valued by the organization. These feelings are important since they provide a foundation for perceptions of procedural justice.

Process control theory underlies the importance of procedural justice to employees (Erdogan 2002). The concept of process control, introduced by Thibaut and Walker (1975) suggests that employees need to feel they have control over and input into procedures used to make allocation decisions. Process control (also referred to as voice) as Lind and Tyler (1988) further explain in their group-value model is also desirable because it helps employees feel like they are valuable members of a group. Procedural justice consists of the establishment of performance standards, behavior of the superiors when rating subordinates, determination of the rating, communication of the rating to the subordinate, and establishment of a system for employees to engage in goal setting (Gilliland and Langdon 1998); enabling employees to both feel in control and feel like they are valued members of the organization (Erdogan 2002). These steps or processes that lead to perceptions of procedural justice are often referred to as "due process," which consists of adequate notice (i.e., publishing, distributing, and communicating of performance standards and feedback), fair hearing (i.e., meeting between superior and subordinate to assess performance), and judgment based on evidence (i.e., application of consistent standards and allocation of rewards (Erdogan 2002); Taylor et al. 1998)). Specific criteria necessary to establish procedural justice includes (1) consistency, (2) bias suppression, (3) accuracy, (4) correctability, (5) representativeness, and (6) ethicality (Leventhal 1980).

Taylor et al. (1998) conducted a field experiment on a group of managers and manipulated whether they evaluated their subordinates using their current performance appraisal system or one modified to include due process components. The results show that managers are more satisfied with the performance appraisal system and have better relationships with their subordinates when they use the due process system. This study extends an earlier study (Taylor et al. 1995) that investigates performance appraisal systems integrating due process from both the perspective of the employee and the manager. They find that employees who are evaluated under the due process system have favorable reactions, including a lower likelihood to leave the organization. Empirical evidence also supports the relation between procedural justice and each of the specific elements of adequate notice and judgment based on evidence. Levy and Williams (1998) conducted a field study of 46 employees in two banks and find that the extent to which employees perceive that they understand the performance appraisal system is associated with perceptions of procedural justice. Greenberg (1986) surveyed middle managers and found that consistent application of standards helped explain the concept of procedural justice. Overall, the human resource management literature has demonstrated that many of the criteria necessary to establish "due process" are positively associated with behavioral outcomes.

We extend these studies by assessing characteristics of an SPMS that we argue will influence the way employees feel about the organization by affecting their perceptions of procedural justice. To the extent the underlying SPMS reflects a strategic causal model, it identifies specific goals that employees will strive to attain and it provides feedback on employees' performance against standards. Overall, it clearly communicates to employees the appraisal standards, organizational objectives, and relevant feedback. To the extent that the SPMS contains a high degree of technical validity, employees will have reason to believe that standards are being applied consistently throughout the organization. Within this context, the degree to which the SPMS is technically valid suggests that consistency, bias suppression, accuracy, and representativeness are present. Overall, an SPMS that reflects a strategic causal model and has a high degree of technical validity provides the incentive system with structure. As a result, the system provides for a consistent process of evaluation for employees, reduces the potential for rater bias, and reflects job tasks related to organizational strategy, which will empower employees and help them feel in control and valued by the organization. Thus, we hypothesize the following:

> H1a: The extent to which the SPMS reflects a strategic causal model is positively associated with procedural justice.
>
> H1b: The degree to which the SPMS is technically valid is positively associated with procedural justice.

Distributive justice is rooted in equity theory which holds that employees calculate their outputs as a function of their inputs, compare that ratio to other employees' input-output ratios, and make a judgment regarding the fairness of their outcome (Adams 1965). In addition to comparisons of outcomes to referent individuals, antecedents of distributive justice include the performance rating itself (Erdogan 2002), a comparison of the outcome received to the effort expended (Greenberg 1986), and an output consistent with the stated goals (Deutsch 1975). Greenberg (1986) surveyed individuals and found that a characteristic of distributive justice is that the evaluation was an accurate reflection of the effort expended by the employee. Tyler (1994) used an experimental setting to demonstrate that employees' assessment of their outcome relative to their expectations was a significant determinant of distributive justice.

Employees will likely perceive that outcomes of the evaluation process accurately reflect their efforts when an SPMS that reflects a strategic causal model and has a high degree of technical validity is used as the basis for the allocation of incentives. The SPMS is a formal written document that provides employees with standards and goals that dictate the distribution of bonus compensation. Employees perceive higher levels of distributive justice when the bonus allocation is consistent with the implicit internal standards that determine allocation (Colquitt 2001). In addition, Erdogan (2002) proposes that if employees perceive the information to be used in evaluations is consistent and distinctive, then employees will perceive a higher level of distributive justice. In this context, consistency is defined as looking at employee behavior "in the same setting across different occasions" while distinctive information "allows behaviors across different settings to be included in the appraisal" (Erdogan 2002, 568-569). An SPMS high in technical validity will possess similar types of informational characteristics. Based on the above discussion, we propose the following:

> H2a: The extent to which the SPMS reflects a strategic causal model is positively associated with distributive justice.

> H2b: The degree to which the SPMS is technically valid is positively associated with distributive justice.

We posit that distributive justice will be positively related to employee job performance. According to equity theory (Adams 1965), when employees believe that their ratio of inputs to outcomes is less than referent others' ratios, they will perceive inequity and will be motivated to resolve this inequity. One method for restoring equity is by lowering inputs, or more specifically, job performance. Thus, in response to distributive injustice, employees may reduce their job performance in an effort to balance any unfair outcomes they perceive. Meta-analyses offer support for this argument by demonstrating that distributive justice is positively related to job performance (Cohen-Charash and Spector 2001; Colquitt et al. 2001). Thus, we offer the following hypothesis:

H3: Distributive justice is positively associated with employee performance.

Procedural justice is often used to assess evaluations of and satisfaction with organizations and can result in employees emphasizing the interests of their employer versus their own (Lind and Tyler 1988). Therefore, perceptions of procedural justice should generate increased organizational citizenship behaviors directed at the organization. Researchers have long argued that justice is a strong antecedent of organizational citizenship behaviors (OCBs) (e.g., Organ 1990) and meta-analytical evidence supports a relationship between procedural justice and OCBs directed towards the organization (OCBOs) in particular. For example, Cohen-Charash and Spector (2001) find that procedural justice is significantly related to OCBOs, but unrelated to OCBs directed towards individuals within the workplace (OCBIs). Similarly, Colquitt and colleagues (2001) find that procedural justice has a stronger relationship with OCBOs than with OCBIs.

We believe that not only will procedural justice lead to increased OCBOs, but that OCBOs will in turn result in enhanced employee performance on the job. Podsakoff and MacKenzie (1997) propose several reasons why OCBs should enhance organizational performance and effectiveness. OCBs increase productivity, direct resources toward more productive tasks, decrease the need to dedicate resources solely to maintenance functions, enhance coordination between members of work groups, increase organizations' ability to attract and retain good performers, increase the consistency of organizational performance, and help organizations adapt to changes in the environment. Thus, we hypothesize that OCBs targeting organizations should lead to higher supervisory ratings of in-role employee performance. Indeed, empirical research supports a link between OCBOs and job performance. For instance, Podsakoff et al. (1997) demonstrates a positive link between one type of OCBOs, sportsmanship (tolerance of minor annoyances and inconveniences that are an inevitable part of organizational life), and performance quantity. Additionally, Podsakoff and MacKenzie (1994) find that sportsmanship and civic virtue (responsible involvement in governance or other activities that affect the organization such as attending meetings) accounts for a significant amount of variance in sales performance. To summarize, the literature supports the hypothesis that procedural justice affects OCBOs, which in turn, affect performance. Formally, we hypothesize the following:

> H4: Procedural justice is positively associated with employee performance through organizational citizenship behaviors.

III. SAMPLE AND RESEARCH METHOD

Description of the setting/performance measurement system:

The organization's individual performance measurement system is a well-developed strategic performance measurement system. Each employee in the division we studied is evaluated in two ways. First, the supervisors complete a performance evaluation that culminates in a rating of employee performance as poor, average, good or very good. These evaluations serve as the foundation for annual salary raises. Second, each employee's performance is reviewed quantitatively through an incentive matrix system. This latter evaluation process is the one we investigate in this study.

The organization designed the incentive system so as to reward balanced performance across growth, profitability, credit quality, and client service quality. The incentive matrix is very detailed and tailored for each job position within the division. This formulaic plan uses 8-12 objective performance indicators across multiple categories and across multiple perspectives. Each performance measure is assigned a weighting. The weighting serves as the midpoint for the employee's "opportunity." The employee has an opportunity to earn at three levels: a threshold, a target, and a maximum level of performance, which are denoted as goals on the incentive matrix. These goals are intended to motivate the employee's behavior. The year-end performance report multiplies the performance level for each measure by the appropriate weight. If the employee achieves the target on all measures, he or she will earn 100 points. Fewer points will be awarded for achieving minimum goals, while a point total in excess of 100 will be awarded for achieving goals above the target. Overall performance on the matrix is calculated as the sum of the individual scores. The incentive system allows employees to earn up to 50% of their base salary in the form of an incentive matrix bonus.

To illustrate the incentive matrix plan, consider the following simplified example. Lucy is an area branch manager. Her incentive matrix plan consists of two measures: average transactions per teller (ATT) with a weight of 40 and deposit production (DP) with a weight of 60. The opportunity for ATT is 35, 40, and 45 (because the weight is the midpoint of the employee's "opportunity") and the opportunity for DP is 50, 60, and 70. That is, based on Lucy's performance during the period, Lucy is eligible for between 85% (35 + 50) and 115% (45 + 70) of her total bonus payout.

Survey Procedures and Sample Selection

Once an initial draft of our survey instrument was prepared, colleagues reviewed it for readability and clarity. After incorporating their suggestions into the survey, we met with the Vice-President of the division under investigation. After reviewing the survey items with him, adjustments were made to the wording and content to clarify meanings and to make the items relevant for employees in that particular division. We created two versions of the survey to manipulate the ordering of questions within the longer sections of the survey. While the survey only took about 15 minutes, this change was undertaken to avoid any potential fatigue issues impacting a particular survey item.

Surveys were distributed to 540 employees at 47 branches of a large metropolitan financial institution located in the southeastern United States. Survey packets and instructions were given to branch managers at a monthly meeting and managers in turn distributed the surveys to their subordinates. Employees completed a 15 minute survey regarding their perceptions of the characteristics of the performance management system and organizational justice within their workplace. Employees also provided information regarding their demographics and work history. In addition, supervisors were asked to complete a five minute survey for each of their subordinates that evaluated in-role job performance and organizational citizenship behavior. Surveys were returned (separately for employees and supervisors) to the researchers' university address to ensure confidentiality. Employee numbers were used to match the supervisor and employee surveys. Participants were assured that this coding system was for matching purposes only and that they could not be identified individually.

Surveys were returned by 323 employees for a response rate of about 60%. Seventeen surveys were omitted due to missing data. Supervisors did not complete performance ratings for 64 of the respondents, which reduced the final sample size to 242**.** Most participants were female (88%), Caucasian (87% and 10% African American), and worked full-time (87%). Participants held a variety of jobs within the bank, but most were relationship bankers (26%), tellers (23%), senior tellers (19%), and financial center managers (10%). On average, employees were 43 years old and had worked for the bank for over eight years. Twenty-nine percent held high school degrees, 34 percent had some college education, 11 percent had an associate's degree, 21 percent had a bachelor's degree, and two percent held graduate degrees.

Variable Measures

To establish content, construct, and discriminant validity, we performed the following steps. First, we thoroughly reviewed the prior literature. We used established scales when they existed; otherwise, we relied on the underlying literature to provide a basis for formulating survey questions. We discussed the project and research questions with the Divisional Vice-President of the field location to ensure that the questions were appropriate and worded in a manner that facilitated understanding. We conducted empirical tests (i.e., reviewed range of responses, calculated Cronbach's alpha, and ran factor analyses) suggested by Nunnally (1978), the results of which are discussed in the following sub-sections. Finally, we compared the bi-variate correlation coefficient between each pair of variables to the Cronbach's alpha and found the latter exceeded the bi-variate correlation in all cases. This result indicates that there is higher internal consistency than inter-item correlation, thus providing evidence of discriminant validity (Churchill 1979). We used data from multiple respondents to construct our variables; thus reducing the concern for common measure bias. Specifically, we used supervisors as the respondents to measure organizational citizenship behavior and performance, and employees as the respondents to measure the four other variables of interest. As a precaution, though, we ran a Hartman's one-factor test on the thirty survey questions asked of the employees. The factor solution yielded five factors with eigenvalues > 1.0. We also ran a Hartman's one-factor test on the 14 questions asked of the supervisors. The factor solution yielded 3 factors with eigenvalues > 1.0. Overall, the results of the Hartman one-factor tests, along with the use of two different respondents, support the absence of significant single-source bias (Podsakoff and Organ 1986). An abbreviated version of the survey is found in Appendix A (note that several questions are reverse coded). Descriptive statistics for the multi-item variables are reported in Table 1. In the sub-sections that follow, we briefly discuss each variable.

[Insert Table 1]

Degree of Technical Validity (TC)

We measure the degree of technical validity using a modified version of McGowan's (1998) technical characteristics of costing system information scales. We modified the wording so it is applicable to an SPMS. We asked the respondents to rate the following five questions using a 7-point scale where 1 = strongly disagree and 7 = strongly agree. The information provided by the incentive matrix is (1) accurate, (2) accessible, (3) reliable, (4) timely, and (5) understandable. The Cronbach's alpha is 0.872, indicating a high degree of internal consistency. Confirmatory factor analysis reveals that the variable is uni-dimensional and explains 67% of the variance.

Extent Reflective of Strategic Causal Model (SCM)

To measure SCM, we developed survey items based on the underlying literature, primarily the descriptions by Kaplan and Norton (1996), to capture the extent the employee's incentive matrix is linked to the firm's strategic objectives. We used a 14-item scale[3] that captures various details of the performance measurement system, such as the extent to which the performance measures are selected to fit organizational strategy and whether the measures increase employee understanding of organizational functioning**.** The respondents rated each question on a 7-point scale where 1=strongly disagree and 7=strongly disagree. The Cronbach's alpha is 0.95, which indicates high internal consistency. The factor

[3] The survey contains 20 questions regarding the incentive matrix system. We discarded three of the questions that specifically ask about benefits to the organization as opposed to the employee. Since we developed this construct specifically for this study, we ran an exploratory factor analysis on the remaining 17 questions. The factor analysis revealed two factors with eigenvalues > 1, with three questions crossloading on both factors. We removed those 3 questions, reran the factor analysis and noted that the factor solution only contained one factor, which we used in the final analysis.

analysis indicates that it is uni-dimensional, explaining 62% of the variance. Because SCM and TC both represent dimensions of the underlying SPMS, it is likely that they are correlated. To ensure discriminant validity, we ran an additional factor analysis that included all of the questions for both SCM and TC. The factor solution revealed two factors, with all questions loading on the appropriate factor without any significant cross-loadings.

Organizational Justice (PJ* and *DJ)

We measured justice using a multidimensional scale developed by Colquitt (2001). *Distributive justice (DJ)* consists of a four-item scale assessing the degree to which employees perceive they are fairly rewarded when considering their effort and level of performance. The *procedural justice (PJ)* scale uses Leventhal's (1980) six procedural rules to evaluate employees' fairness perceptions of procedures used by organizations to make decisions. The seven-item scale assesses the presence of voice, consistency, accuracy, appeal processes, bias, and ethical treatment to determine if procedures are fair. The Cronbach's alphas of 0.662 and 0.793, respectively for distributive and procedural justice, indicate high internal consistency. Moreover, the confirmatory factor analyses reveals that each of the variables is uni-dimensional and the explained variance extracted is 52% and 46%, respectively. Although we use validated scales, procedural and distributive justice are likely to be highly correlated. To ensure discriminant validity, we also ran an exploratory factor analysis with all items from both scales. The results revealed two factors with all of the items loading appropriately. We noted no significant cross-loadings.

Organizational Citizenship Behaviors (OCBOs)

Organizational citizenship behaviors are often characterized as "extra-role" behaviors (Williams and Anderson 1991) and is formally defined as: "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization" (Organ 1990, 4). OCBs are formulated both based on how employees behave with regards to individuals within the organization, along with the organization itself. In this study, we focus on the latter. We use a 7-item scale developed by Williams and Anderson (1991) to measure organizational citizenship behaviors directed at the organization. Questions includes such items as whether the employee complains about insignificant things at work, conserves and protects organizational property, and adheres to informal rules devised to maintain order. The OCBO scale has a Cronbach's alpha of 0.722, which indicates high internal consistency. However, factor analysis reveals that it has two dimensions and explains 56% of the variance. Since this is an established scale, we use all 7-items in the measurement model. However, we also conduct a robustness check using a more parsimonious measure of OCBOs that is uni-dimensional (see discussion in section 5.4).

Performance (PERF)

We use a 7-item scale developed by Williams and Anderson (1991) to measure employee performance. This measure captures what the management literature refers to as "in-role" behavior and is defined as "behaviors that are recognized by formal reward systems and are part of the requirements as described in job descriptions" (Williams and Anderson 1991, 606). We asked the supervisors to rate their employees' completion of tasks required by their jobs. Specifically, we asked such questions as whether the employee adequately completes assigned duties, whether the employee fulfills responsibilities specified in the job description, and whether the employee meets formal performance requirements of the job (see Appendix A for a complete listing). The Cronbach's alpha of 0.899 indicates high internal consistency. Factor analysis reveals that the construct is uni-dimensional, explaining 68% of the variance. To establish that the final outcome measure of our study is acting plausibly, we correlate PERF to a one-item question that asked the supervisors "If this employee has had an annual performance evaluation, what was the overall outcome of the PDP evaluation?" The firm's evaluation process assesses performance using a scale as follows: growth opportunity, performer, good performer, or very good performer. We converted these assessments to a four-point scale. The bi-variate correlation between PERF and the assessment of performance based on the employee's most recent evaluation is 0.549 ($p < 0.01$). We conclude that the survey measure of PERF is behaving plausibly.

IV. RESULTS

We use AMOS 4.0 to estimate the structural equation model shown in Figure 1. The measurement and structural models are jointly estimated using the full information maximum likelihood estimation method.[4] SEM allows us to explicitly model measurement error of the latent constructs as well as covariance among the variables. For larger samples, the full information maximum likelihood method provides efficient estimators (Boomsma and Hoogland 2001; DiStefano 2002; Byrne 2001; Kline 1998). The correlation matrix, presented in Table 2, indicates preliminary univariate support for our hypotheses. As expected, we see that TC and SCM are correlated with each of PJ and DJ. We also see that DJ and PJ are correlated with OCBOs, and OCBOs are correlated with PERF. Not surprisingly, we find that both characteristics of justice and both characteristics of the SPMS are significantly correlated with each other. However, we find no evidence of multicollinearity.[5]

[Insert Table 2]

In Table 3, we present the results of the measurement model. Since latent variables are not directly measured, we assign each of them a scale by setting the loading of one item for each latent construct to 1.0 (i.e., otherwise known as identification) (Kline 1998). This confirmatory analysis yields standardized loadings greater than 0.30 (unstandardized > 0.40), all of which are significant (p-value < 0.01). In Table 4, we report the results of the structural model. We evaluate the model using the Chi-square test statistic (1783.687), the Chi-square divided by the model degrees of freedom (1.995), the comparative fit index (0.975), the root mean square error of approximation (0.064) and Hoelter's Critical N (135). The model appears to fit the data reasonably well.[6]

[Insert Tables 3 and 4]

[Insert Figure 2]

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[4] A review of kurtosis and skewness reveals that all variables are well below 10.0 and 3.0, respectively, indicating that the data is within tolerable levels of univariate normality (Kline 1998).

[5] We reviewed the variance inflation factors and tolerance levels and found no evidence of multicollinearity.

[6] An insignificant Chi-square (Joreskog 1969), a CMINDF ratio less than 5 (Wheaton et al. 1977), a CFI close to 1 (Bentler 1990; Arbuckle and Wothke 1999), and an RMSEA of less than 0.08 (Browne and Cudeck 1993) indicates good fit. In addition, Hoelter's Critical N indicates the sample size necessary to produce an acceptable model. Although we report the Chi-square test statistic, recent evidence shows that the Chi-square test statistic is sensitive to sample size and may be misleading (Byrne 2001).

The path coefficients reported in Table 4 provide evidence on the hypotheses. We find support for all of our hypotheses except for H3, as represented in Figure 2. H1a and H2a predict that the extent to which an SPMS reflects a strategic causal model is associated with higher levels of both perceived procedural justice and distributive justice. We find that both of these hypotheses are supported ($p < 0.01$; $p < 0.01$, respectively). H1b and H2b predict that the degree to which an SPMS is technically valid is associated with higher levels of perceived procedural justice and distributive justice. We find that both of these hypotheses are supported ($p < 0.01$, $p < 0.01$, respectively). These results show that design characteristics of the SPMS that provide the basis for incentive compensation enhance perceptions of organizational justice.

To demonstrate that organizational justice is a desirable outcome, we next investigate the associations between justice and employee performance. Recall that H3 predicts that higher perceptions of distributive justice are associated with better employee performance. The results do not support this hypothesis. This finding is consistent with Erdogan (2002, 558) who concludes that distributive justice is "not a strong predictor of performance." However, he also states that "it may be premature to conclude that distributive justice is not important."

We do find support for H4, which predicts that procedural justice affects performance through organizational citizenship behaviors (PJ to OCBO, $p < 0.05$; OCBO to PERF, $p < 0.01$). To provide further evidence on this mediation hypothesis, we also perform the steps suggested by Baron and Kenny (1986). We first estimate the direct path from PJ to PERF and find that it is not significant. Second, we estimate the direct path from PJ to OCBO and find a significant relation (standardized $b = 0.192$, $p < 0.05$, two-tailed). Finally, we estimate the direct effects of *both* PJ and OCBO on PERF. We find that PJ is insignificant, while OCBO is significant even after controlling for PJ (standardized $b = 0.802$, $p < 0.01$, two-tailed). According to Kenny (2006), the necessary steps to show mediation are steps 2 and 3.[7]

[7] In our study, the direct link between PJ and PERF is weak (step 1) and thus the effect of PJ on PERF can only be seen through the effect that PJ has on OCBO. That is, in our study a significant link between PJ and PERF is not mediated by OCBO in terms of it being there and then disappearing when OCBO is included, rather the link between PJ and PERF can only be seen through OCBO, or when OCBO is included in the model. This is also

Alternative Models

Although the model presented in Table 4 is well-fitting, there is no assurance that it is the *only* model. The purpose of this section is to compare the base model to alternative models to rule out alternative model specifications (Kline 1998). The first alternative model specification in Table 5 builds the model by adding a path. When building a model, a significant X^2 difference test indicates that the alternative model is better-fitting than the base model (Kline 1998). Next, we examine two alternative model specifications that provide a test of equivalent models. Since there are mathematically equivalent models in SEM, Kline (1998) recommends that researchers justify why one model is preferred over another.

[Insert Table 5]

Alternative model 1 adds the direct paths from each of the two SPMS characteristics--degree of technical validity and extent the SPMS reflects a strategic causal model--to performance. The results show that the path coefficients on the additional two paths and the X^2 difference test are insignificant, which indicates that the alternative model is not better-fitting than the original model, and, thus we reject alternative model 1.

In alternative model 2, we remove the insignificant path from distributive justice to performance and, instead, investigate the path from distributive justice to organizational citizenship behaviors. This path does have some support in the literature, although the conclusion is that the effect of procedural justice on OCBOs is much stronger than that of distributive justice on OCBOs (Colquitt et al. 2001). The results show that the coefficient on the path from distributive justice to OCBO is insignificant and the model is not better fitting. Thus, we reject alternative model 2.

In alternative model 3, we remove the insignificant relation from distributive justice to performance, and, instead, add a path from distributive justice to procedural justice. Some contend that if employees believe they receive a fair outcome, they will in turn believe that the procedures are fair

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consistent with Luft and Shields (2003) who state that including appropriate paths in causal links can help reveal effects.

(Colquitt et al. 2001). The results show that the coefficient is significant and positive (std. coefficient 0.422, $p < 0.01$), which indicates that as employees perceive higher levels of distributive justice, they, in turn, perceive that there is a higher level of procedural justice. Although the degrees of freedom in the model are the same as the base model (i.e., they are equivalent models), the model is slightly better fitting with a Chi-Square of 1753.403, a CFI of 0.976, and an RMSEA of 0.063.

In summary, we conclude that alternative model 3 in Table 5 is also a viable model. This model complements our base model since the statistical inferences regarding the effect that the characteristics of the SPMS have on justice are unchanged. Moreover, we find that distributive justice affects employee performance through its effect on procedural justice, which strengthens the findings in our base model. The other alternative models are not better-fitting than the base model and are thus rejected.

5.4 Validity Tests for Statistical Robustness

To ensure that the SEM model results are robust, we perform two validity tests. First, recall that the confirmatory factor analysis on OCBO revealed two dimensions. We also run the SEM model using only the first dimension of OCBO (items 1, 2, 6, and 7) and find that our statistical inferences are unchanged. Second, although earlier statistical checks suggested that normality of the model variables does not appear to be a concern, a strict assumption of maximum likelihood estimation of an SEM model is multivariate normality. Thus, we perform an additional robustness check as suggested by Kline (1998) and use bootstrapping (200 samples with replacement), which does not assume multivariate normality to estimate p-values. We find that the results are qualitatively unchanged.

V. CONCLUSIONS

The SPMS appears to be a popular and highly used business tool since approximately 62% of global companies surveyed use a variation of the balance scorecard (Hendricks et al. 2004). Although many suggest that these SPMSs be used as the basis for incentive plans, little empirical research exists that investigates their effect on performance, let alone *how* that effect is achieved. In this study, we find that two characteristics of an SPMS incentive plan—its degree of technical validity and the extent it reflects a strategic causal model—are associated with higher perceptions of both distributive and procedural justice. We also provide evidence that higher perceptions of procedural justice are associated with better employee performance through organizational citizenship behavior. Although we provide limited evidence in this study that distributive justice is associated with performance, other studies conclude that distributive justice does impact several important employee outcomes (Colquitt et al. 2001).

Similar to most studies, this one does have potential limitations. This study uses survey measures at a particular point in time. Although survey measures can be noisy, we do collect data from two different sources—employees and supervisors. A strength of field-based research is external validity; however, we acknowledge that a limitation is that we must rely on underlying theory to establish cause-and-effect relations, since we cannot demonstrate these causal relations empirically. Although we may use language in the paper that suggests causality, we do acknowledge (and common to most empirical survey and field-based research studies) that we have not provided empirical evidence on this matter. Future research that triangulates on research methods, for example laboratory experiments that are strong on internal validity but weaker on external validity would provide a natural complement to this line of research. We also use data from one research site, thus it may be difficult to generalize our results. However, our study does provide several implications for future research.

First, the evidence suggests that organizational justice is a mechanism through which an SPMS incentive plan can enhance performance. We find that characteristics of an SPMS incentive plan are associated with employees' perceptions of both distributive justice and procedural justice. We find that the degree of technical validity and the extent to which the SPMS reflects a strategic causal model "equally" affect employees' perceptions of each of distributive and procedural justice.[8] Thus, in keeping with Kahneman et al. (1986), the results suggest that psychology-based explanations are relevant for understanding some management control practices. This conclusion is also consistent with the limited fieldwork that has been performed in this area (Ittner et al. 2003b).

[8] Chi-square difference tests indicated that the coefficients on the path from TC (SPMS) to DJ do not differ significantly from the coefficient on the path from TC (SPMS) to PJ, nor does a better fitting model result if all coefficients are allowed to differ. This finding indicates that there is no statistical difference among this set of coefficients.

Second, we show that the design characteristics of the performance measurement system can overcome some of the common problems associated with using an SPMS as the basis for incentives. Although we do not directly measure problems such as "gaming," we find that overall performance is enhanced when employees perceive higher levels of fairness exist in the workplace. Thus, an alternative to introducing subjectivity into the incentive process (which creates other problems such as bias) is to design the SPMS so it has a high degree of technical validity and highly reflects the organization's strategic causal model, thereby enhancing perceptions of organizational justice and in turn employee performance. This finding should be of special importance to those charged with designing SPMSs and SPMS-based incentive plans.

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Appendix A
Abbreviated Survey Questions

Latent Construct
Extent Reflective of a Strategic Causal Model (SCM)
My incentive matrix includes measures that are…
SL1: …chosen to fit BANK's strategy (versus using a set of generic measures).
SL2: …customized for each individual (versus being the same for all individuals in the bank).
SL3: …chosen because they relate to BANK's strategy.
My incentive matrix helps me understand…
SL4: …how BANK's strategy is to be achieved.
SL5: …the financial consequences of my decisions and actions.
SL6: …trade-offs that I encounter among performance measures when I am making decisions.
SL9: …the cause-and-effect relationship between my actions and BANK'S performance measurement outcomes.
The incentive matrix system…
TMS1: …receives strong support from upper management.
TMS2: …has been closely tied to the competitive strategies of BANK.
MISC1: …impacts the way I perform my job responsibilities.
MISC2: …is an appropriate system to evaluate my individual performance.
USE2: …provides me with information that reflects BANK's strategy.
USE3: …helps me make decisions that create long-term value for BANK, as opposed to focusing solely on short-term results.
USE5: …is useful because it uses multiple measures to evaluate performance.
Degree of Technical Validity (TC)
The information provided by the incentive matrix is…
TC1:…accurate.
TC2:…accessible.
TC3:…reliable.
TC4:…timely.
TC5:…understandable.
Distributive Justice (DJ)
DJ1: My outcomes (e.g., pay, recognition, promotions) reflect the effort I have put into my work.
DJ2: My outcomes are appropriate for the work I have completed.
DJ3: My outcomes reflect what I have contributed to BANK.
DJ4: My outcomes are justified, given my performance.
Procedural Justice (PJ)
PJ1: I am able to express my views and feelings during procedures used to make decisions at BANK.
PJ2: I have influence over outcomes arrived at by procedures used to make decisions at BANK.
PJ3: Procedures used to make decisions at BANK are applied consistently.
PJ4: Procedures used to make decisions at BANK are free of bias.
PJ5: Procedures used to make decisions at BANK are based on accurate information.
PJ6: I am able to appeal outcomes arrived at by procedures used to make decisions at BANK.
PJ7: Procedures used to make decisions at BANK uphold ethical and moral standards.
Organizational Citizenship Behaviors - Organization (OCBO)
OCBO1: Attendance at work is above the norm.
OCBO2: Gives advance notice when unable to come to work.
OCBO3: Takes undeserved work breaks.

OCBO4: Spends a great deal of time with personal phone calls.
OCBO5: Complains about insignificant things at work.
OCBO6: Conserves and protects organizational property.
OCBO7: Adheres to informal rules devised to maintain order.
In-Role Performance (PERF)
PERF1: Adequately completes assigned duties.
PERF2: Fulfills responsibilities specified in job description.
PERF3: Performs tasks that are expected of him/her.
PERF4: Meets formal performance requirements of the job.
PERF5: Engages in activities that will directly affect his/her performance evaluation.
PERF6: Neglects aspects of the job he/she is obligated to perform.
PERF7: Fails to perform essential duties.

Figure 1
Theoretical Model

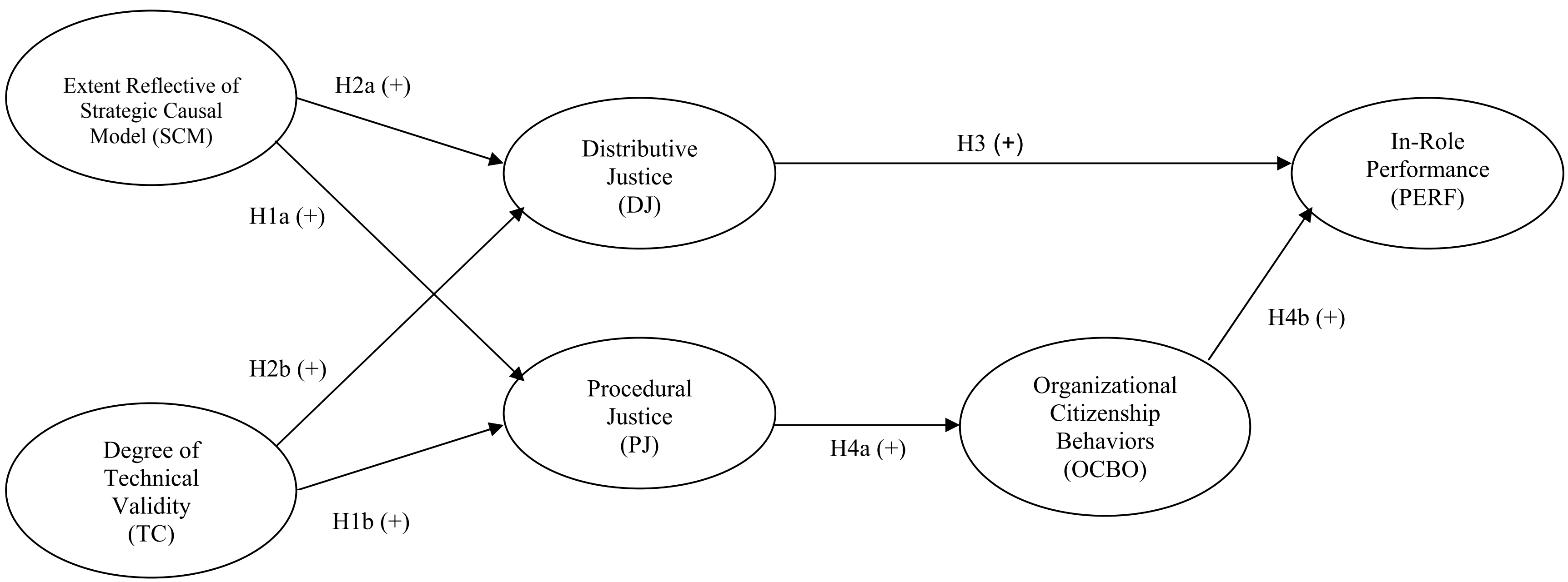

Figure 2
Results

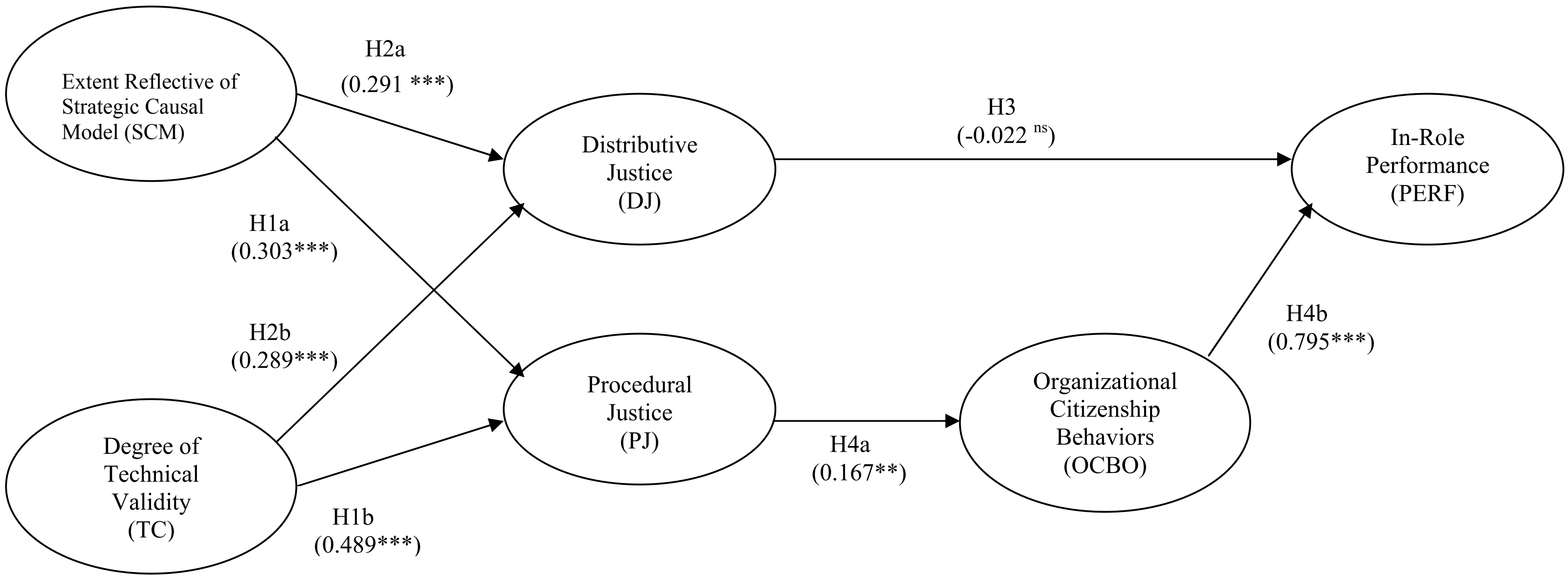

Table 1
Descriptive Statistics

Latent Construct	Item N	Item Mean	Std. Dev.	Min.	Max.	Cronbach's alpha (std.)
Extent Reflective of Strategic Causal Model (SCM)						0.950
My incentive matrix includes measures that are…						
SL1: …chosen to fit BANK's strategy (versus using a set of generic measures).	242	5.40	1.122	1	7	
SL2: …customized for each individual (versus being the same for all individuals in the bank).	242	4.60	1.645	1	7	
SL3: …chosen because they relate to BANK's strategy.	242	5.44	1.175	1	7	
My incentive matrix helps me understand…						
SL4: …how BANK's strategy is to be achieved.	242	5.23	1.269	1	7	
SL5: …the financial consequences of my decisions and actions.	242	5.29	1.268	1	7	
SL6: …trade-offs that I encounter among performance measures when I am making decisions.	242	5.15	1.204	1	7	
SL9: …the cause-and-effect relationship between my actions and BANK's performance measurement outcomes.	242	5.38	1.196	1	7	
The incentive matrix system…						
TMS1: …receives strong support from upper management.	242	5.67	1.238	1	7	
TMS2: …has been closely tied to the competitive strategies of BANK.	242	5.51	1.188	2	7	
MISC1: …impacts the way I perform my job responsibilities.	242	5.32	1.394	1	7	
MISC2: …is an appropriate system to evaluate my individual performance.	242	4.80	1.622	1	7	
USE2: …provides me with information that reflects BANK's strategy.	242	5.33	1.300	1	7	
USE3: …helps me make decisions that create long-term value for BANK, as opposed to focusing solely on short-term results.	242	5.29	1.367	1	7	
USE5: …is useful because it uses multiple measures to evaluate performance.	242	5.39	1.245	1	7	
Degree of Technical Validity (TC)						0.872
The information provided by the incentive matrix is…						
TC1:…accurate.	242	5.34	1.249	1	7	
TC2:…accessible.	242	5.49	1.338	1	7	
TC3:…reliable.	242	5.26	1.256	1	7	
TC4:…timely.	242	4.99	1.469	1	7	
TC5:…understandable.	242	5.09	1.554	1	7	
Distributive Justice (DJ)						0.662
DJ1: My outcomes (e.g., pay, recognition, promotions) reflect the effort I have put into my work.	242	4.72	1.988	1	7	
DJ2: My outcomes are appropriate for the work I have completed.	242	4.60	1.544	1	7	
DJ3: My outcomes reflect what I have contributed to BANK.	242	3.81	1.963	1	7	
DJ4: My outcomes are justified, given my performance.	242	4.54	1.575	1	7	

Latent Construct	Item N	Item Mean	Std. Dev.	Min.	Max.	Cronbach's alpha (std.)
Procedural Justice (PJ)						0.793
PJ1: I am able to express my views and feelings during procedures used to make decisions at BANK.	242	5.01	1.613	1	7	
PJ2: I have influence over outcomes arrived at by procedures used to make decisions at BANK.	242	4.12	1.599	1	7	
PJ3: Procedures used to make decisions at BANK are applied consistently.	242	4.81	1.613	1	7	
PJ4: Procedures used to make decisions at BANK are free of bias.	242	4.16	1.578	1	7	
PJ5: Procedures used to make decisions at BANK are based on accurate information.	242	5.37	1.317	1	7	
PJ6: I am able to appeal outcomes arrived at by procedures used to make decisions at BANK.	242	4.40	1.360	1	7	
PJ7: Procedures used to make decisions at BANK uphold ethical and moral standards.	242	6.07	1.109	1	7	
Organizational Citizenship Behaviors - Organization (OCBO)						0.722
OCBO1: Attendance at work is above the norm.	242	5.63	1.581	1	7	
OCBO2: Gives advance notice when unable to come to work.	242	5.95	1.270	1	7	
OCBO3: Takes undeserved work breaks.	242	5.85	1.478	1	7	
OCBO4: Spends a great deal of time with personal phone calls.	242	5.46	1.510	1	7	
OCBO5: Complains about insignificant things at work.	242	5.24	1.752	1	7	
OCBO6: Conserves and protects organizational property.	242	6.08	0.950	2	7	
OCBO7: Adheres to informal rules devised to maintain order.	242	5.77	1.052	2	7	
In-Role Performance (PERF)						0.899
PERF1: Adequately completes assigned duties.	242	5.92	1.151	1	7	
PERF2: Fulfills responsibilities specified in job description.	242	5.85	1.220	1	7	
PERF3: Performs tasks that are expected of him/her.	242	5.90	1.211	1	7	
PERF4: Meets formal performance requirements of the job.	242	5.85	1.274	2	7	
PERF5: Engages in activities that will directly affect his/her performance evaluation.	242	5.01	1.569	1	7	
PERF6: Neglects aspects of the job he/she is obligated to perform.	242	5.69	1.573	1	7	
PERF7: Fails to perform essential duties.	242	6.02	1.387	2	7	

Table 2
Correlation Matrix

This table reports the results of inter- and intra-correlations among the latent constructs for the holdout sample. The diagonal is known as the “reliability diagonal”, which reports the standardized Cronbach’s alpha for each latent construct. This index measures the internal consistency or reliability of the construct. The remaining measures in the table are the correlation coefficients between the pairs of latent variables. An indicator of discriminant validity occurs if the correlation coefficients in each column are less than the Cronbach’s alpha. This comparison indicates that a higher correlation exists within the variable than between measures using the same method.

	SCM	**TC**	**DJ**	**PJ**	**OCBO**	**PERF**
SCM	**0.950**					
TC	0.612**	**0.872**				
DJ	0.331**	0.367**	**0.662**			
PJ	0.499**	0.585**	0.511**	**0.793**		
OCBO	0.122	0.146*	0.138*	0.146*	**0.722**	
PERF	0.098	0.039	0.102	0.056	0.665**	**0.899**

* significant at 0.05
** significant at 0.00

Where:
SCM – Extent Reflective of a Strategic Causal Model
TC – Degree of Technical Validity
DJ – Distributive Justice
PJ – Procedural Justice
OCBO – Organizational Citizenship Behaviors – Organization
PERF – In-role Performance

Table 3
Measurement Model

This table reports the descriptive statistics along with the results of maximum likelihood estimation of the measurement model for the latent variables used in Figure 1. The referent indicators that define the scale of the latent variables are denoted by an asterisk (*).

Latent Variables	N	Mean	Std. Dev.	Standardized Factor Loading
Extent Reflective of Strategic Causal Model (SCM)				
My incentive matrix includes measures that are…				
SL1: …chosen to fit BANK's strategy (versus using a set of generic measures).	242	5.40	1.122	0.782
SL2: …customized for each individual (versus being the same for all individuals in the bank).	242	4.60	1.645	0.659
SL3: …chosen because they relate to BANK's strategy.	242	5.44	1.175	0.784
My incentive matrix helps me understand…				
SL4: …how BANK's strategy is to be achieved.	242	5.23	1.269	0.806
SL5: …the financial consequences of my decisions and actions.	242	5.29	1.268	0.872
SL6: …trade-offs that I encounter among performance measures when I am making decisions.	242	5.15	1.204	0.810
SL9: …the cause-and-effect relationship between my actions and BANK's performance measurement outcomes.	242	5.38	1.196	0.864
The incentive matrix system…				
TMS1: …receives strong support from upper management.	242	5.67	1.238	0.651
TMS2: …has been closely tied to the competitive strategies of BANK.	242	5.51	1.188	0.719
MISC1: …impacts the way I perform my job responsibilities. *	242	5.32	1.394	0.760
MISC2: …is an appropriate system to evaluate my individual performance.	242	4.80	1.622	0.746
USE2: …provides me with information that reflects BANK's strategy.	242	5.33	1.300	0.732
USE3: …helps me make decisions that create long-term value for BANK, as opposed to focusing solely on short-term results.	242	5.29	1.367	0.760
USE5: …is useful because it uses multiple measures to evaluate performance.	242	5.39	1.245	0.827
Degree of Technical Validity (TC)				
The information provided by the incentive matrix is…				
TC1:…accurate.	242	5.34	1.249	0.849
TC2:…accessible.	242	5.49	1.338	0.733
TC3:…reliable.	242	5.26	1.256	0.907
TC4:…timely.	242	4.99	1.469	0.610
TC5:…understandable. *	242	5.09	1.554	0.723

Latent Variables	N	Mean	Std. Dev.	Standardized Factor Loading
Distributive Justice (DJ)				
DJ1: My outcomes (e.g., pay, recognition, promotions) reflect the effort I have put into my work.	242	4.72	1.988	0.598
DJ2: My outcomes are appropriate for the work I have completed.	242	4.60	1.544	0.741
DJ3: My outcomes reflect what I have contributed to BANK.	242	3.81	1.963	0.338
DJ4: My outcomes are justified, given my performance. *	242	4.54	1.575	0.700
Procedural Justice (PJ)				
PJ1: I am able to express my views and feelings during procedures used to make decisions at BANK.	242	5.01	1.613	0.631
PJ2: I have influence over outcomes arrived at by procedures used to make decisions at BANK.	242	4.12	1.599	0.566
PJ3: Procedures used to make decisions at BANK are applied consistently.	242	4.81	1.613	0.706
PJ4: Procedures used to make decisions at BANK are free of bias.	242	4.16	1.578	0.448
PJ5: Procedures used to make decisions at BANK are based on accurate information.	242	5.37	1.317	0.759
PJ6: I am able to appeal outcomes arrived at by procedures used to make decisions at BANK.	242	4.40	1.360	0.428
PJ7: Procedures used to make decisions at BANK uphold ethical and moral standards. *	242	6.07	1.109	0.663
Organizational Citizenship Behaviors - Organization (OCBO)				
OCBO1: Attendance at work is above the norm.	242	5.63	1.581	0.521
OCBO2: Gives advance notice when unable to come to work.	242	5.95	1.270	0.590
OCBO3: Takes undeserved work breaks.	242	5.85	1.478	0.386
OCBO4: Spends a great deal of time with personal phone calls.	242	5.46	1.510	0.465
OCBO5: Complains about insignificant things at work.	242	5.24	1.752	0.544
OCBO6: Conserves and protects organizational property.	242	6.08	0.950	0.615
OCBO7: Adheres to informal rules devised to maintain order. *	242	5.77	1.052	0.604
In-Role Performance (PERF)				
PERF1: Adequately completes assigned duties.	242	5.92	1.151	0.880
PERF2: Fulfills responsibilities specified in job description.	242	5.85	1.220	0.939
PERF3: Performs tasks that are expected of him/her.	242	5.90	1.211	0.933
PERF4: Meets formal performance requirements of the job.	242	5.85	1.274	0.858
PERF5: Engages in activities that will directly affect his/her performance evaluation.	242	5.01	1.569	0.311
PERF6: Neglects aspects of the job he/she is obligated to perform.	242	5.69	1.573	0.705
PERF7: Fails to perform essential duties. *	242	6.02	1.387	0.809

Table 4
Structural Model

This table reports the results of maximum likelihood estimation of the structural equation model depicted in Figure 1. Each cell contains the standardized coefficient.

Base Model				
Dependent Variable (R^2)	Independent Variable	Hypothesis	Hypothesized Direction	Coefficient
DJ (0.284)	SCM	H2a	+	0.291***
PJ (0.535)	SCM	H1a	+	0.303***
DJ (++)	TC	H2b	+	0.289***
PJ (++)	TC	H1b	+	0.489***
PERF (0.631)	DJ	H3	+	-0.022
OCBO (0.028)	PJ	H4	+	0.167**
PERF (++)	OCBO	H4	+	0.795***
Model Fit Statistics				
X^2		1783.687***		
DF		894		
CMINDF		1.995		
CFI		0.975		
RMSEA		0.064		
Hoelter's Critical N		135 (0.01)		

++ R^2 is reported on another row since this dependent variable is repeated in the table.

***,**,* indicates the significance of the *p*-value at <0.01, 0.05, and 0.10, respectively, for the unstandardized coefficients. We report one-tailed *p*-values for the directional hypotheses.

Table 5
Comparison of Base Model to Alternative Models

This table presents the maximum likelihood estimation of the structural equation model in Table 4 to three alternative model specifications. The first alternative builds the model by adding two additional paths. A significant X^2 difference test indicates that the alternative model is better fitting than the base model. The last two alternatives are equivalent models, which are mathematically identical; therefore, the individual paths are assessed and a model is chosen based on its theoretical underpinnings. Each cell contains the standardized coefficient.

Dependent Variable	Independent Variable	Base Model	Alt. 1	Alt. 2	Alt. 3
DJ	SCM	0.291***	0.292***	0.287***	0.312***
PJ	SCM	0.303***	0.302***	0.303***	0.179**
DJ	TC	0.289***	0.287***	0.290***	0.257**
PJ	TC	0.489***	0.491***	0.488***	0.365***
PERF	DJ	-0.022	0.040	--	--
OCBO	PJ	0.167**	0.187**	0.091	0.169**
PERF	OCBO	0.795***	0.809***	0.793***	0.793***
Alternative Model Specification:					
PERF	SCM	--	0.015	--	--
PERF	TC	--	-0.122	--	--
OCBO	DJ	--		0.116	--
PJ	DJ	--			0.422***
	Model Fit:				
	X^2	1783.687	1780.454	1782.648	1753.403
	p-value	0.000	0.000	0.000	0.000
	Df	894	892	894	894
	CMINDF	1.995	1.996	1.994	1.961
	CFI	0.863	0.975	0.975	0.976
	RMSEA	0.064	0.064	0.064	0.063

++ R^2 is reported on another row since this dependent variable is repeated in the table.

***,**,* indicates the significance of the *p*-value at <0.01, 0.05, and 0.10, respectively, for the unstandardized coefficients. We report one-tailed *p*-values for the directional hypotheses.