



# ***Fairness Perceptions and Trust as Mediators for Transformational and Transactional Leadership: A Two-Sample Study***

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*This research presents a comprehensive model of relationships between transformational and transactional leadership, procedural and distributive justice, trust, job satisfaction, organizational commitment, and organizational citizenship behaviors (OCBs). Structural equation modeling was used to test a theoretical model with two independent samples that were comprised of 192 and 155 matched leaders and subordinates. Several rival models were also tested. Finally, "stacked" modeling techniques showed that the parameter estimates developed from the two samples were invariant except for one additional relationship, which was significant in the second sample only. The results supported the indirect effect of transformational leadership on OCBs through procedural justice and trust. Implications and directions for future research are discussed. © 1999 Elsevier Science Inc. All rights reserved.*

In the last decade, the focus of leadership research has shifted from traditional or transactional models of leadership to a new genre of leadership theories, all of which have charisma as their central concept. This may be, in part, because of their promise of extraordinary individual and organizational outcomes and, in part, due to the inherent "romance of charisma" (House & Shamir, 1993; Meindl, 1990). The present research focuses on the theory of transactional and transformational leadership, which was initially developed by Burns (1978) and further refined by Bass (1985).

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According to Bass (1985), *transactional leaders* clarify for their followers the followers' responsibilities, the expectations the leaders have, the tasks that must be accomplished and the benefits to the self-interests of the followers for compliance. Thus, transactional leadership is based on an exchange process in which the leader provides rewards in return for the subordinate's effort and performance. The primary factors of the Bass and Avolio (1993) transactional leadership model include contingent reward (followers and leaders have a positively reinforcing interaction), management-by-exception (the leader intervenes only when things go wrong), and laissez-faire (leadership is absent). *Transformational leaders*, on the other hand, motivate their followers to perform beyond expectations by activating followers' higher order needs, fostering a climate of trust, and inducing followers to transcend self-interest for the sake of the organization. The primary factors of the transformational leadership model conceptualized by Bass and Avolio (1993) include charisma or idealized influence (followers trust in and emotionally identify with the leader), inspirational motivation (followers are provided with symbols and emotional appeals directed at goal achievement), intellectual stimulation (followers are encouraged to question their own way of doing things or to break with the past), and individualized consideration (assignments are delegated to followers to provide learning opportunities). Bass and Avolio (1993) argue that the best leaders are both transactional and transformational which probably explains why studies have shown consistently high intercorrelations between transformational and transactional leadership, with a number obtained in excess of .7 (e.g., Avolio, Bass, & Jung, 1996; Podsakoff, Mackenzie, Moorman, & Fetter, 1990; Yammarino & Dubinsky, 1994).

Studies in this genre of leadership, using a wide variety of samples, have shown that transformational leadership is positively related to employee satisfaction and to those in-role behaviors which constitute job performance (Bass, 1990; Bass & Avolio, 1993; Pillai, 1995). However, research in this area has focused on in-role behaviors and only a limited number of studies have focused on extra-role behaviors, such as organizational citizenship (e.g., Podsakoff et al., 1990). This has occurred despite the conceptualization of transformational leadership as being capable of eliciting extraordinary levels of motivation and "performance beyond expectations" (Bass, 1985). Organizational citizenship behaviors (OCBs) are defined as work-related behaviors that are discretionary, not related to the formal organizational reward system, and promote the effective functioning of the organization (Organ, 1988). According to Organ (1988), OCBs include five components: conscientiousness, sportsmanship, civic virtue, courtesy, and altruism. Research on OCBs has steadily progressed, creating a wide nomological network of predictor, mediating, and outcome variables. Podsakoff et al. (1990) examined the direct and indirect effects of transformational leadership on OCBs and found that transformational leadership influenced OCBs through trust (and not directly). They concluded, "assessing employees' perception of fairness in future research may help us better understand how to build employee trust" (p. 138) and citizenship behaviors. In a recent review of transformational leadership theory, Bass (1995: 475) observed that "there has been relatively little basic

research testing of the many networks of linkages proposed to explain how transformational leadership works.” The present study, thus, attempts to extend previous work on transformational leadership and its relationship with OCBs, and to integrate research on organizational justice, commitment, and satisfaction. We do this by presenting and testing a model of the impact of transformational and transactional leadership on citizenship behaviors through perceptions of justice and trust. Thus, our study goes beyond existing research by testing a more comprehensive model of leadership-OCB relationships than previous research and by examining the generalizability of our findings in two separate samples.

According to Wayne, Shore, and Liden (1997), “the exchange between an employee and his or her direct superior is the primary determinant of employee behavior” (p. 103). In examining the relationship between leadership behaviors and OCBs, Blau’s (1964) concept of social exchange, which refers to relationships that involve unspecified future obligations, has been found to be very useful. According to Organ (1988), “the inherent ambiguity of such a system frees the individual to contribute in discretionary fashion without thinking that this will be acquiescence to exploitation” (p. 553). Social exchange provides a different basis for casting relationships from economic or transactional exchanges in which the obligations are clearly specified and are more short-term in orientation. As Settoon, Bennett, and Liden (1996) observe, “exchanges that are social in nature are based on trust that gestures of goodwill will be reciprocated at some point in the future” (p. 220). In the following paragraphs, we lay the foundation for examining the relationship between leadership behaviors and organizational citizenship using economic and social exchange to build a model that includes procedural and distributive justice, and trust.

#### *Exchange and Relational Contracts*

MacNeil (1985) described a continuum of exchange and relational contracts. Exchange contracts take the form of economic exchanges, which are based on transactions and are short-term in nature (Konovsky & Pugh, 1994). Relational contracts, on the other hand, take the form of social exchange, covenantal, and psychological contracts, which go beyond economic exchange and strictly transactional contracts. Social exchange, covenantal relationship development, and psychological contracts have all been used as explanations for the occurrence of citizenship behaviors. Social exchange explains why subordinates become obligated to their supervisors, and contribute in ways that transcend the requirements of the formal employment contract (Settoon et al., 1996). A covenantal relationship is based on commitment to the welfare of both parties to the exchange; a psychological contract involves a set of beliefs held by a person regarding the terms of the exchange agreement to which that person is a party. All three involve reciprocation in the form of citizenship behaviors (Konovsky & Pugh, 1994).

Konovsky and Pugh (1994) presented a social exchange model of OCBs in which they examined the role of trust and fairness in eliciting OCBs. Building on the work of Organ (1988) and others (e.g., Folger & Konovsky, 1989), Konovsky and Pugh’s (1994) study showed that citizenship behaviors occurred in a context in which social exchange characterized the quality of leader-subordinate relation-

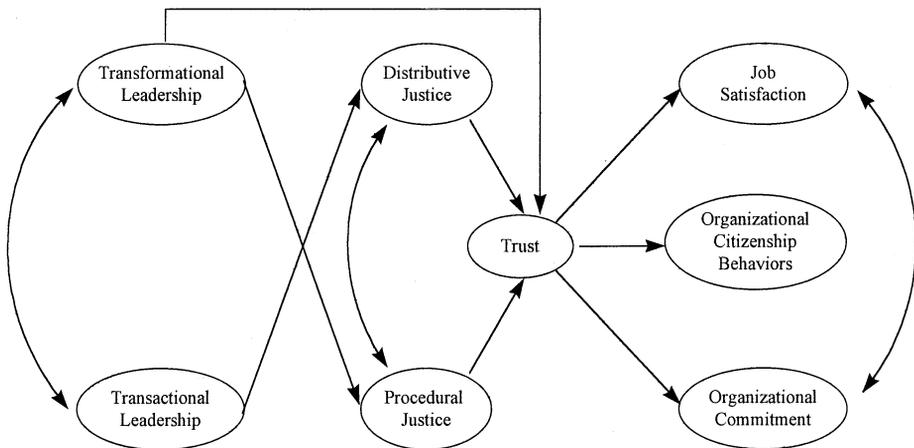
ships and that trust was an important mediator of the relationship between procedural justice and OCBs. However, their model accounted for only 9% of the variance in OCBs, suggesting that additional variables would be useful in enhancing our understanding of OCBs. Although we have distinguished between the two forms of exchange, we do not mean to suggest that the exchange is either purely social exchange or purely economic exchange, but we concur with Organ and Konovsky (1989) that it is the perception of the relationship between leader and subordinates in social exchange terms that elicits organizational citizenship behaviors from subordinates.

Figure 1 presents the theoretical model which we developed to integrate the literature and which guides our research; the next section provides an explication of each component of the model and reviews appropriate supporting theory and research.

### Theoretical Model

#### *Leadership and Fairness Perceptions*

The first part of our theoretical model includes one relationship that, to the best of our knowledge, has been largely left unexamined: the relationship of transformational and transactional leadership to procedural and distributive justice. Organizational justice is the term used to describe the role of fairness as it directly relates to the workplace (Greenberg, 1987). Specifically, organizational justice focuses on the ways in which employees determine if they have been treated fairly in their jobs and the ways in which those perceptions influence other organizational outcomes (Alexander & Ruderman, 1987; Folger & Konovsky, 1989; Fryxell & Gordon, 1989; Greenberg, 1996; Moorman, 1991; Thibaut &



**Figure 1.** Initial Theoretical Model ( $M_T$ )<sup>a</sup>

<sup>a</sup>Error terms are not shown; double-headed curved lines depict non-structural relationships (correlations)

Walker, 1975). The two sub-domains that justice research has typically focused on are: (a) distributive justice, which relates to the fairness of the outcomes an employee receives; and (b) procedural justice, which describes the fairness of the procedures used to determine those outcomes (Folger & Greenberg, 1985). Procedural justice is multi-dimensional and consists of formal procedures (the degree to which procedures are fair) and interactional justice (the way in which the procedures are carried out), as suggested by recent research (e.g., Greenberg, 1990; Moorman 1991). Procedural justice has been found to play an important role in leadership evaluations. Increases in opportunities to express their opinions, for instance, have been shown to heighten subordinates' judgements of procedural justice and, thereby, subordinates' evaluations of supervisors' leadership capabilities, especially under conditions where the subordinates have low decision control (Tyler, 1986). For example, the procedures used in determining pay raises uniquely contribute to trust in the leader and to organizational commitment (Folger & Konovsky, 1989).

Transformational leadership has been linked to outcomes such as leadership effectiveness, satisfaction, innovativeness, quality improvement, and both subjective and objective ratings of performance—although the underlying processes are not entirely clear (Bass, 1995). It may be that such a leader is able to define the leader-subordinate relationship as being outside the economic contract. One way in which the transformational leader may achieve this goal is through procedural justice and trust. Such leadership involves empowerment (e.g., allowing subordinates a voice in decision-making processes, supporting them for thinking on their own, treating them equitably through individualized consideration; Bass, 1985). When followers perceive that they can influence the outcomes of decisions that are important to them and that they are participants in an equitable relationship with their leader, their perceptions of procedural justice are likely to be enhanced. The use of procedurally fair supervisory practices affects outcomes, such as employees' commitment to the system and trust in the system. Fair procedures may also have a symbolic meaning in that employees are treated as ends rather than means (Folger & Konovsky, 1989; Konovsky & Pugh, 1994; Lind & Tyler, 1988).

Procedural justice includes promoting group solidarity over the long term (Greenberg, 1995). Concern about "group good" (the group-values model) has been identified as an important element of procedural justice (Lind & Tyler, 1988; Tyler & Lind, 1990) and this may well be one of the sources of the influence of transformational leaders as they focus subordinates on placing the welfare of the group, the organization, or country above their own needs (Bass, 1985). Procedural justice theorists have also argued that in addition to affecting subordinates' positive attitudes towards decisions that leaders make, procedural justice has a symbolic function that helps to strengthen the individual's relationship with the leader (Korsgaard, Schweiger, & Sapienza, 1995). Several studies provide strong evidence that people consider the nature of their treatment by others as a determinant of fairness (Greenberg, 1996). This, in turn, affects trust in the supervisor and the system as a whole. It follows that in order to gain trust, build commitment to his/her goals, and elicit extraordinary levels of performance, a

transformational leader must be perceived as providing interpersonally fair treatment to subordinates. Our model, therefore, shows transformational leadership to be positively related to procedural justice (see Figure 1).

In contrast, more transactionally oriented leadership may create an environment in which the subordinate defines his or her relationship with the organization as an economic exchange where emphasis is on providing rewards in exchange for meeting agreed-upon objectives. Bass (1985) clearly identifies transactional leadership as being based on material or economic exchange and transformational leadership as being based on social exchange. Under transactional leaders, employees are more likely to be concerned about the fairness of outcomes than the fairness of procedures because their relationship with their leader is based on the outcomes they receive in exchange for their effort. Thus, in contrast to procedural justice, "distributive justice is the typical metric for judging the fairness of transactional contracts and economic exchanges" (Konovsky & Pugh, 1994: 658). This may stem, in part, from the fact that one of the more important norms of distributive justice is that the parties to an exchange reciprocate benefits with the expectation of receiving comparable benefits in the short run (Konovsky & Pugh, 1994). Research on the role of distributive justice in performance appraisal indicates that in order to be perceived as fair, the supervisor must strengthen the employee's instrumentality beliefs by making sure that employees "have well-defined beliefs about what outcomes they may expect to receive for the work they do" (Greenberg, 1996: 175). This clearly agrees with the conceptualization of transactional leadership by Bass (1985), who suggests that such leaders operate by clarifying instrumentalities for their subordinates. Thus, the role of the transactional leader is to make rewards (and punishments) clearly contingent on performance and specify the outcomes that the individual can expect in exchange for good performance. Our theoretical model, thus, shows transactional leadership being positively related to distributive justice.

#### *Justice as A Mediator of the Relationship Between Leadership and Trust*

In general, research has shown that procedural justice is highly correlated with trust (Konovsky & Pugh, 1994; Tyler & Degoey, 1996). For example, Alexander and Ruderman (1987) found a positive relationship between perceptions of both procedural justice and distributive justice and trust in upper-level management. However, procedural justice had the higher correlations with both trust and evaluation of supervisors than did distributive justice. Similar results were obtained by Lind and Tyler (1988). This suggests that employees' perceptions of fairness in general, and procedural justice in particular, may be important in the process of building trust (Folger & Konovsky, 1989; Lind & Tyler, 1988). Trust, in turn, has been linked to the sense of identity that an employee derives from his or her relationships with authorities (Tyler & Degoey, 1996). In fact, trust has been shown to have a positive impact on group problem-solving and decision-making, along with being associated with openness, experimentation with new behaviors, and non-threatening feedback on performance (Argyris, 1964).

The use of procedurally fair leadership practices affects employees' trust in the supervisor and the organization itself because the development and use of fair

procedures explicitly demonstrates the importance placed on the rights (and duties) of individual employees. Korsgaard et al. (1995) showed that procedural justice played an important mediating role in the relationship between leader consideration and trust in the leader. Brockner and Siegel (1995) argue that individuals may view the structural (e.g., decision/process control) and interpersonal components of procedural justice in the organization as indicative of how they will be treated in the future. Procedures that are structurally and interactionally fair will "engender trust in the system and in the implementers of decisions, whereas a lack of structural and/or interactional fairness will elicit low levels of trust" (Brockner & Siegel, 1995: 403). Along the same lines, the fairness of outcomes or distributive justice may also promote trust in the leader and the organization. Our model specifies that both procedural and distributive justice may be related to trust. In general, however, research has supported the relative importance of procedural justice over distributive justice in work settings (Folger & Konovsky, 1989; Konovsky & Pugh, 1994; Lind & Tyler, 1988). It may well be that it is procedural justice that mediates the relationship between transformational leadership and trust. Using a similar logic, it does not seem unreasonable to suggest that the impact of transactional leadership on trust may be mediated by distributive justice (see Figure 1). Thus, both transactional and transformational leaders may be able to build trust in their subordinates but the means by which they do so may be different.

#### *Transformational Leadership and Trust: A Direct Relationship?*

So far, it has been suggested that procedural justice may mediate the relationship between transformational leadership and trust. A possibility that we have not considered is that transformational leadership behaviors may influence trust directly, so that the total effects of transformational leadership on trust may be the result of a combination of unmediated and mediated effects (through procedural justice). Thus, procedural justice may only partially mediate the relationship between transformational leadership and trust for several reasons. Bennis and Nanus (1985) suggested a direct relationship between transformational leadership and trust, since effective transformational leaders earn the trust of their followers. Trust may also be important to transformational leaders because of the need to mobilize follower commitment towards the leader's vision (Bass, 1985). Thus, it is very unlikely that a leader who is not trusted by his or her followers can successfully achieve commitment to a vision because a lack of confidence in the leader will reduce the appeal of the vision. Followers of transformational or charismatic leaders are usually expected to support the leader in his or her attempts to change the status quo and to be ready to take risks. Mayer, Davis, and Schoorman (1995) argue that trust is an important antecedent to risk-taking behavior. Transformational leaders intellectually stimulate their followers to rethink problems and take risks. Thus, if transformational leaders wish to motivate their followers to take risks and chart new territories, they may have to set a personal example in order to win the trust of their followers. Kouzes and Posner (1987) cite several studies that demonstrate the important role played by leader integrity in affecting followers' perceptions of effective leadership. Also,

Podsakoff et al. (1990) showed that trust, conceptualized as faith in and loyalty to the leader, was directly related to transformational leadership. Several researchers have argued, and some have empirically demonstrated (e.g., House, Spangler, & Woycke, 1991; Pillai, 1996), that transformational or charismatic leaders emerge during organizational crises and are most effective at such times. Mishra (1996) suggests that trust in the leader plays a very important role in organizational crisis and transformation through its effect on undistorted and truthful communication, collaboration among functional areas within the organization, and decentralized decision making. Lewicki and Bunker (1995) argue that trust may result from a sense of identification with the other's desires and intentions. The type of activities that strengthen identification based trust include developing a collective identity, creating joint products and goals, and committing to commonly shared values (Lewicki & Bunker, 1995). These activities have also been identified as characteristic of a transformational relationship between leader and subordinates (Bass, 1985). Thus, transformational leaders may be able to build mutual trust by developing a common vision that group members can collectively identify with and pursue with the objective of creating joint products. Finally, Tyler and DeGoey (1996) argue that there is greater empirical support for a relational model of trust between supervisors and subordinates than for an instrumental model of trust: Trust is more likely to result when a social bond has been created between a subordinate and his or her supervisor (i.e., in a transformational relationship), than in the case where instrumental judgements, such as outcome favorability, are more salient (i.e., in a transactional relationship). Thus, based on our review of past research, we feel it is more plausible to argue for direct and partially mediated roles for trust as the best way to model its relationship with transformational leadership. Although non-linear and interactive or moderated relationships are also plausible, we feel that the transformational leader plays an important role in actively building trust through his or her specific behaviors and that trust is not simply a contextual variable that facilitates the transformational process. Thus, our model posits a direct relationship between transformational leadership and trust, in addition to procedural justice as a mediator of transformational leadership and trust.

#### *Trust and Its Relationship to Commitment, Job Satisfaction, and OCBs*

According to Butler (1991: 647), "the literature on trust has converged on the beliefs that (a) trust is an important aspect of interpersonal relationships, (b) trust is essential to managerial careers, and (c) trust in a specific person is more relevant in terms of predicting outcomes than is the global attitude of trust in generalized others." Thus, trust and its antecedents and consequences are likely to be especially important in the context of supervisor-subordinate relationships (Podsakoff et al., 1990).

Although transformational leadership may be an important antecedent of trust, possible consequences of trust include commitment, satisfaction, and citizenship behaviors. Commitment entails a high level of identification with the organization's goals and values, a willingness to exert extra effort for the benefit of the organization, and a strong desire to maintain membership in the organiza-

tion (Morrow, 1983). Both trust in the leader and the organization, and commitment, are necessary for successful attainment of the leader's vision. As Siegel, Brockner, and Tyler (1995) suggest, organizational commitment can be preserved during organizational downturns if trust has been established with employees. It is true that "all leaders require trust as a basis for their legitimacy and as the mortar that binds leader to follower" (Nanus, 1989: 101). Liou (1995) found that trust in the supervisor and the organization was predictive of commitment to the organization. Trust is also related to organizational citizenship behaviors (Marlowe & Nyhan, 1992; Podsakoff et al., 1990). Trust generates a sense of unspecified obligation that may be manifested in citizenship behaviors. It seems reasonable to suggest that when there is trust between a supervisor and subordinate, the subordinate will be more willing to engage in extra-role behavior. The subordinate knows that he or she will not be taken unfair advantage of by the supervisor. Robinson and Wolf (1995) showed that civic virtue was reduced to the extent that employees believed that their psychological contract had been violated and this relationship was partially mediated by trust. Deluga (1995) found that supervisory behaviors that facilitated trust were related to organizational citizenship behaviors. Similarly, it stands to reason that trust in supervisor-subordinate relations will influence subordinate job satisfaction. Driscoll (1978) showed that trust in the decision-maker added to the understanding of job satisfaction beyond the effects of participation in decision making. Lagace (1991) examined managers and salespeople and found that reciprocal trust in the relationship greatly influenced the job satisfaction of the salespersons. Thus, our theoretical model specifies direct relationships between trust and job satisfaction, organizational commitment, and organizational citizenship behaviors. In this model, we did not include any direct paths from job satisfaction or organizational commitment to OCBs, because previous research has suggested that OCBs, job satisfaction, and organizational commitment may all stem from the positive impressions afforded by fair procedures and that fairness perceptions may impact these outcome variables only through the building of employee trust (cf. Moorman, Niehoff, & Organ, 1993).

In summary, our objective in this study was to extend and integrate previous research by: (a) testing a comprehensive theoretical model (Figure 1) in two different samples; and (b) exploring several alternative models that deviate from our hypothesized model (by including relationships that have had mixed support in earlier research). These less-supported alternative models are described in the paragraphs below and then subsequently tested along with our theoretical model. This testing of rival models is generally seen by theorists (e.g., Blalock, 1964; Heise, 1969) as the best way to subject a structural model to "severe theory testing" (Jermier & Schriesheim, 1978), particularly given that concurrently collected (although two-source) data are employed in our analyses (for a review, demonstration, and further discussion of the rival models approach to testing structural models, see Jermier & Schriesheim, 1978). The six alternative models we formulated and tested retain the basic structure of our hypothesized model, but include additional or alternative paths among some of the variables.

### *Alternative Models*

The first alternative model (Model 1) tests whether job satisfaction and organizational commitment are related to OCBs. These relationships emerge from the original work of Organ (1988), where he presents the results of eight studies supporting a link between job satisfaction and OCBs. However, he makes a distinction between the affective and cognitive components of job satisfaction and suggests that the cognitive component is more strongly related to OCBs than the affective component. Recent research (Organ & Konovsky, 1989; Scholl, Cooper, & McKenna, 1987; Williams & Anderson, 1991) has pursued this line of inquiry and found support for Organ's assertion. In general, cognitive factors are better determinants of OCBs than affective factors. For example, no significant relationships have been found between positive and negative affectivity and OCBs (Konovsky & Organ, 1996).

Organizational commitment has mixed evidence regarding its relationship with OCBs. Research by O'Reilly and Chatman (1986) and Schaubroeck and Ganster (1991) supports this linkage, whereas a study by Williams and Anderson (1991) found no support. Manogran and Conlon's (1994) meta-analysis of 12 studies found a true score correlation of .21, but with a 90% confidence interval of  $-.01$  to  $.44$ . Furthermore, researchers have demonstrated that employee commitment accounts for organizational citizenship behavior, and commitment, like trust, may be an important component of the social exchange process (Konovsky & Pugh, 1994).

Model 2 examines the direct relationship between transactional leadership and procedural justice and between transformational leadership and distributive justice. In most studies of justice, there has tended to be a high correlation between procedural justice and distributive justice (Moorman, 1991). Studies have also consistently demonstrated an augmenting effect of transformational over transactional leadership (Bass & Avolio, 1993). Furthermore, as reported earlier, studies have also consistently demonstrated high correlations between transactional and transformational leadership. A longitudinal study by Gavin, Green, and Fairhurst (1995), showed that managerial control strategies (which were more similar to transactional leadership behaviors than transformational leadership behaviors) impacted interactional justice in the short-run but not over a longer period of time. Thus, transactional leadership may have a limited impact on perceptions of interactional justice (which is a component of procedural justice). Thus, a weak relationship may exist between transformational leadership and distributive justice, and between transactional leadership and procedural justice (although the relationships suggested in our initial theoretical model seem more plausible to us). Therefore, we decided to test these additional relationships in the hope of providing greater support for the model as we originally conceptualized it.

Model 3 examines direct relationships between the two types of leadership behaviors and OCBs. Our initial hypothesized theoretical model excludes these direct relationships, but there are reasons why they should also be tested. In particular, the Podsakoff et al. (1990) study showed a direct relationship between

transactional leadership and OCBs, but no direct relationship between transformational leadership and OCBs. However, since transformational leadership emphasizes eliciting extraordinary follower outcomes (Bass, 1985), it could be argued as potentially having a direct relationship with OCBs. Podsakoff et al. (1990) argue that because managers consider both in-role and extra-role behaviors when evaluating employee performance, employees may see the performance of OCBs as a means of obtaining recognition and other rewards. Thus, from both a theoretical and an empirical standpoint, it seems desirable to test these direct relationships which were excluded from our initial hypothesized theoretical model (Figure 1).

With respect to Models 4–6, several studies indicate that organizational justice is related to a variety of organizational variables, especially various outcome variables (Greenberg, 1990). McFarlin and Sweeney (1992) examined the relationship of distributive and procedural justice and organizational and personal outcomes (such as commitment, evaluation of the supervisor, and pay and job satisfaction) from a referent cognitions perspective. They found distributive justice to be a better predictor of personal outcomes (such as job satisfaction) and procedural justice to be a better predictor of organizational outcomes (such as commitment). In general, research has also shown that procedural justice perceptions are associated with organizational system evaluations and distributive justice perceptions are associated with outcomes received by employees (Greenberg, 1996). Moorman (1991) found support for the relationship between perceptions of justice and job satisfaction. This is not surprising because Organ (1988) has argued that job satisfaction includes an element of fairness. Other research (Konovsky & Cropanzano, 1991; Moorman et al., 1993) has also shown support for a relationship between procedural justice and organizational commitment and, in a longitudinal study, Tansky (1993) found support for the relationship between perceptions of overall fairness and organizational commitment. She suggested that a “culture of fairness” was responsible for influencing employee attitudes over time. Finally, Moorman (1991) examined relationships between distributive and procedural justice and OCBs. He found that procedural justice was related to OCBs. Distributive justice and a second element of procedural justice, formal procedures, were not related to OCBs. He argued that if employees perceive a culture of fairness, then they are probably likely to reciprocate with citizenship behaviors. This is consistent with social exchange theory, predicting that, given certain conditions, people seek to reciprocate those who benefit them (Adams, 1965; Blau, 1964). For all these reasons, we included alternative Models 4–6 which test whether there is a relationship between justice perceptions and job satisfaction (Model 4), organizational commitment (Model 5), and OCBs (Model 6).

## Method

As mentioned above, we used two independent samples to increase confidence in our results (cf. Bollen, 1989; Hayduk, 1987).

### *Sample One and Procedure*

Sample one comes from a manpower services agency in the Southern United States. All respondents were permanent employees of the organization. The respondents completed the survey pertaining to subordinate perceptions and were asked to provide the names and addresses of their immediate supervisors—who were then contacted independently to complete an OCB questionnaire on that subordinate. All participants in this research were ensured complete confidentiality. Four hundred eighty-six employees, out of seven hundred contacted, completed the subordinate survey; these were matched with 209 surveys completed by their supervisors. A total of 192 respondents had complete information and only these were used in our analyses, so as to avoid estimation problems which might arise from pair-wise missing data (Jöreskog & Sörbom, 1993). The response rate of the superiors was 43% (209/486). The respondents' mean age was 37.7 years ( $SD = 10.05$ ) and 81% were female. Thirty-four percent of the sample had a high school degree, 51.6% an undergraduate degree, and 8% a graduate degree. The average tenure was 3.26 years ( $SD = 4.11$ ). A MANOVA analysis of the matched and unmatched subordinate respondents revealed that there were no significant differences on any of the demographic variables. Additionally, comparing the covariance matrices (using LISREL 8; Jöreskog & Sörbom, 1993) for the eight variables included in the theoretical model from the two subsamples (matched and unmatched) found them to be equivalent ( $\chi^2 = 39.35$ ,  $df = 28$ ,  $p = .08$ ), reducing concern about sampling bias possibly affecting our results.

### *Sample Two and Procedure*

Sample two consists of two hundred eighty-six undergraduate and MBA students at a Northeastern and a Southern university who completed the same survey as used in sample one (for credit). All the students who were contacted agreed to participate in the survey. Each participant was required to be currently employed for *at least 20 hours per week*. After completion of the questionnaire, each participant was asked to provide their immediate supervisor with a brief supervisory questionnaire (the OCB measure, the same as was used in sample one). One hundred and seventy-five complete supervisor surveys were returned, yielding a 61% response rate. The supervisor surveys were matched with the subordinate surveys to create a sample of 155 respondents with complete data. The respondents' mean age was 25.7 years ( $SD = 7.51$ ) and they were employed an average of 2.8 years ( $SD = 3.1$ ). The respondents were 58% male and 37.4% held full-time jobs. The majority of the respondents held entry-level jobs, but about a fifth of the sample held managerial or professional positions. A MANOVA analysis of the matched and unmatched subordinate respondents revealed that there were no significant differences on any of the demographic variables. Additionally, we again tested the hypothesis that the two covariance matrices of the eight study variables (for the matched and unmatched subgroups) were equivalent and found that the hypothesis of equivalence could not be rejected ( $\chi^2 = 36.58$ ,  $df = 28$ ,  $p = .13$ ). Thus, like sample one, sampling bias does not appear to be particularly problematic in sample two.

### Measures

As mentioned above, identical surveys were employed for samples one and two; these contained the following measures.

**Organizational Citizenship Behaviors.** OCBs were measured by the Organizational Citizenship Behavior Scale, developed by Podsakoff and MacKenzie (1989). This 24-item measure uses five subscales to measure the subdomains conceptualized by Organ (1988): altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. This measure employs a seven-point Likert response scale. Validation information supplied by Podsakoff et al. (1990) shows reliabilities ranging from .70 for civic virtue to .85 for altruism; confirmatory factor analysis also supported the hypothesized factor structure. Following common convention in OCB research (e.g., Moorman, 1991; Podsakoff et al., 1990), this measure was administered to each respondent's supervisor and an overall or global (total) score employed. The rest of the measures summarized below were completed by the subordinates as part of their survey.

**Organizational Justice.** Two measures were employed to assess organizational justice. The first, the six-item distributive justice scale, measures the degree to which rewards received by employees are perceived to be related to performance inputs. The second procedural justice measure is a 12-item scale that taps the: (1) presence of formal procedures for handling disputes; and (2) perceived fairness of the interactions involving these procedures. Study participants were asked to describe their relationships with their immediate supervisor. Both of these measures were developed by Moorman (1991) and have seven-point Likert response alternatives. Further, Moorman (1991) found internal consistency reliabilities of .94 and .93 (respectively) for distributive justice and procedural justice.

**Job Satisfaction.** Job satisfaction was measured by Brayfield and Rothe's (1951) 18-item job satisfaction scale; this instrument uses a five-point Likert response format and seven of the items are reverse-scored. Price and Mueller (1986) found reliability coefficients to consistently exceed .70 and concluded that this scale manifested adequate reliability and validity.

**Organizational Commitment.** Organizational commitment was measured by the 12-item instrument developed by O'Reilly and Chatman (1986). In two studies, exploratory factor analysis supported the three subdimensions of internalization, identification, and compliance conceptualized by O'Reilly and Chatman (1986). This measure uses a seven-point Likert response scale and has four reverse-scored items; it has also had good reliability in previous applications (e.g., O'Reilly & Chatman, 1986).

**Transformational Leadership.** Transformational leadership was measured by summing the five revised four-item transformational sub-scales that B. J. Avolio (personal communication, March 8, 1995) recently derived from the Multi-Factor Leadership Questionnaire (MLQ; Bass & Avolio, 1991). The MLQ is the most widely used measure of transformational leadership behaviors. Bass and Avolio (1993) report that a number of studies using this scale conducted in a wide variety of settings across different national cultures support the basic

propositions of the model. Its sub-scales measure attributed charisma, idealized influence, inspirational leadership, intellectual stimulation, and individualized consideration. Study participants were asked to describe the leadership behaviors of their immediate supervisors. In the past, the MLQ has consistently yielded high reliabilities but its factor structure has also been problematic (Bycio, Hackett, & Allen, 1995; Tepper & Percy, 1994) and inconsistent (Bass & Avolio, 1993; Howell & Avolio, 1993; Yammarino & Dubinsky, 1994; Yammarino, Spangler, & Bass, 1993). Thus, a composite of the five sub-scales was used to conform to common convention and to avoid problems with the MLQ's dimensional sub-structure.

**Transactional Leadership.** This measure also came from the MLQ (Bass & Avolio, 1991). Following Podsakoff et al. (1990) and others, transactional leadership was conceptualized as contingent reward behavior and operationalized by the nine-item contingent rewards scale of the MLQ. Like the transformational measure, this scale has consistently demonstrated good reliability across different samples (Bass & Avolio, 1991, 1993). Once again, study participants were asked to describe the leadership behaviors of their immediate supervisors.

**Trust.** Trust was measured by a 12-item instrument developed by Marlowe and Nyhan (1992). Study participants were asked to rate their trust in their immediate supervisors. This instrument uses a seven-point response scale, with one reflecting nearly zero and seven reflecting nearly 100% confidence and trust in the supervisor. Marlowe and Nyhan (1992) report the results of studies conducted in seven different public sector organizations (with a total sample of 779 individuals). They found test-retest reliabilities to range from .79 to .94, and internal consistency reliabilities ranging from .95 to .97; Marlowe and Nyhan, thus, concluded that the scale was psychometrically adequate.

### *Analyses*

LISREL 8 (Jöreskog & Sörbom, 1993) with maximum likelihood estimation was used for the structural equation analyses. Additionally, as suggested by Anderson and Gerbing (1988) and recommended by Medsker, Williams, and Holahan (1994), Jöreskog and Sörbom (1993), and others, a three-step analytic procedure was employed.

First, measurement models were evaluated prior to the estimation of structural models, so as to prevent measurement misspecifications from being misinterpreted as misspecifications of the structural models (Burt, 1976). Since we had a large number of items relative to the size of the two samples, and since the underlying structure of several of our measures was not clearly established, exploratory factor analysis (EFA) was employed for these analyses (Gerbing & Hamilton, 1996). As noted by Gerbing and Hamilton (1996), "EFA is a viable strategy" for measurement model analysis, particularly since it can "aid the researcher in recovering an underlying measurement model that can then be evaluated" (p. 71) using structural equations modeling.

Our EFAs began by examining the measure of each of our eight variables separately, and items that performed poorly were deleted from the sub-scales in both samples (cf. Medsker et al., 1994). These analyses used principal compo-

nents and principal axis (common) factor extraction methods, both with an oblimin rotation (delta was set at 0.0, allowing for fairly correlated factors; cf. Rummel, 1970). The criteria for determining the number of factors were that all principal component eigenvalues be greater than one (Harman, 1976) and that scree plots of the principal axis factors support the number of factors extracted as being appropriate (Cattell, 1966). When these analyses were completed, all of the items which remained were then examined simultaneously (in both samples separately), using the same approach as outlined above.

The second analytic step was the structural equation analysis of the theoretical and rival models, along with the use of Anderson and Gerbing's (1988) decision-tree analysis using the data from sample one (this later analysis involves the testing of alternative hypotheses against the initial theoretical model, following the logic laid out in Anderson & Gerbing, 1988; more detail is given on this approach below).

The third and final analytic step involved using the data from sample two to conduct a multi-sample or "stacked model" assessment of the best-fitting models supported in stage two (Jöreskog & Sörbom, 1993).

**Single Indicator Approach.** Since measurement of each variable was refined in the first step of our analysis (the EFAs), a single indicator approach was used to test our structural models. Following recommended procedure (e.g., Jöreskog & Sörbom 1993; Williams & Hazer, 1986), the error variance of each variable was set equal to its variance multiplied by one minus the scale's reliability. This technique has been used by a variety of studies, generally with good results (e.g., Moorman, 1991).

Additionally, we should mention that in testing the models discussed below, all models were specified with correlations between the two exogenous variables (transformational and transactional leadership), correlations between the endogenous distributive and procedural justice variables, and correlations between the endogenous satisfaction and commitment variables. This was done because, in empirical data, transformational and transactional leadership are often highly correlated (e.g., Avolio et al., 1996; Podsakoff et al., 1990; Yammarino & Dubinsky, 1994), while the other variables have typically been moderately correlated. Thus, while we did not want to model causal relationships between them, we wanted to specify models which would fit the data reasonably well and which would statistically control for these interrelationships (Bollen, 1989; Hayduk, 1987). Finally, we should note that in none of the models were extraneous or "garbage" parameters (such as correlated errors) estimated to inflate model fit (cf. MacCallum, 1986).

**"Stacked" or Multi-Sample Analysis of Sample 2 Data.** As mentioned above, the multi-sample or "stacked" modeling procedures of LISREL-8 (Jöreskog & Sörbom, 1993) were applied to examine the stability of model parameter estimates across samples one and two. These analyses were conducted for the best-fitting theoretical models uncovered in the decision-tree analysis of sample one (models  $M_U$ ,  $M_{U2}$ , and  $M_{U3}$ , discussed below). Example 9.2 in Jöreskog and Sörbom (1993) shows the general procedure employed, and for clarification it should be noted that this analysis involved testing the gamma ( $\Gamma$ ) and beta ( $\beta$ )

structural parameters for equality across the two samples. Thus, for example, to yield the results shown in the top section of Table 4, nine equalities were specified to test for invariance across samples in model  $M_{U1}$ : (1) EQ GA(1,1,2) GA(1,2); (2) EQ GA(1,2,1) GA(2,1); (3) EQ GA(1,3,1) GA(3,1); (4) EQ BE(1,3,1) BE(3,1); (5) EQ BE(1,3,2) BE(3,2); (6) EQ BE(1,4,3) BE(4,3); (7) EQ BE(1,5,3) BE(5,3); (8) EQ BE(1,6,3) BE(6,3); and (9) EQ BE(1,5,2) BE(5,2); where gamma 1 and 2 were transformational and transactional leadership, respectively, and beta 1 through 6 were distributive and procedural justice, trust, job satisfaction, organizational commitment, and organizational citizenship behaviors, respectively. Similar constraints were used to test for invariance across samples one and two in models  $M_{U2}$  and  $M_{U3}$ ; for further procedural details, see Jöreskog and Sörbom (1993).

**Fit Indices.** To examine model fit and compare alternative models, the Relative Noncentrality Index (RNI; McDonald & Marsh, 1990), Nonnormed Fit Index (NNFI; Bentler & Bonnet, 1980), and  $\chi^2$  difference test (Bentler & Bonnet, 1980) were used. Additional aids to interpretation, such as the Goodness-of-Fit Index (GFI; Bollen, 1989), Adjusted Goodness-of-Fit Index (AGFI; Bollen, 1989), and the Root Mean Square Residual (RMSR) reported by LISREL 8 (Jöreskog & Sörbom, 1993), were also employed. It should be mentioned that the multi-sample procedure does not yield an AGFI index, so that none are reported below for the "stacked" analyses (cf. Jöreskog & Sörbom, 1993).

The RNI is an overall measure of goodness-of-fit that corresponds to a population parameter, and it has been recommended by Medsker et al. (1994) for comparing nested models. The NNFI is derived from the Tucker-Lewis Index (Tucker & Lewis, 1973), and compares the theoretical model with the absolute null model. The  $\chi^2$  difference test examines the gain in predictive power in one nested model over another in terms of the change in  $\chi^2$ . The GFI reflects the relative amount of the variances and covariances in the sample matrix to the variances and covariances predicted by the model matrix. The AGFI adjusts the GFI for the degrees of freedom of the model relative to the number of variables. The RMSR (Jöreskog & Sörbom, 1989) is an index of the size of the residuals obtained by the subtraction of the model covariance matrix from the sample covariance matrix. Normally, RMSRs of .10 or less are considered indicative of acceptable model fit. Finally, with respect to the various fit indices, it should be noted that the .90 or higher convention first suggested by Bentler and Bonnet (1980) has become the *de facto* standard in the field (Medsker et al., 1994); consequently, we use this same standard.

We should note that the significance of a model's  $\chi^2$  statistic was not used to assess its fit. Instead, based upon the recommendations of Gerbing and Anderson (1992), Marsh, Balla, and McDonald (1988), Mulaik, James, Van Alstine, Bennett, Lind, and Stilwell (1989), and others (e.g., Goffin, 1993; Medsker et al., 1994; Tanaka, 1993), we used the fit indices mentioned above. Furthermore, between-model comparisons were undertaken using the  $\chi^2$  difference test recommended by Bollen (1989) and others (e.g., Hayduk, 1987; Jöreskog & Sörbom, 1993; Medsker et al., 1994), along with differences in the fit indices (cf. Gerbing & Anderson, 1992; Medsker et al., 1994; Tanaka, 1993).

## Results

### *Exploratory Factor Analyses of the Measurement Model*

As noted above, the measurement model was examined by multiple EFAs on the measured variables (cf. Gerbing & Hamilton, 1996). The obtained results are first briefly presented for each measure separately and then for the measures as a set.

***Transformational Leadership.*** The twenty items comprising the transformational leadership measure were reduced to sixteen items by multiple EFAs in samples one and two. Reanalysis of the data after the elimination of the four poor-performing items showed that factor one yielded a clean single-factor solution in both samples.

***Transactional Leadership.*** In both samples, the nine contingent reward items formed a single factor and no items required deletion due to poor structure.

***Distributive Justice.*** The six-item distributive justice measure produced a one-factor solution in both samples, allowing the retention of all six of its original items.

***Procedural Justice.*** The twelve procedural justice items produced a single factor in the first sample and two factors in the second. However, these two factors correlated .60 and the factor structure replicated, with the exception of one item, the theoretical structure and original empirical results of Moorman (1991) in developing this measure. Thus, all twelve items were retained as a single factor.

***Trust.*** In both samples, the trust measure formed two factors which reflected trust in the supervisor (factor 1, with eight items) and trust in the organization (factor 2, with four items). Since our intent was to measure trust in the supervisor, the items forming the second factor were, therefore, deleted. Subsequent factor analyses of these items in samples one and two produced clean single factor solutions for the revised eight item measure.

***Job Satisfaction.*** The factor analysis of sample one yielded a four-factor solution, with factors one and two having eight items each and factors three and four only a single item each. The items in factor one reflected affective appraisals of satisfaction with the job, while factor two had items referring to the amount of interest the job held for the respondent. The analysis of sample two generated comparable results, with the first factor containing the same eight items as sample one and the second factor containing the same nine items as in sample one's second and third factors. Factor three contained a single item. Thus, based on these results the factor containing the eight affective items was employed as the measure of job satisfaction; subsequent factor analyses of this measure yielded single factor solutions in both samples, confirming its acceptability.

***Organizational Commitment.*** Samples one and two yielded similar two-factor solutions, with the eight items corresponding to the internalization and identification factors identified by Williams and Anderson (1991) loading on factor one. Thus, following the example of Williams and Anderson (1991), the compliance items were dropped from this measure and subsequent factor analyses of both samples yielded clean single-factor solutions.

**Organizational Citizenship Behaviors.** The factor-analytic results which were obtained in samples one and two had most of the twenty-four OCB items load on their theoretically appropriate factor. Thus, since the few poor items differed between the two samples, all of the original items were included in the global OCB measure that was subsequently used in both samples.

**All Items as a Set.** After the EFAs described above had yielded refined measures from the variables, the total set of 91 remaining items were factor-analyzed in the two samples separately. In sample one, extracting eight factors produced factor intercorrelations whose absolute values ranged from a low of .01 to a high of .45. The pattern of item loadings was extremely "clean" for all the measures, except the leadership and OCB scales. For the leadership scales, the transformational items generally had loadings on factor two with two substantial (>.40) cross loadings on factor seven, while the transactional items loaded only on factor two (factors two and seven correlated .27). Seventeen of the 24 items composing the OCB scale loaded on factor three and the remaining seven on factor eight. Five of these seven items compose the sportsmanship sub-scale of the OCB scale, while the remaining two come from the courtesy scale. In sample two, extracting eight factors produced factor intercorrelations with absolute values from .00 to .46. The item-loading pattern was relatively "clean" for all the measures, again. The leadership and OCB scales manifested the same patterns and the satisfaction and commitment items loaded together on the same factor. Here, the transformational items all loaded on factor two, while the transactional items mostly loaded on factor two (seven items) with substantial cross-loadings on factor eight (four items). The correlation for the two factors was .34. The OCB measure mostly loaded on factor three with five cross-loadings on factor seven. Interestingly, these cross-loadings were the five items forming the sportsmanship sub-scale resulted in sample one. Though the satisfaction and commitment measure loaded on the same factor in this larger EFA, when they were factor analyzed just by themselves, they factored cleanly into their two component measures.

Factoring just the leadership items by themselves yielded more positive results. In sample one, fifteen of the sixteen transformational leadership items loaded on only the first factor (one transformational item also loaded .43 on factor two), while three of the nine transactional leadership items loaded in excess of .40 on factor one (in addition to their loadings on factor two); the two factors correlated .45. In sample two, fourteen of the sixteen transformational items loaded only on factor one; two items had additional loadings on the second factor. The nine transactional items had four loadings on factor one, in addition to factor two; the correlation between the two factors was .48. Since the problematic leadership items differed in the two samples, the previously revised sets of sixteen transformational and nine transactional were not further refined by item deletion. We wanted to use identical operational measures in the two samples and felt that the gain in being able to directly compare results (via multi-sample or "stacked" modeling) would offset the tendency which might exist for the structural models to appear less well-supported than they actually were, due to relatively minor misspecifications in the underlying measurement models (Burt, 1976).

*Descriptive Statistics, Bivariate Correlations, and Tests for Multicollinearity*

Table 1 presents the means, standard deviations, coefficient alpha internal consistency reliabilities, and Pearson product-moment intercorrelations among the eight refined variables produced by our measurement model analysis in samples one and two. As shown in Table 1, all of the sample one scale reliabilities are .89 or higher and all of the sample two coefficients are .88 or better; all are, thus, quite satisfactory—both in general (cf. Nunnally & Bernstein, 1994) and for structural equation modeling in particular (cf. Bollen, 1989; Hayduk, 1987).

Some of the correlations shown in Table 1, however, do raise concerns about multicollinearity and the suitability of the data for structural equations modeling. Thus, the degree of multicollinearity was assessed among the measured variables in the two samples (separately) using Haitovsky's (1969) chi-square test of variable independence. The rule of thumb for bivariate relationships proposed by Rockwell (1975) was used for the exogenous transformational and transactional leadership variables. According to Rockwell (1975), Haitovsky's test should be used to determine whether excessive multicollinearity exists among sets of three or more "independent variables." Rockwell also notes that only when bivariate correlations exceed .80 should independent variable interdependence be considered excessive. The results of the Haitovsky tests for variable independence obtained significance ( $p < .01$ ) in both samples for the 3-variable set of procedural justice, distributive justice, and trust, and for the 5-variable set that added transformational and transactional leadership. Additionally, the bivariate correlation between transformational and transactional leadership in the two samples (.78) is close, but does not exceed the .80 rule of thumb. Finally, as House (1996) has recently noted, it is probably more important to employ procedures which control for statistical interdependencies between leadership measures, than to use measures which are statistically independent but which are theoretically question-

**Table 1.** Variable Means, Standard Deviations, Reliabilities, and Correlations<sup>a</sup>

Variable	Mean	SD	$\alpha^b$	1	2	3	4	5	6	7	8
Mean	—	—	—	3.09	2.89	5.46	3.43	4.48	3.22	4.10	4.95
SD	—	—	—	0.83	0.86	1.02	0.84	1.07	0.77	1.22	0.46
$\alpha^b$	—	—	—	.94	.88	.94	.89	.93	.89	.89	.90
1. Transformational Leadership	3.40	1.03	.96	—	.78	.58	.47	.56	.49	.61	.16
2. Transactional Leadership	2.73	1.00	.89	.78	—	.48	.50	.55	.33	.42	.12
3. Trust	5.31	1.37	.97	.75	.56	—	.46	.52	.32	.33	.08
4. Distributive Justice	3.24	1.01	.94	.43	.41	.40	—	.49	.39	.45	.17
5. Procedural Justice	4.95	1.34	.96	.59	.50	.63	.55	—	.45	.47	.02
6. Job Satisfaction	4.15	0.99	.90	.17	.12	.13	.21	.20	—	.71	.14
7. Organizational Commitment	5.16	1.21	.93	.42	.40	.35	.40	.59	.32	—	.11
8. Organizational Citizenship	5.61	0.89	.94	.34	.31	.31	.29	.25	.15	.20	—

<sup>a</sup>Correlations for sample one ( $N = 191$ ) are shown below the main diagonal; correlations above .14 are significant at the .05 level and correlations above .18 at the .01 level. Correlations for sample two ( $N = 155$ ) are shown above the main diagonal; correlations above .16 are significant at the .05 level and correlations above .21 at the .01 level.

<sup>b</sup>Internal consistency reliability (coefficient alpha).

able. Because House (1996) specifically makes this point about the Form XII Leader Behavior Description Questionnaire measures of consideration and initiating structure (Stogdill, 1963), which are very often correlated in excess of .7 (Schriesheim, House, & Kerr, 1976), we felt that our use of structural equations modeling (which statistically controls for the .78 transformational-transactional leadership relationship in samples one and two) was not unreasonable.<sup>1</sup>

### *Structural Equation Results—Sample One*

The sample one analysis is presented in two parts. In the first part, we examine the theoretical model and the six nested alternative models developed and described earlier. In the second part, we take the results from the first part and use the decision-tree analysis suggested by Anderson and Gerbing (1988). The fit indices from the analyses for both of these parts are shown in Table 2.

**Theoretical Model ( $M_T$ ).** The theoretical model seems to have a less than fully acceptable fit. The RNI and GFI equal or exceed the .90 standard, but the

**Table 2.** Model Goodness-of-Fit Indicators for Sample One

<i>Model</i>	$\chi^2$	<i>df</i>	$\Delta\chi^2$	$\Delta df$	$p^a$	<i>RNI</i>	<i>NNFI</i>	<i>GFI</i>	<i>AGFI</i>	<i>RMSR</i>
$M_T$	79.96**	17	—	—	—	.90	.84	.91	.81	.11
1	76.30**	15	3.66 <sup>b</sup>	2 <sup>c</sup>	.16	.91	.82	.92	.80	.11
2	75.66**	15	4.30 <sup>b</sup>	2 <sup>c</sup>	.12	.91	.82	.91	.79	.10
3	74.31**	15	5.65 <sup>b</sup>	2 <sup>c</sup>	.06	.91	.83	.92	.80	.11
4	78.18**	15	1.78 <sup>b</sup>	2 <sup>c</sup>	.41	.90	.82	.91	.79	.11
5	31.96**	15	48.00 <sup>b</sup>	2 <sup>c</sup>	.01	.98	.95	.96	.90	.07
6	73.92**	15	6.04 <sup>b</sup>	2 <sup>c</sup>	.05	.91	.82	.92	.80	.11
$M_U$	32.95**	16	47.01 <sup>b</sup>	1 <sup>e</sup>	.01	.98	.95	.96	.90	.07
$M_{U2}$	26.91*	15	6.04 <sup>c</sup>	2 <sup>f</sup>	.01	.98	.97	.97	.92	.06
$M_{U3}$	19.80	14	7.11 <sup>d</sup>	3 <sup>g</sup>	.01	.99	.98	.97	.94	.05

*Note.* The models are labeled as follows.  $M_T$  = the initial theoretical model (see Figure 1); Model 1 = Freeing the job satisfaction and organization commitment to OCBs paths; Model 2 = Freeing the transformational leadership to distributive justice and transactional leadership to procedural justice paths; Model 3 = Freeing the transformational and transactional leadership to OCBs paths; Model 4 = freeing the distributive and procedural justice to job satisfaction paths; Model 5 = Freeing the distributive and procedural justice to organizational commitment paths; Model 6 = Freeing the distributive and procedural justice to OCBs paths;  $M_U$  = The first revised theoretical model of the decision-tree analyses (freeing the relationship between procedural justice and organizational commitment);  $M_{U2}$  = The second revised decision tree analysis theoretical model (freeing the relationship between distributive justice and OCBs);  $M_{U3}$  = The third revised decision tree analysis theoretical model (freeing the relationship between transactional leadership and organizational commitment) (see the text for details).

<sup>a</sup>Probability of  $\Delta\chi^2$  given  $\Delta df$ .

<sup>b</sup>Difference in  $\chi^2$  from  $M_T$ .

<sup>c</sup>Difference in  $\chi^2$  from  $M_U$ .

<sup>d</sup>Difference in  $\chi^2$  from  $M_{U2}$ .

<sup>e</sup>Difference in  $df$  from  $M_T$ .

<sup>f</sup>Difference in  $df$  from  $M_U$ .

<sup>g</sup>Difference in  $df$  from  $M_{U2}$ .

\* $p < .05$ .

\*\* $p < .01$ .

NNFI and AGFI fall short. Six of the eight structural pathways in the model are significant, while the linkages between distributive justice and trust and between trust and job satisfaction are not significant.

**Model 1.** Model one frees the relationships between job satisfaction and organizational commitment with OCBs. However, the  $\chi^2$  change is not significant and the fit indices show little improvement. Thus, these two variables do not appreciably add to the prediction of OCBs over model  $M_T$ .

**Models 2 and 3.** Models 2 and 3 test the relationships between transactional and transformational leadership with justice perceptions (Model 2) and organizational citizenship behaviors (Model 3). Both models have nonsignificant  $\chi^2$  changes and marginal fit index changes (see Table 2).

**Models 4, 5, and 6.** Models 4, 5, and 6 look at the relationships between distributive and procedural justice with job satisfaction (Model 4), organizational commitment (Model 5), and organizational citizenship behaviors (Model 6). Model 4 does not show a significant  $\chi^2$  change or improvement in the other fit indicators. Model 5, however, yields a  $\chi^2$  change that is both very large and statistically significant ( $\Delta\chi^2 = 48.00$ ,  $df = 2$ ,  $p < .001$ ). The RNI and NNFI rise from .90 and .84 in  $M_T$  to .98 and .95, respectively; and the other indices show good improvement as well. The major proportion of this change is due to the large parameter estimate ( $\beta_{52} = .48$ ,  $t = 6.12$ ,  $p < .01$ ) for the procedural justice-organizational commitment relationship. Thus, this relationship clearly belongs in the theoretical model. Finally, while the  $\chi^2$  change for Model 6 is significant, the RNI and GFI rise only .01 and the NNFI and AGFI fall .02 and .01, respectively (RMR is unchanged). Thus, adding this relationship only marginally improves model fit above that of  $M_T$ .

**Decision Tree Analysis.** The decision-tree analysis (Anderson & Gerbing, 1988) presents a logical framework for making comparisons between a theoretical model of interest ( $M_T$ ; Figure 1) and nested alternative models using a specified sequence of chi-square ( $\chi^2$ ) difference tests. The nested alternative models are suggested by theory and are both more constrained ( $M_C$ ; Model  $M_T$  with at least one formerly estimated pathway now constrained to zero) and less constrained ( $M_U$ ; Model  $M_T$  with at least one pathway formerly constrained to zero now allowed to be estimated). The nomenclature we use below to label the various models in our analysis is the same as used in Anderson and Gerbing (1988). The theoretical model and alternatives are compared to each other and to a completely saturated model ( $M_S$ ) in which all paths between latent variables are allowed to freely vary. The sequence of comparisons is dictated by the logic of the decision-tree (Anderson & Gerbing, 1988) and the completely saturated model serves as the baseline model for this framework (it has the smallest  $\chi^2$  value and the comparisons against it allow assessment of the empirical adequacy of the constraints imposed in the comparison model). The head-to-head comparisons of the theoretical and alternative models provide a test of which model provides the best balance of parsimony (the fewest paths estimated) and model fit. The null hypothesis for all comparisons is that the fit of the two models is equivalent. Anderson and Gerbing (1988: 418–421) provide an extensive description of this technique.

The first step in the analysis is the comparison of  $M_T - M_S$ . This step assesses if the constraints contained in the theoretical model ( $M_T$ ) are reasonable. If the  $\chi^2$  difference ( $\Delta\chi^2$ ) is significant, it indicates that they are. That is, the paths between latent variables constrained to zero in  $M_T$  would not significantly enhance the fit of the model if they were estimated. In the present study,  $M_S$  has a  $\chi^2$  of zero with zero degrees of freedom (due to its fully saturated state). The comparison of  $M_T - M_S$  is, therefore, significant ( $\Delta\chi^2 = 79.96$ ,  $df = 17$ ,  $p < .01$ ), indicating that the paths constrained to zero in  $M_T$  are reasonable to constrain.

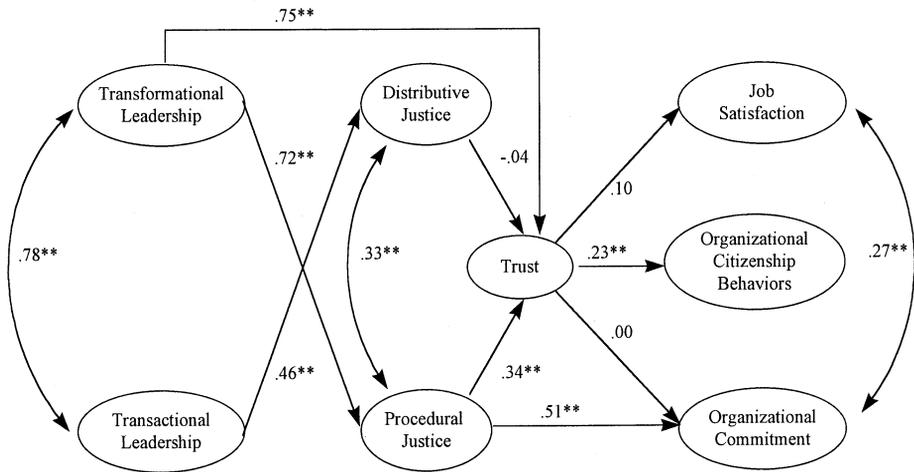
The second analytic step is to compare  $M_C - M_T$ , where  $M_C$  is the "next most likely constrained model." We felt that the most theoretically interesting constraint to impose would be on the relationship between transformational leadership and procedural justice, due to importance both of these variables in the theoretical model ( $M_T$ ). Thus,  $M_C$  ( $\chi^2 = 156.65$ ,  $df = 18$ ) is exactly like  $M_T$  except that the relationship between transformational leadership and procedural justice is constrained to zero. The  $M_C - M_T$  comparison is significant ( $\Delta\chi^2 = 76.69$ ,  $df = 1$ ,  $p < .01$ ), indicating that constraining the transformational leadership-procedural justice relationship significantly degrades the fit of  $M_C$ .

The previous comparison leads us to the third step of this analysis, the comparison of  $M_T - M_U$ . This comparison completes the three ( $M_T - M_S$ ,  $M_C - M_T$ , and  $M_T - M_U$ ) comparisons that the logic of the decision-tree analysis dictates as being necessary to rigorously examine the theoretical model and its nested alternatives (so as to identify a preferred model). Model  $M_U$  ( $\chi^2 = 32.95$ ,  $df = 16$ ) comes from freeing the relationship between procedural justice and organizational commitment that was found to be important in Model 5 of the previous analyses. The  $M_T - M_U$  comparison produces a significant  $\chi^2$  difference ( $\Delta\chi^2 = 47.01$ ,  $df = 1$ ,  $p < .01$ ), indicating that allowing this relationship to be freely estimated significantly improved the fit of  $M_U$ .

At this point of the analysis,  $M_U$  appears to be the preferred model and its structural parameter estimates are shown in Figure 2. However, the decision-tree framework provides an additional logic to explore relaxing more constraints in  $M_U$ . Anderson and Gerbing (1988), however, warn that this part of the decision tree analysis is increasingly exploratory and that results from this portion of the analysis should be viewed with caution.

The first part of this additional analysis starts with comparing  $M_U - M_S$ , in order to confirm the reasonableness of the constraints in  $M_U$ . This is the same logic as used in the first step of the earlier analysis (comparing  $M_T - M_S$ ). With a fully saturated base model, this comparison again produces a significant  $\chi^2$  difference ( $\Delta\chi^2 = 32.95$ ,  $df = 16$ ,  $p < .01$ ), supporting the conclusion that the constraints in  $M_U$  are indeed reasonable.

The second part of this further analysis consists of relaxing the "next most likely" parameter to create model  $M_{U2}$  to compare it with  $M_U$ . The parameter chosen to be relaxed is the relationship between distributive justice and OCBs, suggested by Model 6 of the previous analysis. The  $M_U - M_{U2}$  comparison is significant ( $\Delta\chi^2 = 6.04$ ,  $df = 1$ ,  $p < .01$ ), suggesting that this relationship may be important.



**Figure 2.** Model M<sub>U</sub> : Results in Sample One<sup>a</sup>

<sup>a</sup>Standardized structural coefficients (straight lines) and correlations (curved lines) shown; error terms are not shown

\* $p < .05$ ; \*\* $p < .01$ .

The third step of this extended analysis is a comparison of  $M_{U2} - M_S$ , to confirm the reasonableness of the constraints in  $M_{U2}$  (as done earlier in this exploratory procedure). Again, this comparison is significant ( $\Delta\chi^2 = 26.91$ ,  $df = 15$ ,  $p < .05$ ), indicating that the constraints in  $M_{U2}$  are reasonable.

The fourth step of this further analysis repeats relaxing the “next most likely” constraint in  $M_{U2}$  to create  $M_{U3}$ . The constraint relaxed is that of the transactional leadership-organizational commitment relationship. Following Anderson and Gerbing (1988),  $M_{U2} - M_{U3}$  was thus examined. This comparison was significant ( $\Delta\chi^2 = 7.11$ ,  $df = 1$ ,  $p < .05$ ), indicating that relaxing the transactional leadership-organizational commitment relationship significantly improves the fit of the model.

The final step of this extended analysis follows those above and compares  $M_{U3} - M_S$  (to assess the reasonableness of the constraints in  $M_{U3}$ ). This test is not significant ( $\Delta\chi^2 = 19.80$ ,  $df = 14$ ,  $p = ns$ ), indicating that the constraints in  $M_{U3}$  have reached a point of diminishing returns. That is, no more constraints in  $M_{U3}$  can reasonably be removed and still improve the fit of the model. Thus,  $M_{U3}$  is accepted as the “final” model in this analysis. However, given the caveat of Anderson and Gerbing (1988),  $M_U$  should be taken as the most defensible model, with  $M_{U2}$  and  $M_{U3}$  being considered theoretically interesting possibilities which warrant further investigation.

#### *Structural Equation Analysis: Sample Two*

Following the sample one results, we tested the invariance of the obtained model parameters using LISREL 8 and Jöreskog and Sörbom’s (1993) “stacked”

or multi-sample modeling technique. Thus, models  $M_U$ ,  $M_{U2}$ , and  $M_{U3}$  from the sample one analysis were tested as follows. First, constrained models ( $M_U$ ,  $M_{U2}$ , or  $M_{U3}$ ) were estimated setting the structural parameters of the models equal across the two samples (e.g.,  $\beta_{31}$  in sample one =  $\beta_{31}$  in sample two). In doing so, the non-structural parameters—error terms and correlations between transformational and transactional leadership, procedural and distributive justice, and job satisfaction and organizational commitment—were not constrained to be equal across the two samples. Then, unconstrained models were estimated, allowing the structural parameters to vary in each sample. Finally, the decrement in model fit produced by the constraints was assessed by the chi-square difference test and the fit indices used above (finding a nonsignificant chi-square difference indicates no significant decrement and, hence, suggests that the more parsimonious equality-constrained model be preferred over the unconstrained model).

In testing models  $M_U$ ,  $M_{U2}$ , and  $M_{U3}$ , it was discovered that only marginally acceptable fits could be obtained if a relationship between procedural justice and job satisfaction ( $\beta_{42}$ ) was not estimated in sample two (i.e., some of the fit indices were less than .90). However, allowing this relationship to be estimated in the second sample (but not in sample one) yielded indices of model fit that were clearly acceptable. Thus, since it is important to first obtain an acceptable unconstrained model before testing for parameter invariance or equality across samples (cf. Bollen, 1989; Hayduk, 1987), our tests of models  $M_U$ ,  $M_{U2}$ , and  $M_{U3}$  estimated a relationship between procedural justice and job satisfaction in sample two but not in sample one. As specifically noted by Hayduk (1987: 277), it is considered quite legitimate in stacked modeling to have “some of the effect coefficients to be constrained to be equal between the groups while other coefficients vary between the groups.” Since not estimating a relationship is equivalent to setting it equal to zero (Bollen, 1989), our estimating a procedural justice-job satisfaction relationship in sample two and not in sample one does not violate accepted good practice in multi-sample or “stacked” modeling.

**Model  $M_U$  Results.** Table 3 presents the goodness-of-fit statistics for the tests of model invariance across samples one and two, while Table 4 presents the parameter estimates obtained in each model. As shown in Table 3, the unconstrained version of model  $M_U$  is a generally good portrayal of sample one and two

**Table 3.** Goodness-of-Fit Indicators for Model Invariance Across Samples One and Two<sup>a</sup>

<i>Model</i>	$\chi^2$	<i>df</i>	<i>RNI</i>	<i>NNFI</i>	<i>GFI</i>	<i>RMSR</i>
$M_U$ Unconstrained	99.52**	31	.94	.90	.91	.07
$M_U$ Constrained	114.72**	40	.94	.91	.90	.09
$M_{U2}$ Unconstrained	87.03**	29	.95	.91	.92	.06
$M_{U2}$ Constrained	102.96**	39	.95	.92	.90	.09
$M_{U3}$ Unconstrained	70.92**	27	.96	.92	.93	.05
$M_{U3}$ Constrained	87.40**	38	.96	.94	.91	.08

<sup>a</sup>Estimating  $\beta_{42}$  (the procedural justice-job satisfaction relationship) in sample two only (see the text for details). \*\* $p < .01$ .

data, as evidenced by its satisfactory goodness-of-fit indices (RNI, NNFI, and GFI  $\geq .90$ ; RMSR  $< .10$ ). However, the constrained model  $M_U$  also shows about as good a fit and the chi-square difference test does *not* support the unconstrained model as a better fit ( $\Delta\chi^2 = 15.20$ ,  $df = 9$ ,  $p > .05$ ). Thus, model  $M_U$  appears best viewed as invariant across samples one and two, except for the additional procedural justice-job satisfaction relationship required in sample 2. The structural parameter estimates from this model are presented in Table 4 and, as shown there, they are close in size and identical in terms of their direction (+ or -) and statistical significance to those obtained for this model in sample one alone (see Figure 1).<sup>2</sup> Of course, they also include an estimate for the procedural justice-job satisfaction relationship in sample two ( $\beta_{42}$ ), a relationship not shown in Figure 1 for sample one.

**Model  $M_{U2}$  Results.** For model  $M_{U2}$ , both the unconstrained and constrained models display a generally good fit to the data (see Table 3), with RNI, NNFI, and GFI goodness-of-fit indices being equal to or greater than .90 (and their RMSRs being less than .10). However, the chi-square difference test again does not support the unconstrained over the constrained model ( $\Delta\chi^2 = 15.93$ ,  $df = 10$ ,  $p > .10$ ). As shown in Table 4, the structural parameter estimates for the constrained model  $M_{U2}$  are identical in size, direction, and statistical significance to those of constrained model  $M_U$ , with two exceptions. First, an additional positive and statistically significant relationship is added, between distributive justice and organizational citizenship ( $\beta_{61}$ ). Second, the trust-organizational citizenship relationship ( $\beta_{63}$ ), although still positive and statistically significant, is considerably diminished by the addition of this new relationship.<sup>3</sup>

**Model  $M_{U3}$  Results.** Finally, in testing the most speculative of the three models,  $M_{U3}$ , both the constrained and unconstrained models have good fits to the data (see Table 3). However, the chi-square difference test supports model invariance once again ( $\Delta\chi^2 = 16.48$ ,  $df = 11$ ,  $p > .10$ ). In examining the structural parameter estimates for constrained model  $M_{U3}$  (see Table 4), one can see that most are within 0.01 of the constrained model  $M_{U2}$  estimates and there are no changes in their statistical significance. However, after adding the new (and statistically significant and positive) transactional leadership-organizational commitment relationship ( $\Gamma_{52}$ ), the procedural justice-organizational commitment relationship ( $\beta_{52}$ ) drops slightly (it remains quite positive and statistically significant, however). The trust-organizational commitment relationship ( $\beta_{53}$ ), on the other hand, changes from weak positive to weak negative (remaining nonsignificant). Thus, the model  $M_{U3}$  results do appear less stable and, therefore, clearly more speculative than those of models  $M_U$  and  $M_{U2}$ .<sup>4</sup>

## Discussion

The primary aim of this study was to develop and empirically test a model linking transformational and transactional leadership with organizational citizenship behaviors (OCBs) by integrating several literatures and using two separate samples. Drawing on previous research, we argued that transformational leader-

**Table 4.** Structural Parameter Estimates for Models Invariant Across Samples

<i>Parameter and Relationship</i>		<i>Coefficient</i>		<i>S.E.</i>
<i>Model M<sub>U</sub></i>				
$\Gamma_{21}$	Transformational Leadership-Procedural Justice	(0.61)	0.74**	0.06
$\Gamma_{31}$	Transformational Leadership-Trust	(0.53)	0.66**	0.06
$\Gamma_{12}$	Transactional Leadership-Distributive Justice	(0.50)	0.49**	0.05
$\beta_{31}$	Distributive Justice-Trust	(0.04)	0.05	0.06
$\beta_{32}$	Procedural Justice-Trust	(0.28)	0.29**	0.06
$\beta_{42}$	Procedural Justice-Job Satisfaction <sup>a</sup>	(0.38)	0.29**	0.06
$\beta_{52}$	Procedural Justice-Organizational Commitment	(0.54)	0.52**	0.06
$\beta_{43}$	Trust-Job Satisfaction	(0.10)	0.07	0.04
$\beta_{53}$	Trust-Organizational Commitment	(0.03)	0.03	0.06
$\beta_{63}$	Trust-Organizational Citizenship	(0.26)	0.18**	0.04
<i>Model M<sub>U2</sub></i>				
$\Gamma_{21}$	Transformational Leadership-Procedural Justice	(0.61)	0.74**	0.06
$\Gamma_{31}$	Transformational Leadership-Trust	(0.53)	0.66**	0.06
$\Gamma_{12}$	Transactional Leadership-Distributive Justice	(0.50)	0.49**	0.05
$\beta_{31}$	Distributive Justice-Trust	(0.04)	0.05	0.06
$\beta_{61}$	Distributive Justice-Organizational Citizenship	(0.22)	0.19**	0.06
$\beta_{32}$	Procedural Justice-Trust	(0.28)	0.29**	0.06
$\beta_{42}$	Procedural Justice-Job Satisfaction <sup>a</sup>	(0.38)	0.29**	0.06
$\beta_{52}$	Procedural Justice-Organizational Commitment	(0.54)	0.52**	0.06
$\beta_{43}$	Trust-Job Satisfaction	(0.10)	0.07	0.04
$\beta_{53}$	Trust-Organizational Commitment	(0.03)	0.03	0.06
$\beta_{63}$	Trust-Organizational Citizenship	(0.16)	0.11**	0.04
<i>Model M<sub>U3</sub></i>				
$\Gamma_{21}$	Transformational Leadership-Procedural Justice	(0.60)	0.74**	0.06
$\Gamma_{31}$	Transformational Leadership-Trust	(0.53)	0.66**	0.06
$\Gamma_{12}$	Transactional Leadership-Distributive Justice	(0.51)	0.50**	0.05
$\Gamma_{52}$	Transactional Leadership-Org. Commitment	(0.24)	0.28**	0.07
$\beta_{31}$	Distributive Justice-Trust	(0.03)	0.04	0.06
$\beta_{61}$	Distributive Justice-Organizational Citizenship	(0.22)	0.19**	0.06
$\beta_{32}$	Procedural Justice-Trust	(0.29)	0.29**	0.06
$\beta_{42}$	Procedural Justice-Job Satisfaction <sup>a</sup>	(0.39)	0.30**	0.06
$\beta_{52}$	Procedural Justice-Organizational Commitment	(0.48)	0.45**	0.06
$\beta_{43}$	Trust-Job Satisfaction	(0.09)	0.07	0.04
$\beta_{53}$	Trust-Organizational Commitment	(-0.07)	-0.06	0.06
$\beta_{63}$	Trust-Organizational Citizenship	(0.16)	0.11**	0.04

*Note.* Common metric completely standardized coefficients are shown in parentheses.

<sup>a</sup>Parameter estimated in sample two only (see the text for details).

\*\* $p < .01$ .

ship influences OCBs indirectly through perceptions of fairness and trust. We also argued from an exchange and relational perspective that transformational leadership would be related to procedural justice and transactional leadership would be related to distributive justice. Further, we tested several alternative models containing direct relationships among the key study variables that were excluded

from our theoretical model. Finally, we tested the models in two very different samples.

Several important findings emerge from this research. First, using structural equation modeling, we found evidence for the indirect influence of transformational leadership on OCBs through procedural justice and trust. As Organ and Konovsky (1989) argued, "so long as the individual can sustain an attitude of trust in the long-term fairness of the organization in the relationship, he or she need not worry about the recompense for this or that specific OCB gesture" (p. 162). However, if that trust is violated, the employee may be more likely to recast the relationship in economic exchange terms; and frequent reappraisal of the fairness of the overall treatment by the organization may determine employees' willingness to engage in unrestrained OCBs (Organ & Konovsky, 1989). As our study suggests, both fairness and trust can be influenced by the transformational leader. Transformational leaders may, therefore, enhance individuals' perceptions of procedural justice through an emphasis on group solidarity (the basis of the "group-value model" of procedural justice) and on the collective mission or "vision". This may influence trust in the leader over the long-term and followers' tendency to engage in self-sacrificial behavior. Self-sacrificial behavior is likely to take the form of OCBs (House & Podsakoff, 1996). Building employees' trust in the leader through transformational leadership behaviors may also increase employees' tendency to engage in OCBs.

Second, our support for linkages between transformational leadership and procedural justice and between transactional leadership and distributive justice is, to the best of our knowledge, the first empirical examination of these relationships. This finding supports the view that transformational and transactional leadership may have differential impacts on subordinates' perceptions of organizational justice, based on social and economic exchange relationships. Economic exchange is based on short-term transactions, but social exchange emerges from individuals trusting that the parties to the exchange will fairly discharge their obligations over the long-term (Konovsky & Pugh, 1994). Both transformational and transactional leadership are related to fairness perceptions, albeit differently. Transformational leadership seems to influence procedural justice, which in turn builds trust. This is not surprising because affect-laden issues, such as trust, are often important outcomes of outstanding leadership, such as transformational, charismatic, and visionary leadership. Transactional leadership, on the other hand, appears to only influence distributive justice and has no impact on trust (we tested for and found no relationship between transformational leadership and distributive justice, and transactional leadership and procedural justice). However, the zero-order correlations indicate that both transformational and transactional leadership are related to distributive and procedural justice. Given the relatively strong relationship between transactional and transformational leadership, this is not surprising. Furthermore, past research has consistently found moderate correlations between procedural and distributive justice. Both the leadership and justice literatures, however, argue for a differential impact of these variables on various outcomes from both a conceptual and an empirical perspective. The use of

structural equation modeling has enabled us to separate the effects of these two types of leadership behaviors with respect to the two types of justice in a manner that is consistent in both samples. Further research appears desirable to build on the current findings.

Third, results from our initial analysis (Table 2) indicate that the theoretical model ( $M_T$ ) provides only a limited explanation of the structural relationships among the variables. This is indicated by the model's marginal fit. The inclusion of the relationship between procedural justice and organizational commitment substantially improved model fit ( $M_U$ ). Using guidelines suggested by Anderson and Gerbing (1988), we found  $M_U$  to be the most preferred model (for the reasons explained earlier). In this model, the obtained relationship between procedural justice and organizational commitment appears consistent with research by Moorman et al. (1993). Based on their findings, they suggested that organizational commitment was likely to be a consequence of the value communicated by fair procedures and that the most appropriate theoretical model should be one that contains no paths between commitment, satisfaction, and OCBs. The present research maintained this structure, but there are some strong relationships among the social exchange variables (see notes 1–3). This clearly provides evidence for the social exchange-based interpretation offered here and by other researchers (e.g., Konovsky & Pugh, 1994).

In this connection, the failure of job satisfaction and organizational commitment to relate to OCBs is not surprising. The results are quite consistent with Organ's (1990) perspective that social exchange theory provides a stronger conceptual framework for understanding OCBs than does organizational commitment. A study by Shore and Wayne (1993) showed that perceived organizational support was a better predictor of OCBs than affective or continuance commitment. In our study, the emergence of fairness perceptions and trust as important factors apparently eclipsed the relationships between satisfaction and OCBs and between commitment and OCBs. Consistent with Moorman et al.'s (1993) argument (and the mixed findings from previous research), it is possible that satisfaction, commitment, and OCBs all emerge from the fairness of procedures, which in turn influences trust. Trust implies the expectation of generous or helpful behavior on the part of the trusted person and is based on fair social rules (Hosmer, 1995). Transformational leaders may operate by enhancing the fairness of rules and procedures, inspiring trust on the part of the subordinates; this, in turn, may be reciprocally reinforced by citizenship behaviors from the subordinate (which results in more transformational behavior from the leader). It is surprising, however, that trust did not influence either job satisfaction or organizational commitment in the overall model. It may well be that employees' trust in the leader is reciprocated over the long term by specific citizenship behaviors that are directed at the leader and the immediate work group, and that trust in the leader may not necessarily translate into greater commitment to the organization or general job satisfaction. In fact, research by Wayne et al. (1997) and Settoon et al. (1996) showed that perceived organizational support (POS) was more strongly related to commitment than leadership. In general, commitment is not only

influenced by several personal, organizational, job, and non-job factors, but employees have multiple (and differing levels of) commitments to the same organization (Gregersen & Black, 1992). Further research is, thus, clearly needed to explicate these relationships.

Another interesting finding is our tentative support for the relationship between distributive justice and OCBs (models  $M_{U2}$  and  $M_{U3}$ ) and the lack of support for the relationship between procedural justice and OCBs. Although these models are exploratory in nature, their results are, nevertheless, worthy of some discussion. In previous research, Moorman (1991) found a significant relationship between the interactional component of procedural justice and OCBs, and no relationship between distributive justice and OCBs—a finding that is consistent with most research (Konovsky & Pugh, 1994). It is, therefore, not surprising that Lind and Tyler (1988) suggested that procedural justice is related to more general evaluations of organizations (e.g., trust in supervisor, commitment), whereas distributive justice is related to evaluations of specific outcomes. Organ (1988) has maintained, however, that procedural justice would be subordinate to distributive justice in determining citizenship behaviors in the employment context. Again, these relationships clearly bear further investigation.

Overall, our results support the invariance of model parameters across samples one and two, except for the need to add one additional relationship in sample two—the procedural justice-job satisfaction relationship. This suggests that most of our hypothesized relationships are supported across two diverse samples, but also that some “situational” or “context-specific” effects were present as well. The finding with respect to procedural justice and job satisfaction is consistent with some previous research (e.g., Konovsky & Cropanzano, 1991; McFarlin & Sweeney, 1992); although, as stated earlier, it is distributive justice that has been shown to be the better predictor of personal outcomes (such as job satisfaction). The Konovsky and Cropanzano (1991) study examined the role of procedural justice perceptions of drug testing programs on employee attitudes (such as job satisfaction and commitment) and found that procedural fairness, but not distributive fairness, predicted these attitudes. In a study of employees’ “litigation mentality,” Bies and Tyler (1993) found that employees’ perceptions of procedural justice and job satisfaction independently influenced employees’ consideration of a litigious response. These authors argued that, on the one hand, organizational policies aimed at emphasizing procedural justice may increase the salience of procedures (and thereby employees’ tendency to sue) while, on the other hand, increasing job satisfaction may influence employees not to pursue a legal option. In the present study, we found that the zero-order correlations between procedural justice and satisfaction were significant in both samples, although in the structural equation models this relationship was important only for sample two. Perhaps the fact that the students were largely at entry-level jobs and had lower job tenure and experience influenced this relationship. As employees develop a relationship with the organization and rise to higher levels of responsibility, it may take a lot more than just fair procedures to influence their job satisfaction. Further research in a variety of settings is, thus, needed to examine

the differential impact of procedural and distributive justice on both personal and organizational outcomes.

The finding, in the relatively more speculative Model  $M_{U3}$ , that transactional leadership (measured as contingent reward behavior) was significantly related to organizational commitment is intriguing. In a recent study, Bycio, Hackett, and Allen (1995) explored the relationship between the various dimensions of transformational and transactional leadership and organizational commitment. Using a sample of female nurses, they found that there was a strong relationship between all the transformational leadership factors and affective commitment. However, they did not find a hypothesized relationship between transactional leadership (also measured as contingent rewards) and commitment. Conceptually, it is difficult to explain why we found the relationship between transactional leadership and commitment (and not the relationship between transformational leadership and commitment) to be significant. As Podsakoff et al. (1990) and Bass and Avolio (1993) have argued, after all, transactional leadership behaviors are founded on an exchange process between the leader and subordinate. Perhaps, employees may see organizational commitment as instrumental to obtaining rewards and recognition from the leader, although the emotional attachment that is characteristic of organizational commitment is more likely to be the result of transformational leadership (with its emphasis on emotional identification). Clearly, this unexpected result in  $M_{U3}$  highlights the need to test these models in other settings, possibly employing a longitudinal design.

Popper (1968) argues that good theory must be amenable to decisive refutation and that the researcher must subject the theory to severe testing by searching for strong counter-examples (cf. Platt, 1964). In a structural modeling context, Heise (1969) and others (e.g., Bollen, 1989; Hayduk, 1987) suggest that good methodology entails the testing of alternative models and that the strength of structural modeling lies in its ability to support one model as being more consistent with a data set than other (rival) models.

In the current context, Jermier and Schriesheim (1978: 332) specifically noted that when the data employed in structural modeling “. . . are cross-sectional and based upon subordinate perceptions, cause-effect directionality among variables may be oversimplified if only one model is evaluated (due to such factors as method variance. . .).” Thus, although the current study employed data from both subordinates and their supervisors, we believe that our strategy of testing multiple structural models (against each other) was absolutely necessary for the sound use of this approach.

We should acknowledge that our rival models probably do not exhaust the universe of possible alternative models. However, we developed multiple rival models based upon what we thought was a reasonable review and synthesis of the literature. Following Cole (1974), who suggests that researchers are not obligated to rule out all alternatives (only a finite number which are theoretically plausible), we, therefore, believe that the current study can be viewed as a reasonably strong test of our theoretical model, particularly given the results in our second sample (which mirrored the first sample results, except for the differences discussed earlier).

### *Limitations*

Several limitations of this research deserve mention. First, although we used two samples, the first one came from one single organization in the southeastern U.S.; the second was from working students attending universities in the northeastern and southeastern U.S. It must be noted, however, that the respondents from the organization that represented sample one were employed not only in different divisions within the organization (such as health care, accounting, etc.), but also in different geographic regions of the country. The students in the second sample were employed by a wide variety of organizations. These facts may mitigate concerns about generalizability to some extent. Second, although the relationship with OCBs was not contaminated with same-source bias, the relationships among the leadership, justice, trust and attitude variables were probably inflated with same-source bias. In fact, the correlations between transformational and transactional leadership were high. However, this is completely consistent with the augmentation hypothesis mentioned earlier (Bass & Avolio, 1993) and with previous empirical research using different measures of transformational and transactional leadership (e.g., Avolio et al., 1996; Podsakoff et al., 1990; Yammarino & Dubinsky, 1994). Further, finding differential relationships between these leadership variables and the other study variables (and largely invariant results across the two different samples) reduces concern about our findings being merely methodological artifacts. Such concern may be further reduced by the results of the content analyses described in note 1, which supported the theoretical distinctiveness of the transactional and transformational leadership dimensions. Third, this study was cross-sectional, yet modeling implies causal relationships. However, we tested multiple plausible rival models, reducing concern somewhat about the inferences involved (cf. Heise, 1969; Jermier & Schriesheim, 1978). Of course, this does not alter the fact that a longitudinal study is needed to further explore the temporal dynamics of the relationships modeled here and also increase our ability to speak in causal terms. In this study, we hope that a foundation has been laid for further integration of the leadership, justice, trust, and organization citizenship literatures and motivation provided for undertaking the needed longitudinal research.

### *Implications and Directions for Future Research*

The strongest implication that may be drawn from this study is that transformational leadership influences citizenship behavior through perceptions of procedural justice and trust in the supervisor. Transformational leadership is related to trust, both directly and indirectly, through procedural justice. Thus, this study supports the notion that transformational leaders facilitate perceptions of procedural fairness and build trust in the leader. Through these variables they elicit performance beyond the call of duty (i.e., citizenship behaviors). Thus, if leaders want to increase citizenship behaviors among their employees, they should work at improving perceptions of fairness and trust. Leaders should also work at fostering organizational commitment through the fairness of the procedures they employ.

Future research should examine some consequences of OCBs, in addition to the various antecedents examined in research thus far. For instance, the impact of citizenship behavior on turnover, absenteeism, and more objective indicators of performance needs investigation. MacKenzie, Podsakoff, and Fetter (1993) examined the impact of OCBs on managers' subjective evaluations of subordinates and found that managers take extra-role behaviors into account in their evaluations. Research by Tansky (1993) showed that the nature of the dyadic relationship between leaders and followers had an impact on both subordinates' perceptions of fairness and citizenship behaviors. Podsakoff et al. (1990) suggest that followers in the leader's "in-group" are likely to be more trusting of the leader than are followers in the "out-group" because the leader gives them greater consideration, job latitude, etc. Graen and Uhl-Bien (1995) suggest that leader-member exchange is likely to involve both transactional leadership (initial stages of development) and transformational relationship (later stages). Further, when each supervisor-subordinate dyad is examined separately, error variance may indeed become valid variance because leaders are likely to develop different relationships with different group members. Thus, future research should include measures of transformational and transactional leadership and leader-member exchange, to assess their empirical interrelationships and the differential relationships they obtain with the justice, trust, and OCB variables. It would also be worthwhile to explore the role of mentoring in eliciting OCBs using a social exchange framework. Other variables of potential importance and warranting inclusion in future research are in-role behaviors, dispositional predictors of OCBs, further explorations of the role of positive and negative affectivity, and other measures of performance. As more and more successful organizations attempt to link everything to the "bottom-line," it might be useful to examine whether "performance beyond expectations" includes an increase in organizational output, profits, etc., in addition to extra-role behaviors, commitment, and satisfaction.

In the context of the current trend of layoffs in American business, there is another very practical implication of these results. A study by Brockner et al. (1994) provided support for an interaction between procedural and distributive justice in the context of layoffs. Specifically, their study demonstrated that when procedural justice was perceived to be low, individuals who were laid off or survived layoffs reacted more negatively when outcomes were also perceived to be negative. However, when procedural justice was high, outcome negativity was not related to individuals' reactions. Based on this line of research and the findings of our study, we propose that survivors are probably likely to re-evaluate their psychological contract with the organization in a negative light, based on their perceptions of procedural justice. These negative perceptions also serve to diminish trust between manager and employee. It is, therefore, possible that commitment to the organization and OCBs may decrease as a result of such distrust. Given that companies are increasingly relying on the exceptional efforts of fewer and fewer people ("doing more with less"), the individuals who run these companies may have to balance the need for reduced staffing (to increase

productivity) with preserving and communicating a concern for the human capital of the organization.

### Notes

1. In order to establish the theoretical distinctiveness of transactional and transformational leadership, a construct assessment panel was employed. Sixty-three working MBA students rated 58 MLQ items on content rating forms using the procedure presented in Schriesheim, Powers, Scandura, Gardiner, and Lankau (1993) (These subjects were independent from samples one and two mentioned above). The subjects were provided with definitions of transactional and transformational leadership and then instructed to rate the 58 items as being "transformational," "transactional" and "neither" using a 1-to-5 Likert type scale. The order of items was identical to the order in the MLQ (to preserve the item "set"). Item means and factor analytic (exploratory and confirmatory) results, which are not detailed here because of space constraints, clearly supported the content adequacy of the MLQ as an operationalization of the relatively broad theoretical constructs of transformational and transactional leadership. Both the exploratory and confirmatory factor analyses yielded a two-factor structure with the transactional and transformational items clearly loading on separate factors. Thus, construct redundancy or a lack of theoretical distinctiveness between these two constructs and the operationalizations which we used to measure them does not appear to be a particularly plausible explanation for the high correlations we obtained (and that are often found between transformational and transactional leadership). This suggests that statistical methods which control for the interrelationship between transformational and transactional leadership may be legitimately employed in research that uses these two dimensions (McNemar, 1969). Complete details on this procedure, the obtained item means and factor analytic results are available from the first author.
2. We should mention that the nonstructural correlations that were estimated in this model ( $M_U$ ) were as follows. In sample one, .80 for transformational and transactional leadership, .35 for distributive and procedural justice, and .17 for organizational commitment and job satisfaction (the within-sample standardized coefficients were .86, .30, and .18, respectively). In sample two, the unstandardized estimates were .53, .15, and .40, while the standardized coefficients were .81, .22, and .56, respectively (all are significant at  $p < .01$ ).
3. Model  $M_{U2}$  obtained identical estimates for the nonstructural correlations as those obtained for model  $M_U$ .
4. The nonstructural correlations estimated in model  $M_{U3}$  were the same as those of models  $M_U$  and  $M_{U2}$ , except that (a) the sample one correlation between organizational commitment and job satisfaction was estimated at .16 (.17 standardized), (b) the sample two transformational-transactional leadership correlation was .54 (.82 standardized), and (c) the sample two organizational commitment-job satisfaction correlation was .39 (.54 standardized).

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