

INVESTIGATING THE DEVELOPMENT OF A GLOBAL MEASURE OF ORGANIZATIONAL JUSTICE

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(ABSTRACT)

Organizational justice has been the source of a great deal of recent research attention and has consequently been linked to a number of organizationally-relevant constructs, including organizational citizenship behaviors (Moorman, 1991), employee theft (Greenberg, 1990a), organizational commitment (Tyler, 1991), turnover (Dailey & Kirk, 1992) and job performance (Gilliland, 1994). However, researchers' ability to integrate findings from these diverse contexts is currently limited by the absence of a standardized operationalization of the justice construct. To compound this problem, little research has investigated the psychometric properties of existing organizational justice measures. For example, no research has empirically examined the dimensionality or the suggested context-sensitivity of this construct (cf., Cropanzano & Greenberg, 1997). Therefore, the purposes of the current study were to evaluate the psychometric properties of justice and to attempt to develop a global measure that could be applied across contexts.

Study 1 involved three phases (1) screening a set of organizational justice items, (2) investigating the dimensionality of organizational justice and (3) examining justice for evidence of measurement stability. The set of items used in the current study was primarily collected from published research by Hauenstein, McGonigle and Flinder (1997). A set of 48 items with acceptable psychometric characteristics was identified. Phase 2 investigated the dimensionality of these items. Results indicated that none of the four a priori models of organizational justice dimensionality could adequately account for the dimensionality of these items. However, three alternative models were discovered. The first model includes the four dimensions suggested by Greenberg (1993b) in addition to a general organizational justice factor while the second model includes only justice and injustice factors in addition to the general organizational justice factor. Finally, the results of an exploratory factor analysis suggested three factors: Systemic Justice; Distributive Injustice; and Distributive Justice. Phase 3 then investigated the stability of this solution across subgroups while Study 2 compared exploratory factor structures across two work contexts. Results demonstrated some differences at both item- and construct-level in organizational justice across levels of job satisfaction and work experience. Further, some factorial instability across work contexts (e.g., selection, performance appraisal) was also observed. As a result, it was concluded that developing a global measure of organizational

justice is difficult given the demonstrated context-sensitivity of the construct. Instead, a series of guidelines for developing future measures of organizational justice is proposed.

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Chapter 1: Introduction

A recent topic of renewed interest in research on organizational behavior is organizational justice, the study of decision and allocation fairness in organizations. As Sheppard and Lewicki (1987) point out, justice is a concern in any situation where parties can be differentially affected by an outcome. However, while justice is a fundamental human concern (Lerner, 1965; 1982), it is only recently that social scientists have begun to systematically study individuals' perceptions of justice in an organizational context. Organizational justice research originated out of Stouffer, Suchman, DeVinney, Star and Williams' (1949) serendipitous finding that promotion satisfaction among Army officers depended upon the promotion rates of their peers rather than on the promotion rate itself. That is, officers' promotion satisfaction was determined through a relative comparison of their own and their peers' promotion rates. From this research, as well as research on the related constructs of relative deprivation and social comparison, Adams (1965) developed equity theory, which serves as one foundation of distributive justice. More recently, researchers noted that distributive justice, or one's perception of outcome fairness was only part of the picture; decision-making procedures can also be perceived as just or unjust independent of the outcome of those decisions (Tyler & Caine, 1981). As a result, researchers began to investigate the role of procedural justice (i.e., Thibaut & Walker, 1975) as distinct from distributive justice.

Forms of Justice

Distributive Justice

Early research on organizational justice focused on outcome fairness/distributive justice. Homans (1961) and Adams (1965), who first examined distributive justice in an organizational context, suggested a theoretical basis for judging outcome fairness. Essentially, both researchers theorize that individuals compare the level of outcome (e.g., salary, benefits) received relative to perceived inputs (e.g., ability, hard work) to the perceived input-outcome ratio of a comparison other through the following quasi-mathematical process:

$$I_s/O_s = I_c/O_c$$

For example, individuals hold views of their own inputs (I_s) to an organization (i.e., previous experience, knowledge, training, education, ability, etc.) and the outcomes (O_s) they expect to receive from the organization (i.e., salary, benefits, experience, etc.). Similarly, individuals also hold perceptions of others' inputs (I_c) and outcomes (O_c). According to Adams (1965), the relationship between an individual's input-outcome ratio (I_s/O_s) and a comparison other's ratio (I_c/O_c) is the basis for judging outcome equity. When the ratio of one's inputs to outcomes is equivalent to that of a comparison other, regardless of the actual level of input or outcome, the individual experiences outcome equity. Conversely, when an individual's input-to-outcome ratio is sufficiently unequal to the comparison other's, the individual is predicted to experience distributive inequity. Thus, perceptions of distributive justice are based on relative rather than absolute outcomes, a finding that was suggested by Stouffer et al's (1949) findings.

Homans' (1961) and Adams' (1965) theories of distributive justice are based on the equity rule, which is one of several allocation rules. In an equitable allocation situation, individuals receive rewards based on their relative inputs to the situation (i.e., following the equity rule). Thus, when individuals are rewarded according to the equity rule, they should experience distributive justice. However, if the same individuals are rewarded following the same reward schedule but under a different allocation rule, distributive justice would not be experienced. For example, under the equality rule, all individuals receive the same outcome regardless of their relative individual inputs. Similarly, under the need rule individuals with the greatest need receive the most rewards irrespective of their individual inputs. Thus, under a equality-based or need-based distribution rule, an equitable outcome would be perceived as distributively unfair. While perceptions of distributive justice can be based on any allocation rule, organizational justice researchers have focused on the equity rule, as it is the most frequently invoked distribution rule in organizational settings.

Procedural Justice

In the 1970s, researchers began to focus attention on the fairness of the process by which decisions are made. The first discussion of the term "procedural justice" was by Thibaut and Walker (1975), who examined reactions to the procedures used in the resolution of legal disputes.

By varying the amount of control individuals had over the procedures available to settle simulated disputes and the extent to which they could impact the actual outcomes Thibaut and Walker (1975) showed that not only outcome equity, but also procedural control impacted individuals' perceptions of fairness. Further research extended this finding to organizational contexts (cf., Greenberg & Folger, 1983).

While this research suggested that perceptions of justice were at least in part dependent upon procedural control, research by Leventhal (1980; Leventhal, Karuza & Fry, 1980) identified specific structural characteristics of the decision making process that influence perceptions of procedural justice. Specifically, Leventhal (1980) identified six criteria of procedural justice:

1. consistent application of procedures
2. freedom from bias
3. accuracy of information
4. decision correctability
5. representativeness of content
6. ethicality

Later researchers have identified other rules of procedural justice in specific contexts. For example, in a series of critical incidents interviews, Greenberg (1986) identified 5 determinants of procedural justice (i.e., soliciting and using input prior to making an evaluation, enabling two-way communication during the interview, providing the ability to challenge/rebut one's evaluation, ensuring rater familiarity with ratee's work and ensuring consistent application of standards) and two determinants of distributive justice (i.e., ensuring the receipt of rating based on performance achieved and recommending outcome(s) based on rating) in a performance appraisal context.

Later, in questioning the applicability of Thibaut and Walker's (1975) and Leventhal's (1980) models of procedural justice to organizational research, Sheppard and Lewicki (1987) identified sixteen principles of procedural justice in a managerial decision making context. Three of the principles (i.e., consistency of process, reasonableness of process, use of the golden rule) apply to broad managerial activities, six (i.e., bias suppression, representativeness, resource

utilization, decision correctability, information about implementation, decision timeliness) apply to making and implementing decisions and the remaining seven (i.e., accountability, two-way communication, role description, meaningful assignment, equity, ethicality, structural integrity) apply to specific managerial activities. More recently, Gilliland (1993) identified similar principles of procedural and distributive justice in a personnel selection context. However, as can be seen, most of the principles each of these researchers identified are subsumed by Thibaut and Walker's (1975) notion of process control, the six criteria identified by Leventhal (1980) and/or Adams' (1965) principle of equity (Cropanzano & Greenberg, 1997).

Interactional Justice

More recently, Bies and Moag (1986) argued that organizational justice perceptions are often influenced by the manner in which procedures are enacted, rather than on the specific structural characteristics of the procedures or the allocation of an outcome. For example, they argue that an employer could meet the procedural rules outlined by Leventhal (1980) and could make the resulting allocation decision equitably, yet the recipient might still perceive the interpersonal interaction as unfair if he or she is asked invasive, improper questions or is treated rudely. Thus, Bies and Moag (1986) argue that perceptions of interactional justice occur independently of one's perceptions of procedural or distributive justice. Although Bies and Moag (1986) suggest that interactional justice should be considered a third category of organizational justice, Greenberg (1993b) argues that both procedural and distributive justice have interpersonal and structural components. Thus, interactional justice as defined by Bies and Moag (1986) is subsumed by informational and interpersonal justice, the social forms of procedural and distributive justice, respectively, in Greenberg's (1993b) taxonomy.

Other Forms of Justice

Noting that both procedural and distributive justice can have structural and interpersonal aspects, Greenberg (1993b) proposed a four dimensional taxonomy of organizational justice (See Table 1). He distinguished perceptions of justice along two dimensions, category of justice and focal determinant. The two categories of justice are the familiar procedural and distributive. Justice theories can also be classified as structural, those that deal with formal rules of justice in a

specific context, or social, those that concern interpersonal experiences. Therefore, as opposed to Bies and Moag (1986) who delineate only the interpersonal aspects of procedural justice, Greenberg (1993b) describes the interpersonal aspects of both procedural and distributive justice.

As a result, four classes of justice exist in Greenberg's (1993b) theoretical taxonomy. Systemic justice involves the structural components of procedural justice. Hence, systemic justice is most similar to the original conceptualization of procedural justice (cf., Thibaut & Walker, 1975; Leventhal, 1980) which delineates the principles and rules of justice necessary in various contexts. Similarly, configural justice refers to the structural components of distributive justice. Thus, configural justice describes the rules invoked when making an allocation decision. While, systemic and configural justice are the historical approaches to the study organizational justice, informational and interpersonal justice have received much less research attention. Informational justice refers to the social component of procedural justice, which is most often manifest as information about the process by which a decision was made. It is most similar to Bies and Moag's (1986) notion of interactional justice. Finally, interpersonal justice refers to the social determinants of distributive justice, which is typically experienced as the expression of concern for the effects that a decision may have on an individual. Examples of interpersonal justice behaviors include politeness (Tyler, 1988), altruism (Mikula, Petrick & Tanzer, 1990) and remorse (Greenberg, 1991). Interpersonal justice is distinguishable from informational justice in that the latter provides information about the decision process while the former expresses a reaction to the decision.

The Role of Measurement in Theory Development

A persistent problem in social psychological research is the manner in which research progresses. In the context of organizational behavior, Schwab (1980) distinguished between two primary types of research, substantive and construct validation research. Substantive research examines the relationship between constructs (i.e., the relationship between latent variables), while construct validation research involves the relationship between a construct and the instruments designed to measure it (i.e., the relationship between manifest indicators and latent variables). Although substantive research can lead to important advances in cumulative scientific

knowledge, Schwab (1980) notes that knowledge in any content area (i.e., substantive research) is limited to the extent that construct validation research is bypassed. Unfortunately, the majority of research on organizational justice, as well as most other areas of organizational behavior, has emphasized substantive research over construct validation research. As a result, many of the problems outlined above have not been addressed.

Other researchers have echoed Schwab's (1980) concerns about psychological research. For example, Cohen (1994), in discussing the role of null hypothesis significance testing in the accumulation of scientific knowledge, suggests that

...psychologists have to start respecting the units they work with, or develop measurement units they can respect enough so that researchers in a given field or subfield can agree to use them. In this way, there can be hope that researchers' knowledge can be cumulative (p. 1001).

Cohen (1994) also argues that the development of psychological theory, at least in the context of null hypothesis significance testing, is dependent upon the development of meaningful, valid and reliable measures of psychological phenomena. Without hypotheses that are operationalized using psychometrically sound measures, Cohen (1994) argues, significance tests are of dubious value because unsound measures can obscure both the direction and the magnitude of the relationship between variables.

In a similar vein, Lamon (1997) reviews the impact of measurement precision on research into gender differences in mathematics performance, concluding that our knowledge of the relationship between affect and cognition is largely due to the development of precise measures of both constructs. Further, Lamon (1997) suggests that other methodological artifacts that receive a great deal of research attention (e.g., the external validity of laboratory vs. field studies) are of uncertain impact when studies are conducted using poorly developed measures. Finally, Tryon (1996) describes the role that improvements in measurement precision played in the development of several theories in the natural sciences. For example, the development of the telescope and the

prism resolved theoretical debates surrounding the composition of the Milky Way and the spectrum of light, respectively.

Each of these examples highlight the importance of improved measurement in the development of theory and the accumulation of scientific knowledge. As Tryon (1996) concludes, the development of new measures can often improve researchers' understanding of the relationship between constructs of interest. Without meaningful measures of relevant constructs, the development of psychological theory is hindered by the presence of "significant" relationships that are simply artifacts of a poorly conceived measure coupled with the absence of real relationships that are obscured by low fidelity measures that produce wide confidence intervals.

As can be seen in the literature discussed above, organizational justice research has focused primarily on substantive topics to the exclusion of construct validation research. Further, organizational justice has been studied in contexts as broad as personnel selection (Gilliland, 1993, 1994; Smither, Reilly, Milsap, Perlman & Stoffey, 1993), drug testing (Konovsky & Cropanzano, 1991), conflict resolution (Karambayya & Brett, 1989), leadership perceptions (Tyler & Caine, 1981), layoffs (Greenberg, 1989; 1990a), performance appraisal (Greenberg, 1986) and promotion (Greenberg, 1988). Organizational justice has also been linked to a host of organizationally-relevant variables, such as organizational citizenship behavior (Moorman, 1991), employee theft (Greenberg, 1990a), organizational commitment (Tyler, 1991), turnover (Dailey & Kirk, 1992) and job performance (Gilliland, 1994). Thus, organizational justice appears to be both a theoretically meaningful and practical construct.

However, as Sweeney and McFarlin (1993) note, much of the research on organizational justice should be classified as "demonstrations" rather than as theory-building. For example, only recently has research examined the interactive effects of procedural and distributive justice (e.g., Brockner & Wiesenfeld, 1996; Van den Bos et al, 1997; Scarlicki & Folger, 1997) rather than examining them independently. Similarly, little or no research has attempted to generalize fairness perceptions across contexts. In fact, the majority of research on organizational justice is focused on demonstrating the applicability of justice constructs in an increasingly wide variety of contexts

rather than integrating the growing number of “demonstrations” of the robustness of organizational justice into unified models of organizational justice. As a result, our current understanding of organizational justice as a global construct is extremely limited.

Therefore, despite the broad-reaching research pursuits of organizational justice researchers, efforts at integrating the rapidly expanding organizational justice literature have been rare. Exceptions to this trend include the interactive models of procedural and distributive justice (Brockner & Wiesenfeld, 1996; van den Bos, Vermunt & Wilke, 1997), as well as more general approaches to integrating the distinct origins of each form of justice (cf., Folger, 1986; Greenberg, 1987b; Lind & Tyler, 1988; Greenberg, 1993b). However, it is clear that many methodological and psychometric issues in organizational justice research are currently unresolved and/or unresearched.

Measurement Issues in Organizational Justice Research

While Greenberg’s (1993b) taxonomy is the most comprehensive to date, little empirical evidence supports any model of the dimensionality of organizational justice. Additionally, no research has addressed the stability of these models across samples or research contexts. Therefore, prior to pursuing additional research into the relationship between organizational justice and other organizationally-relevant variables (e.g., turnover, productivity), a more refined understanding of these fundamental issues must be achieved.

Dimensionality of Organizational Justice

Historically, four models of the dimensionality of organizational justice have been implicitly advocated by organizational justice researchers. Early research by Adams (1965) and Homans (1961) suggested that organizational justice was unidimensional, defined simply by one’s perceptions of outcomes. Alternatively, research by Greenberg (1986) supported a 2-factor (procedural and distributive justice) model that has arguably become the dominant model of organizational justice (e.g., Folger & Konovsky, 1989; Sweeney & McFarlin, 1993; Tyler, 1994). Conversely, Bies and Moag (1986) suggested a 3-factor model of organizational justice that included an interpersonal dimension (i.e., interactional justice) in addition to procedural and

distributive justice while Greenberg (1993b) theorized interpersonal dimensions of both procedural and distributive justice in a 4-dimensional taxonomy.

While most current organizational justice research rejects the 1-factor model, no research to date has directly compared any of these models. Therefore, one purpose of the current study is to evaluate and compare each of the existing models of organizational justice. These analyses will be conducted using confirmatory factor analysis to test the relative fit of each model. The most appropriate model of organizational justice will then serve as the basis for developing the global scale.

Measurement Stability of Organizational Justice

Further, no research has examined the generalizability or stability of any model of organizational justice across samples or research contexts. For example, given that organizational justice is considered to be a context-sensitive construct (Greenberg, 1990b; 1993a; Cropanzano & Greenberg, 1997), some instability in its dimensionality across contexts (e.g., personnel selection vs. grievance resolution) and/or subgroups that vary in levels of theoretically-meaningful variables (e.g., satisfaction, amount of work experience) may be expected. However, the development of a global measure of organizational justice is only fully tenable to the extent that the dimensionality of the construct is generalizable.

The approach to developing a global measure of organizational justice employed in this study is to create item stems consisting of an introductory phrase that provides contextual information followed by a standardized “item stem” addressing some aspect of justice. As a result, the standardization that has been absent from previous measures of organizational justice may be maintained while accounting for some amount of context sensitivity. Greenberg (1993b) refers to a measure of this type as the “customized application of a standardized measure” (p. 255).

However, despite the flexibility of measures of this type, some amount of measurement stability is still desirable from a psychometric standpoint. For example, as discussed by Lindell, Clause, Brandt and Landis (1998) in the context of job analysis ratings, within-group rating

variations are traditionally attributed to random error. However, other research suggests that some of the remaining variability in these ratings can be attributed to systematic causes, such as race and gender (cf., Schmitt & Cohen, 1989; Veres, Green & Boyles, 1991) or amount of work experience (cf., Borman, Dorsey & Ackerman, 1992). To the extent that these moderators of rating agreement are not accounted for, meaningful and reliable subgroup differences in perceptions of job responsibilities are overlooked (Lindell et al, 1998).

Similar findings are discussed by Ceci (1996) in relation to spatial ability research conducted by Lorenz (1987). Specifically, Lorenz (1987) conducted a principal components analysis of 19 tests of spatial ability and also asked participants to provide directions to a stranger. While her initial results suggested four factors (spatial manipulation, geographic direction, landmark memory and route memory), Lorenz (1987) also examined the factor structure of two subgroups (those who gave written directions versus maps). These additional analyses indicated that participants in the “written directions” group were characterized by a completely different 3-factor structure (ecological measures, traditional measures, ability measures). Based on these results, Ceci (1996) concluded that

...by lumping the two groups together, one arrives at a potentially misleading understanding of the nature of spatial ability and its relationship to other abilities. To the extent that subject are heterogeneous with respect to their approach to problems, the resultant factor structure may not be an adequate characterization of anyone’s abilities (p.111).

While the above research does not directly address the importance of measurement stability in measure development, it does highlight the impact of aggregating across subgroups with reliable and unique perspectives. In a similar manner, current justice research tends to implicitly attribute rating variability to random error. However, if some of the remaining variability in perceptions of justice can be explained by systematic causes (e.g., race, gender, work experience, job satisfaction, etc.), aggregating responses across these variables obscures important distinctions in the psychological processes underlying judgements of organizational justice and provides a “one size fits none” factor structure.

Thus, generalizability of factor structures would support the existence of similar psychological process underlying judgments of justice in different contexts or subgroups, while factor instability might suggest different processes underlying justice judgments in different contexts and subgroups. Without direct evidence of an interpretable, generalizable factor structure, developing a reliable global measure of organizational justice may be difficult.

The relationship between justice and satisfaction. Perhaps one of the greatest areas of conceptual confusion in organizational behavior research is the relationship between organizational justice and job satisfaction. In fact, many researchers treat the two constructs as interchangeable (cf., Brockner & Wiesenfeld, 1996). However, as Cropanzano and Greenberg (1997) point out, fairness and satisfaction are not equivalent and should not be interchanged. In fact, even the earliest research involving equity theory (Stouffer et al, 1949) explicitly distinguished between outcome satisfaction and outcome fairness. Outcome satisfaction is derived from the absolute value of a given outcome, while outcome fairness depends upon a much more complex assessment of the ratio between one's inputs and outcomes relative to a comparison other's input-outcome ratio (Homans, 1961; Adams, 1965). Thus, satisfaction level is only a portion of the process by which judgments of organizational justice are made. Given the relationship between satisfaction and justice suggested above, the factor structure of justice may well be different at different levels of satisfaction. In this way, job satisfaction is a useful variable to examine the stability of organizational justice dimensionality. However, because of the fundamental relationship between these two constructs, evidence of a moderate relationship between organizational justice and satisfaction at the construct level would also suggest discriminant validity for the new measure.

The relationship between justice and satisfaction. An additional variable that is ideal for examining the stability of organizational justice is work experience. Because perceptions of justice are assumed to be context-dependent (cf., Cropanzano & Greenberg, 1997), they are also likely to be influenced by an individual's unique set of work experiences. As a result, it stands to reason that individuals with more (and more heterogeneous) work experience may have more developed perceptions of justice than individuals with less experience (and more homogeneous

work experiences). Therefore, work experience is also an ideal to examine the stability of organizational justice dimensionality.

Relationship Between Forms of Justice

While the majority of researchers implicitly incorporate multidimensional models of organizational justice into their research (cf., Leventhal, 1980; Greenberg; 1987; 1993c), each form of justice is usually modeled as orthogonal to the other(s) (cf., Alexander & Ruderman, 1987; Sweeney & McFarlin, 1993; Tyler, 1994; Tyler & Caine, 1981). However, several independent studies support the presence of a relationship between the various forms of organizational justice. First, a meta-analysis by Hauenstein, McGonigle and Flinder (1997) examined the relationship between perceptions of procedural and distributive justice. An extensive search of both published and unpublished research reporting a relationship between procedural and distributive justice revealed a mean corrected correlation between procedural and distributive justice of 0.64. Interestingly though, less than seven percent of the variance in the distribution of correlations was attributable to statistical artifacts (i.e., unreliability).

Although these results suggest that the relationship between the two constructs is quite robust, it is also interesting to note that few viable moderators were uncovered to explain the substantial remaining variance. Because organizational justice is considered a context-sensitive construct (Cropanzano & Greenberg, 1997; Greenberg, 1993a) such results may not be surprising. However, two particularly informative findings emerged from the Hauenstein et al (1997) study. First, subgroup analyses supported the context-sensitivity of the procedural-distributive justice relationship. Specifically, the relationship was weaker in studies of reward allocation than in studies of dispute resolution. However, given that the 95% confidence interval around the procedural-distributive justice relationship never included zero in any context, this relationship is not likely to be context-dependent. While these results do not address the context sensitivity of the constructs themselves, they do provide some support to the context-sensitivity of organizational justice as suggested by Greenberg (1990b; 1993a, Cropanzano & Greenberg, 1997). Additionally, the Hauenstein et al (1997) meta-analysis indicates that construct operationalization moderated the relationship between procedural and distributive justice. Thus,

as Cohen (1994) might predict, the relationship between procedural and distributive justice is dependent upon how each construct is operationalized. Of further interest is that fact that of the 63 studies included in the Hauenstein et al (1997) study, 48 (76%) either devised their own “ad hoc” (Greenberg, 1990b) measures or provided no information about how organizational justice was operationalized. As a result, the integration of results across multiple studies is virtually impossible.

Similarly, several researchers have examined the interactive effects of procedural and distributive justice. For example, Brockner and Wiesenfeld (1996) found that procedural justice has a stronger effect when distributive justice is low and distributive justice has a stronger effect when procedural justice is low. That is, the effects of procedural (distributive) justice on overall perceptions of justice are moderated by the level of distributive (procedural) justice. Further, Folger’s (1986a, 1986b) Referent Cognitions Theory (RCT) suggests that maximally negative reactions to a decision occur when both procedural and distributive justice are low because individuals can easily construct alternative, positive outcomes. As perceptions of procedural and/or distributive justice become more positive, alternative outcomes are more difficult to conceive. Further, Van den Bos, Vermunt and Wilke (1997), demonstrated a primacy effect in organizational justice in that fairness perceptions are based more strongly on the information presented first regardless of whether that information was procedural or distributive. Several other authors have discussed the interactive relationships between procedural and distributive justice as well (e.g., Koper & Vermunt, 1988; Sweeney & McFarlin, 1993).

At the same time, a great deal of research suggests that both procedures and outcomes can, and do, have independent effects on perceptions of organizational justice. For example, Greenberg (1986) was one of the earliest researchers to empirically demonstrate separate procedural and distributive justice dimensions. More importantly, the unique effects of procedural and distributive justice have been repeatedly demonstrated by many other researchers (cf., Tyler & Caine, 1981; Alexander & Ruderman, 1987; Sheppard & Lewicki, 1987; Moorman, 1991).

Based on the above discussion, several conclusions about the effects of procedural and distributive justice can be made. First, it is clear that procedural and distributive information can have important independent effects on perceptions of organizational justice (cf., Tyler & Caine, 1981; Greenberg, 1986; Alexander & Ruderman, 1987; Sheppard & Lewicki, 1987). However, more recent research supports the view that perceptions of procedural and distributive justice are at least moderately related (Hauenstein et al, 1997) and may also interact (Brockner & Wiesenfeld, 1996; Folger, 1986; Van den Bos et al, 1997). Third, both forms of justice may consist of structural and interpersonal components (Greenberg, 1993b).

As a result, any standardized measure of organizational justice should not only be based on an empirically-supported model of dimensionality, but should also incorporate the demonstrated relationship between these constructs. Therefore, a desirable property of the proposed measure will be that it incorporate non-orthogonal relationships between justice constructs. A measure that contains either extremely correlated or extremely uncorrelated factors would not represent the relatively strong relationship among justice factors suggested by Hauenstein et al (1997).

Existing Measures of Organizational Justice

The lack of measurement consistency in organizational justice research has not only been discussed by Hauenstein et al (1997). Both Greenberg (1990b, 1993b, 1996) and Gilliland and Honig (1994), noting organizational justice researchers' predilection toward using "ad hoc" measures of justice, have also suggested the need for a standardized measure of organizational justice so that cross-study comparisons can more easily be made. More generally, Schwab (1980) and others (e.g., Cohen, 1995; Lamon, 1997; Tryon, 1996) have noted that adequate and standardized measures are necessary for theoretical progress to take place. Thus, the need for a standardized measure of organizational justice has long been recognized.

Perhaps one reason for the lack of measurement standardization in organizational justice research is the belief that justice is a context-dependent construct (Greenberg, 1990b; 1993a; Cropanzano & Greenberg, 1997). Therefore, ad hoc measures may be given deference because they allow questions to be tailored to the varied situations in which justice has been examined (Greenberg, 1990b). However, Sheppard and Lewicki (1987) argue that not all justice rules are context sensitive. Of the 16 principles of managerial fairness they discovered, only seven were categorized as contextually-dependent. Similarly, Cropanzano and Greenberg (1997) suggest that the relative importance of different facets of organizational justice may be context-specific, rather than the specific principles themselves. The Hauenstein et al (1997) meta-analysis begins to distinguish between the context-specificity and the context-dependence of organizational justice. For example, while Hauenstein et al (1997) demonstrated that, at a broad level (i.e., conflict resolution vs. resource allocation) the relationship between procedural and distributive justice is moderated by context, the consistent non-zero correlation between procedural and distributive justice suggests that the determinants of organizational justice may be at least moderately stable across contexts.

Additionally, several global models of organizational justice have been proposed (Greenberg, 1987b; Greenberg, 1993b) and many authors have delineated general dimensions of organizational justice (cf., Leventhal, 1980; Bies & Moag, 1986; Greenberg, 1986; Sheppard & Lewicki, 1987). Thus, it may be possible to develop a global measure of organizational justice

that can be adapted to the diverse contexts in which organizational justice research is carried out, as suggested by Greenberg (1993a).

Currently, several measures of organizational justice do exist, but each is domain-specific. For example, Greenberg (1986) developed a critical incidents set concerning the perceived justice of a performance appraisal system with separate distributive and procedural factors. Building off Greenberg's (1986) findings, Folger and Konovsky (1989) developed a 26-item standardized measure of organizational justice in a performance appraisal context. Separately, Gilliland and Honig (1994) developed a 40-item measure of organizational justice; however, it is limited to personnel selection contexts. Each of these measures addresses most of the procedural justice rules outlined by Leventhal (1980; Leventhal, Karuza & Fry, 1980). However, none adequately addresses all four of the organizational justice dimensions suggested by Greenberg (1993b). Further, while each of these measures may provide insight into individuals' perceptions of organizational justice within a specific domain (e.g., performance appraisal, selection) none has been consistently adopted in the literature. Moreover, none of the identified measures can allow comparisons of research from different contexts, and many relevant domains (e.g., reactions to personnel policies) can not currently be examined with a standardized measure. Without a standardized global measure, organizational justice may continue to exist primarily as a series of "demonstrations" rather than as a meaningfully developed theory. Therefore, the purposes of this study are to (1) address fundamental questions about the dimensionality of organizational justice (and its generalizability) and (2) to investigate the development of a standardized measure of organizational justice that can be adapted for use across a wide variety of research contexts.

Overview of the Study

Because any useful organizational justice measure must concurrently be context-sensitive (Greenberg, 1993a) and standardized, the overriding goal of this study is to investigate the development of a set of generalizable "item stems" that can be adapted to multiple contexts. A flexible measure incorporating item stems provides the standardization that has been lacking in previous organizational justice research, while at the same time allowing the measure to remain context-sensitive.

Specifically, Study I examines the dimensionality and measurement stability/generalizability of organizational justice. To this end, a preliminary global measure of organizational justice will first be developed by selecting a set of existing items from the organizational justice literature and screening them for basic psychometric quality. Next, the resulting set of items will be examined for dimensionality and then will be used to evaluate the measurement equivalence/stability of that dimensionality across subgroups (i.e., levels of satisfaction and work experience) and work contexts (i.e., selection, performance appraisal). To the extent that an interpretable, stable factor structure is uncovered, a final set of global “item stems” will be selected using Item Response Theory (IRT). Construct validity evidence (i.e., multi-trait multi-method matrix) will then be provided for the resulting measure.

Chapter 2: Study I

Preliminary Item Selection, Dimensionality and Measurement Stability Across Subgroups

Participants

To examine the proposed items under the most heterogeneous conditions possible, data were collected from two independent samples. The first sample consisted of 142 undergraduate students enrolled at Virginia Tech. Participants in this sample ranged widely in age, gender and work experience (see Table 2). As a requirement for participation in Study I, all participants must have held a job for at least 3 of the previous 12 months. Participants were instructed to respond to each item in reference to their previous work experience, but were given no further instructions about how to respond to the items. Each participant in the student sample received 1 extra credit point for participation. Participants were recruited solely from the Psychology department's subject pool and the data were collected in large (e.g., 25-50 people) groups. Participation was strictly voluntary.

Participants in the second sample were recruited from full time employees of the American Institutes for Research (AIR), a not-for-profit research organization. AIR employs professional personnel that vary widely in age, education, work experience and work responsibilities, which is represented by the sample demographics. The 109 participants from this sample included 66 males and 42 females. Table 2 provides complete demographic information for both samples. Initially, approximately 275 participants in the AIR subject pool were contacted via email about the purpose and requirements of the study. Following initial contact, all identified participants received the study materials through inter-office mail. Participants were instructed to complete the survey at their convenience and to return it via inter-office mail within one week, but were again provided no additional instructions for responding to the items. Overall response for this sample was 109 (an approximately 40% response rate). As with the student sample described above, participation was completely voluntary.

All cases in both samples were combined to examine the data for the presence of outliers. Two of the 249 cases were removed because the standard deviation of their summed scale scores

exceeded |3.00|. Therefore, all analyses were conducted using the remaining 247 cases. Missing data for the remaining participants were imputed using PRELIS 2.12A (Joreskog & Sorbom, 1993a) after the initial item selection was completed.

Procedure

Included Measures

In order to limit the number of parameters estimated in later stages of measure development, a sample of 78 initial items was screened for basic psychometric quality. These initial items were selected from two primary sources. First, existing studies in the organizational justice literature were searched for non-redundant items. Specifically, the author reviewed all items collected by Hauenstein et al (1997) and removed items that were significantly redundant in content. For example, the following two items were judged to be redundant: “I was treated with warmth, sincerity and thoughtfulness during the selection process;” and “I was treated with warmth, sincerity, and respect during the editorial process.” Because few standardized measures of organizational justice currently exist, researchers typically include a list of items in their manuscripts. The majority of items selected through this method were collected by Hauenstein et al (1997). In general, the approximately 420 items selected from Hauenstein et al (1997) provide an adequate starting point for item selection. Specifically, the item list consists of 159 items initially linked to systemic justice, 127 initially linked to configural justice, 101 initially linked informational justice and 33 initially linked to interpersonal justice.

Where an insufficient number of items addressing a particular dimension of organizational justice were available (e.g., interpersonal justice) or where the available items appeared to insufficiently tap one dimension, additional items were written. These items were written to be consistent with the organizational justice principles outlined by Adams (1965), Gilliland (1993), Greenberg (1986, 1993b), Leventhal (1980), Leventhal, Karuza and Fry (1980), Sheppard and Lewicki (1987) and Thibaut and Walker (1975). A list of all items included in Study I is presented in both Table 3 and Appendix A.

Participants also completed the Quinn and Staines (1977) Facet-Free Measure of Satisfaction, which is designed to measure overall job satisfaction without regard to specific components of the job (e.g., pay, opportunity, etc.). For the purposes of the current investigation, two versions of the 5-item scale were created to measure satisfaction with both procedures and outcomes. See Table 4 for a list of items included from the Quinn and Staines (1977) measure. Coefficient alpha for the 10-item scale in the current study is 0.95.

Finally, participants in both samples also completed a series of demographic questions. Specifically, all participants indicated their gender, age, total amount of work experience and current employment status (i.e., employed or unemployed).

Analytic Approach

Preliminary item selection. As suggested by DeVellis (1991) and Ghiselli, Campbell and Zedeck (1981), the initial 78 items were evaluated against the following four psychometric criteria:

- 1 . Number of respondents. Items were initially screened out if fewer than 90% (224) of respondents endorsed the item.
- 2 . Minimum and maximum item rating. Next, items were removed from the scale if participants did not employ the entire range of rating points. Specifically, if the minimum rating was not 1 or if the maximum rating was not 5, an item was removed.
3. Item standard deviation. Next, items with low standard deviations (less than |1.00|) were removed.
4. Item mean. Fifth, items with aberrantly high (greater than 3.75) or low (less than 1.25) means were removed next.

After reducing the set of items to those with acceptable psychometric properties, the remaining items were used to examine the dimensionality and measurement stability of organizational justice. Specifically, the four previously discussed theoretical models of organizational justice dimensionality were examined using confirmatory factor analysis to assess

the overall dimensionality of organizational justice. Finally, the stability of this factor structure across subgroups and contexts was evaluated.

Organizational justice dimensionality. Prior to examining the dimensionality of the set of screened items, three Ph.D. research psychologists familiar with organizational justice research linked each item to a theoretical dimension of organizational justice. Specifically, raters were provided with definitions for each construct (i.e., procedural/systemic, distributive/ configural, interpersonal and informational justice) and were instructed to link each item to the one construct most descriptive of it (See Appendix B for specific task instructions). Each rater completed the item-to-construct linkages independently and then all three raters convened as a group to determine the final linkage of each item. Raters initially disagreed on the linkages of four items. However, group consensus on the final linkage of each item was reached through discussion. Table 5 lists the retained items that were linked to each dimension.

These ratings served as the conceptual basis for examining Greenberg's (1993b) 4-dimensional model. As suggested by Greenberg's (1987) taxonomy of organizational justice theories, subsequent sub-models were created by combining informational and interpersonal justice to examine the three-dimensional model suggested by Bies and Moag (1986), by combining procedural and informational justice and distributive and interpersonal justice to test Greenberg's (1986) 2-dimensional model and by combining all items to examine a unidimensional model of organizational justice. Figures 1–4 contain conceptual diagrams of the proposed models.

Organizational justice measurement stability. Next, to examine the stability organizational justice dimensionality, two sets of theoretically relevant subgroups were created. To create the first set of subgroups, participants were categorized as high or low in global job satisfaction. Job satisfaction was selected for these analyses because of its fundamental relationship to organizational justice (cf., Cropanzano & Greenberg, 1993). While no specific hypotheses are proposed, individuals low in satisfaction may be predisposed to perceived justice more unidimensionally (i.e., unfair) than individuals who are high in satisfaction. Alternatively,

individuals high in satisfaction may be predisposed to perceived justice unidimensionally as well (i.e., fair) than individuals who are low in satisfaction.

As described above, participants completed the Quinn and Staines (1977) Facet-Free Measure of Satisfaction, which is designed to assess overall job satisfaction without regard to specific components of the job (e.g., pay, opportunity, etc.). To estimate measurement stability across levels of job satisfaction, participants were divided into groups based on a median split of total mean scale scores. That is, subgroups were created that contained those participants high (vs. low) in overall job satisfaction. Specifically, 118 participants across the two samples were classified as high in satisfaction because their mean scale scores exceeded the scale score median (3.00) and the remaining 129 were categorized as low in satisfaction.

Next, subgroups were created to examine the impact of full-time work experience on individuals' conceptions of organizational justice. Therefore, responses from the 108 participants included in the organizational sample were compared to the responses of the 140 participants in the student sample. While it is possible that individual members of the student sample have significant amounts of full time work experience, the student sample, on average, tended to have less work experience than the organizational sample (see Table 2). Therefore, this division was used as a proxy for work experience that is assumed to represent a reasonable point at which qualitative differences in work experience may exist. Analyses comparing sample membership and amounts of work experience support this assumption. Specifically, Cramer's V was 0.78 while the Spearman rank-order correlation was 0.69, indicating a strong relationship between total work experience and sample membership.

It should be noted that while a direct measure of work experience was collected as part of Study I, several concerns with the item's quality suggested the use of sample membership as a proxy for work experience in place of the existing direct measure. First, the structure of the response options (see Appendix A, Item 91) was better suited to respondents with smaller amounts of work experience. Specifically, respondents with more than 5 years of work experience were constrained to the maximum rating on that item, regardless of total years of work

experience. As a result, the distribution of data for the organizational sample was extremely negatively skewed. Additionally, because of the structure of the response items, comparably-sized subgroups were impossible to create. Creating subgroups of participants with more than five years of experience versus five or fewer years would lead to samples of 76 and 173, respectively. Similarly, subgroups of participants with more than two years of experience versus two or fewer years would result in subgroups of 177 and 72, respectively (see Table 2). Finally, the item itself provided little context to rate one's "total amount of work experience." Although, no data were collected, it is plausible that members of the student sample were more likely to hold part-time and temporary positions while participants in the organizational sample indicated years of full-time experience. Thus, using sample membership as a proxy for work experience rather than the direct rating should provide both more meaningful and more comparable samples for analyses of measurement stability.

As with job satisfaction, no specific hypotheses are proposed. However, it seems likely that individuals with higher levels work experience may hold more multidimensional views of justice because of increased opportunity to experience justice (and injustice) than individuals with less work experience.

Results

Preliminary Item Selection

Overall, 48 of the 78 items included in Study I met all of the psychometric criteria. Specifically, 14 items were removed due to insufficient response rate, 1 because of insufficient response range and 7 and 8 because of low standard deviations or aberrant means, respectively. Of these items, 15 were linked to systemic justice, 14 were linked to configural justice, 10 were linked to informational justice and 9 were linked to interpersonal justice. Specific results for each item at each stage are included in Table 6 and Table 7 contains the list of items that were retained.

Organizational Justice Dimensionality

To examine the dimensionality of organizational justice, the 48 items selected for inclusion in the preliminary scale served as indicators in each of the proposed models of dimensionality. As described above, four separate models of organizational justice were created to examine the relative fit a unidimensional model, the Greenberg (1986) 2-factor model, the Bies and Moag (1986) 3-factor model and the Greenberg (1993b) 4-factor model.

Prior to examining the dimensionality of the screened items, three Ph.D. research psychologists familiar with organizational justice research linked each item to a theoretical dimension of organizational justice. As described previously, these ratings served as the conceptual basis for examining Greenberg's (1993b) 4-dimensional model. As suggested by Greenberg's (1987) taxonomy of organizational justice theories, subsequent sub-models were created by combining informational and interpersonal justice to examine Bies and Moag's (1986) 3-dimensional model, by combining procedural and informational justice and distributive and interpersonal justice to test Greenberg's (1986) 2-dimensional model and by combining all items to evaluate a unidimensional model of organizational justice. See Figures 1–4 for conceptual diagrams of each model.

Confirmatory analyses. This series of confirmatory models was examined using LISREL 8.12A (Joreskog & Sorbom, 1993b). All analyses were conducted using maximum likelihood (ML) estimation and the item covariance matrix. Model fit was evaluated using a series of criteria. Specifically, consistent with the recommendations of Hu and Bentler (1995), Browne and Cudeck (1993) and Tanaka (1993), fit was evaluated using the following indices: overall χ^2 ; χ^2/df ; Joreskog and Sorbom's (1984) Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI); Bollen's (1989a) Incremental Fit Index (IFI); Bentler's (1990) Comparative Fit Index (CFI); Steiger's (1990) Root Mean Square Error of Approximation (RMSEA); Browne and Cudeck's (1989) Expected Cross-Validation Index (ECVI) and the Akaike Information Criterion (AIC; Akaike, 1973).

The selected fit criteria can generally be divided into two groups: those assessing overall model fit (χ^2 , χ^2/df , GFI, AGFI, RMSEA, ECVI, AIC); and those assessing incremental fit (IFI, CFI). Overall fit indices generally examine the match between the covariances of the observed model and those proposed by the hypothetical model. Specifically, χ^2 examines the null hypothesis

$$\Sigma = \Sigma(\theta)$$

where Σ represents the covariance of the observed model and $\Sigma(\theta)$ is the covariance of the hypothesized model (Browne & Cudeck, 1993). Because of the well known fact that relying on an overall χ^2 to assess model fit frequently leads to Type II errors (e.g., Joreskog, 1969), several researchers have suggested evaluating χ^2 relative to the model's degrees of freedom (e.g., Bollen, 1989b), with values below 3.0 to 5.0 generally considered acceptable fit (Bollen & Long, 1993). As with the χ^2 test, both GFI and AGFI conceptually represent the variance and covariance in the observed model that can be accounted for by the hypothesized model. AGFI provides a correction to GFI that adjusts for the inclusion of additional parameters in the hypothesized model (Hu & Bentler, 1995) so that more parsimonious models are not unnecessarily rejected. In general, values of GFI and AGFI above 0.90 indicate acceptable fit (Joreskog & Sorbom, 1984).

Unlike the previously described indices, which compare the hypothesized model to the sample covariance matrix, RMSEA is an index of the discrepancy between the expected population covariance matrix and the model in question. RMSEA can be interpreted as discrepancy per degree of freedom, with values between 0.05 and 0.08 demonstrating generally acceptable fit (Browne & Cudeck, 1993). Finally, AIC is an overall measure of model fit adjusted for the number of estimated parameters that is valid across all sample sizes and ECVI is an index of the expected generalizability of the fit to a new sample. Both AIC and ECVI are useful for selecting among multiple hypothetical models, with smaller values indicating better fit (Hu & Bentler, 1995). The incremental fit indices selected for model evaluation (i.e., IFI, CFI) generally compare the fit of the hypothesized model to the fit of a model with all indicators uncorrelated. Specifically, both IFI and CFI reflect the plausibility of the hypothesized model over the null model and are particularly recommended for small sample sizes (Hoyle & Panter, 1995).

As can be seen in Table 8, across all fit indices, the hypothesized models inadequately describe the structure underlying judgments of organizational justice. Specifically, values of GFI, AGFI, IFI and CFI were generally in the 0.50 to 0.60 range and RMSEA exceeded 0.08 in all four cases. Further, the fit of each of the four hypothesized models is relatively undifferentiated from the other models. While these results initially suggest that none of theoretical models of organizational justice dimensionality can adequately account for the covariance of the observed model, several alternative explanations are plausible. For example, one potential explanation for the extremely poor fit of all the models is that the data were not normally distributed. Further, given the somewhat limited sample size and the large number of parameters estimated, it is possible that the current results are not a stable estimate of the fit of each model.

Therefore, the data were examined for both univariate and multivariate normality. According to West, Finch and Curran (1995) data can be considered univariate normal for the purposes of structural equation modeling when skewness is less than $|2.00|$ and kurtosis is less than $|7.00|$. All items selected for inclusion in the examination of dimensionality meet the criteria for univariate normality. Next, multivariate normality was examined with the multivariate skewness and kurtosis indices from PRELIS 2.12A (Joreskog & Sorbom, 1993a). Results indicate that the data included in Study 1 are not multivariate normal in terms of skewness (147.018, $p < 0.00$) or kurtosis (19.719, $p < 0.00$).

According to West et al (1995), deviations from multivariate normality negatively impact estimates of model fit when using ML estimation particularly with relatively small ($N < 500$) samples (e.g., inflated χ^2 values, underestimated incremental fit indices, underestimated standard errors and parameter estimates). Therefore, they suggest several remedies for multivariate non-normality. Many of the approaches (e.g., Asymptotically Distribution Free estimation) are computationally-intensive and are therefore impractical for examining models consisting of more than 25 manifest variables, especially without extremely large sample sizes.

Alternatively, West et al (1995) recommend re-expressing variables in a manner that produces a more normal distribution. A simple technique for variable re-expression is the creation

of item parcels (e.g., Marsh, 1994; Marsh, Anthill & Cunningham, 1989). An item parcel consists of a group of items theoretically measuring a single construct that are represented by a summary value (e.g., mean) for the purposes of model testing. Item parcels have several advantages when testing measurement models. Most specifically, item parcels tend to achieve more normal distributions than their original items. Further, parcels typically produce results that are more reliable and generalizable than results based on individual items and they reduce the impact of item-specific idiosyncrasies (i.e., response biases). Finally, item parcels also reduce the number of parameters estimated in any given model, thereby increasing the stability of estimates from small samples (West et al, 1995).

Therefore, a set of item parcels was created and the set of confirmatory models were re-analyzed. When creating item parcels, Marsh et al (1989) recommend retaining a minimum of 3 item parcels per factor. Therefore, the items linked to each factor were assigned to one of the three item parcels per factor so that the within-parcel average item intercorrelation was maximized. As an initial point of reference, the average overall pairwise item intercorrelation across all 58 items is 0.26. Further, the average within-construct pairwise item intercorrelations range from 0.12 to 0.74 for the 15 items linked to systemic justice, from 0.14 to 0.76 for the 19 configural justice items, from 0.13 to 0.75 for the 9 informational justice items and from 0.13 to 0.78 for the 15 interpersonal justice items. The resulting average within-parcel pairwise intercorrelations all surpassed the average within-construct pairwise item intercorrelations. Specifically, the average within-parcel intercorrelations were 0.41, 0.44, 0.57 and 0.50 for Systemic, Configural, Informational and Interpersonal Justice, respectively. The specific items aggregated to create each item parcel are listed in Table 9.

To ensure that each of the four models described above was evaluated using item parcels consisting of the same items, parcels were created for the four-dimensional model first. Then, item parcels from the 4-dimensional model were reallocated to produce the 1-, 2- and 3-dimensional models as described above. Test of univariate normality suggest the item parcels are normally distributed (see Table 10) and tests of multivariate normality indicate that, while still somewhat non-normal, the item parcels are more normally distributed in terms of both skewness

(17.63, $p < .00$) and kurtosis (5.71, $p < .00$) than were the individual items. Therefore, all confirmatory analyses were re-run using the item parcels created above. The series of confirmatory models described above were examined using item parcels in LISREL 8.12A (Joreskog & Sorbom, 1993b). All analyses were again conducted using ML estimation and the item parcel covariance matrix. Table 11 contains a correlation matrix summarizing the linear relationships among the item parcels.

To examine dimensionality, each model was compared for the entire sample. Model fit was evaluated using the same criteria outlined above. Specifically, fit was evaluated with overall χ^2 ; χ^2/df ; Joreskog and Sorbom's (1984) Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI); Bollen's (1989a) Incremental Fit Index (IFI); Bentler's (1990) Comparative Fit Index (CFI); Steiger's (1990) Root Mean Square Error of Approximation (RMSEA); Browne and Cudeck's (1989) Expected Cross-Validation Index (ECVI) and the Akaike Information Criterion (AIC; Akaike, 1973).

Based on the fit of each model as represented by the above indices, results again indicate poor fit for all four theoretical models (see Table 12), with fit indices generally ranging between 0.60 and 0.75. Clearly, then, the sample factor structure still deviates significantly from the structure of any hypothesized model. Further, for all solutions the pattern of relatively undifferentiated fit of the theoretical models described for the item-level analyses above was replicated using item parcels. As evidenced by the improved values for most fit indices in Table 12, while the non-normality of the data and the small sample size did impact the initial results, the impact of these artifacts is not a complete explanation for the poor fit of each model. Clearly, as suggested by the borderline values of many of the indices in both sets of analyses (e.g., GFI, AGFI, RMSEA) as well as the structure of the item parcel correlation matrix, untested alternative models may provide better fit than any of the theoretical models.

By examining the structure of the item parcel intercorrelation matrix, it is clear that (1) most item parcels are generally related and (2) item parcels 4 and 7 are more closely related to each other than to any other parcels. Therefore, five additional models were investigated. Three of

the additional models of organizational justice include a general organizational justice factor (J), indicated by all 12 item parcels, in addition to the two, three or four factors of the theoretical models described previously. That is, the 2-, 3- and 4-dimensional models described above were re-examined after incorporating a general organizational factor indicated by all 12 parcels. The fourth model specifies a two dimensional model that incorporates only justice and injustice factors, with injustice indicated by parcels 4 and 7 and justice indicated by the other 10 parcels. The fifth model includes a general factor in addition to the justice and injustice factors of the fourth model. The inclusion of a general factor to account for the common variance shared across factors is consistent with research into the dimensionality of other constructs, such as human ability (Comrey & Lee, 1992).

As can be seen in Table 12, results indicate improved fit for all five models when a general factor is overtly modeled. However, while the fit indices for the 4-factor + J model all exceed cutoffs for acceptable fit, the 2- and 3-factor models that incorporate general factors and the 2-factor just-unjust model tended to show more moderate fit. However, the just-unjust + J model, while fitting slightly poorer than the 4-factor + J model, generally exceeded cutoffs for most criteria as well. Specifically, fit indices for the 2-factor + J, 3-factor + J and the just-unjust models generally ranged between 0.75 and 0.90, while fit indices for the 4-factor + J model and the just-unjust + J model generally exceed 0.90. Clearly, then, Greenberg's (1993b) four-factor model of organizational justice captures respondents' perceptions of organizational justice, but only when a general factor is included as well. However, the fit of just-unjust + J model indicates that respondents' perceptions of organizational justice may alternatively be conceptualized more simplistically as consisting simply of justice, injustice and general organizational justice.

Exploratory analyses. To investigate the likelihood of any additional factor structures, an exploratory factor analysis was conducted to examine the structure underlying participants' responses. As an initial investigation of the factor structure of participants' responses to the 48 screened items, responses to all items were factor analyzed using ML estimation and direct quartimin rotation, due to the expected correlations between justice constructs (cf., Hauenstein et al, 1997) . As can be seen in Table 13, eigenvalues for the initial results suggested the potential

for a 10-factor solution. Of the 10 factors, six factors appeared to be theoretically interpretable. Further, most of these factors tended to transcend the procedural-distributive and structural-social distinctions imposed by the theoretical models. As can be seen in Table 14, the six interpretable factors can be labeled General Unfairness (Factor 2), General Fairness (Factor 3), Consistency of Manager (Factor 4), Explanation of Process (Factor 6), Overall Fairness (Factor 7) and Manager as Friend (Factor 10). The remaining factors (1, 5, 8 and 9) were not clearly interpretable.

Next, to produce a clearer picture of the factor structure, the five items loading less than 0.35 on any factor were removed and the data were re-analyzed using the procedures described above. The five items removed from the scale because of low loadings do not generally appear to be related in content or format (see Table 15). Table 16 contains eigenvalues for the revised results, which suggest a 3-factor solution explaining 52.4% of the variance in participants' ratings. Figure 5 contains a scree plot for the revised exploratory analyses.

As can be seen in Table 17, results for the 3-factor solution are in opposition to any of the theoretical models of organizational justice tested above. The large first factor clearly contains items addressing both procedural fairness and consistency (i.e., systemic justice) as well as informational justice. Further, the majority of items loading on Factor 1 relate to experiences with a manager. Conversely, all items loading on the second factor relate to distributive injustice (both configural and interpersonal injustice). Finally, items loading on the third factor primarily suggest conceptions of distributive fairness. Further, consistent with the results of the Hauenstein et al (1997) meta-analysis, there is a strong Procedural Justice-Distributive Justice correlation ($r = 0.51$). Otherwise, the three factors are generally uncorrelated. Table 18 contains the factor intercorrelation matrix demonstrating the pattern of relationships between each factor.

Based on research into the psychometric quality of the Job Diagnostics Survey (JDS), Harvey, Billings and Nilan (1985) suggest that a negative wording factor, such as the Distributive Injustice factor described above, may simply contribute construct-irrelevant variance and cloud interpretation of raw item scores. However, differences between the Harvey et al (1985) study and the current study suggest that the presence of a Distributive Injustice factor may not be

simply artifactual. For example, Harvey et al (1985) report lower communalities and factor loadings for the negative items, indicating less variance in common with the underlying factors. In the current study, however, both communalities and factor loadings are of a similar magnitude in both the positive wording and negative wording factors. Specifically, communalities for all items ranged from 0.222 (item 30) to 0.719 (item 62), while communalities for the Distributive Injustice items ranged from 0.372 (item 33) to 0.654 (item 52). In fact, only five items had a higher communality than item 64. Further, factor loadings for the Distributive Injustice factor ranged from 0.453 to 0.771, while loadings for positive wording items fell in a similar (or lower) range (e.g., 0.322 to 0.776 and 0.314 to 0.743, for the first and third factors respectively). Therefore, the presence of negative wording items in the current analyses does not appear to simply add construct-irrelevant variance, but captures real variance in respondents' views of their work experiences.

Organizational Justice Measurement Stability Across Subgroups

As discussed by Hemmelgarn, James, Ladd and Mitchell (1995) and others (e.g., Harman, 1976; Gorsuch, 1983), questions of measurement stability are ideally addressed through a multiple-groups confirmatory factor analytic approach. The largest advantages of confirmatory factor analytic approach to measurement stability include the ability to estimate measurement error and the ability to identify the impact of "unmeasured variables." Hemmelgarn et al (1995) provide a review of the limitations of previous approaches to assessing measurement stability and cross-situational consistency. Therefore, the stability of the overall dimensionality of organizational justice across subgroups was first examined using a multiple groups confirmatory factor analytic approach.

According to Joreskog and Sorbom (1989), assessing measurement stability using a multiple-groups confirmatory factor analytic approach involves testing a series five hypotheses. Support for the first hypothesis provides only minimal evidence of cross-sample stability, while support for the fifth hypothesis indicates almost identical factor structures between the samples. Accordingly, cross-sample consistency analyses are conducted sequentially and are discontinued when a single hypothesis is not supported. To assess cross-sample stability in the current study,

five hypotheses were proposed. The first hypothesis ($\Sigma^1 = \Sigma^2$) examines the overall similarity of the samples' covariance matrices. Hypothesis 2 tests the hypothesis that there are five common factors in each of the subgroups. Specifically, hypothesis 2 examines whether the results from the overall analyses — one general factor consisting of all indicators and four correlated factors representing systemic, configural, informational and interpersonal justice — adequately represent the factor structures of each subgroup. Hypothesis 3 ($\Lambda^1 = \Lambda^2$) examines the similarity of the pattern of factor loadings, assuming the factor pattern described in hypothesis 2. Hypothesis 4 ($\Theta^1\Lambda^1 = \Theta^2\Lambda^2$) examines the stability of both the pattern of factor loadings and measurement error under the hypothesized factor pattern. Finally, hypothesis 5 ($\Theta^1\Phi^1\Lambda^1 = \Theta^2\Phi^2\Lambda^2$) constrains the pattern of item loadings, measurement error and the factor intercorrelations to be identical across samples under the hypothesized factor pattern.

Therefore, as discussed previously two sets of theoretically relevant subgroups were created and measurement stability was assessed across each subgroup separately for each set. To create the first set of subgroups, participants were categorized as high or low in global job satisfaction. To equate measurement stability across levels of job satisfaction, participants were divided into groups based on a median split of mean scale scores. Specifically, 118 participants were classified as high in satisfaction and the remaining 129 were categorized as low in satisfaction. A second set of subgroups was created to examine the impact of full-time work experience on individuals' conceptions of organizational justice. As discussed above, the strong association between sample (student or working) and work experience supports the use of sample membership a proxy for work experience. Therefore, responses from the 109 participants included in the organizational sample were compared to the responses of the 140 participants in the student sample. As would be expected, participants high and low in satisfaction were present in both the organizational and student samples. Therefore, only independent groups (e.g., high satisfaction and low satisfaction subgroups or organizational and student samples, but not high satisfaction and organizational samples) were compared in the following analyses. Job satisfaction and sample membership were moderately correlated ($r = .496$), so that members of the organizational sample tended to be more satisfied.

As described above, hypothesis 1 compared the overall structure of each subgroup's covariance matrix. Hypothesis 1 received strong support in both the satisfaction subgroups (high versus low) and work experience samples (organizational versus student). Specifically, in comparing the form of the high and low satisfaction subgroups, most fit indices approached their maximum values (e.g., GFI = 0.95, IFI = 0.98, RMSEA = 0.039). Results for the student versus organizational samples, while indicating slightly poorer fit, were also well within acceptable levels of fit (e.g., GFI = 0.93, IFI = 0.97, RMSEA = 0.054). Hypothesis 2 examined whether the results from the overall analyses — one general factor consisting of all indicators and four correlated factors representing systemic, configural, informational and interpersonal justice — adequately represent the factor structures of each subgroup. Unfortunately, when testing the hypothesis 2 model simultaneously on both samples, a solution did not converge after 3000 iterations. However, the hypothesis 2 model did converge when tested independently on each subgroup. Therefore, it appears that the current sample sizes are not sufficient to adequately estimate the stability of the overall model on each subgroup simultaneously using a multiple groups confirmatory factor analytic approach. Therefore, to further examine the stability of organizational justice dimensionality beyond the above hypothesis, an alternative approach must be followed.

Therefore, measurement stability was assessed across each subgroup separately for each set using an alternative, multi-stage approach. Stability was examined using the four subgroups described above. That is, 118 participants were classified as high in satisfaction and 129 were categorized as low in satisfaction. Similarly, the 109 participants included in the organizational sample were compared to the responses of the 140 participants in the student sample.

The analytic approach to examining measurement stability involved five steps. First, to provide broad evidence of structural similarity, scree plots for each subgroup were compared. Next, as suggested by Gorsuch (1983) the similarity of individual item factor loadings for each subgroup was evaluated. To supplement these highly subjective criteria, Gorsuch (1983) recommends comparing the patterns of factor intercorrelations and the size of each factor as represented by the proportion of variance accounted for by each factor. Finally, the exploratory

results for a given subgroup were cross-validated on a complementary subgroup. That is, separate exploratory factor analyses were first conducted for each subgroup (e.g., high satisfaction subgroup, students). Then, the results of the exploratory analyses for each subgroup were used to generate a structural model that was evaluated on an independent, complementary sample (e.g., low satisfaction subgroup, organizational sample).

As would be expected, participants high and low in satisfaction were present in both the organizational and student samples. Therefore, only independent groups (e.g., high satisfaction and low satisfaction subgroups or organizational and student samples, but not high satisfaction and organizational samples) were compared in the following analyses. As described above, the first examination of measurement stability involved creating scree plots separately for each subgroup. As can be seen in Figures 6 – 9, the shape of each plot varies only slightly for each subgroup. Further, the location of the “elbow” for each subgroup suggests the presence of between two and four factors across all groups. Further, all four subgroups produced large first factors, followed by a series of similarly-sized secondary factors. Therefore, to provide the strictest comparison of the dimensionality for each subgroup, the remaining criteria were evaluated using a three factor solution for each subgroup.

Scree plots provide no qualitative information about the item content of any individual factor. Therefore, the pattern of item loadings for each factor was examined next. As can be seen in Tables 19 through 22, both the strongest loading items and the overall content of each factor varied across subgroups. For example, only one of the six items loading most strongly on Factor 1 for the high satisfaction subgroup was among the highest loading items on any of the first three factors for the low satisfaction subgroup. However, four of the six highest loading items on Factor 2 for the high satisfaction and low satisfaction subgroups were in common and three items loading on Factor 3 were present in the low satisfaction subgroup as well. Further, while the results for the high satisfaction subgroup are similar to those of the overall analyses, producing separate factors for Informational (procedural/ social) Justice (cf., Greenberg, 1993b), Distributive Injustice and Distributive Justice, the low satisfaction subgroup produced a General Justice factor that did not clearly distinguish between procedures and outcomes and two separate

injustice factors addressing Distributive Injustice (Factor 2) and Interactional Injustice (cf., Bies & Moag, 1986). It should be noted that communalities and factor loadings for the Distributive Injustice factor were comparable to those for the other factors.

Further, with the exception of the Distributive Injustice factor, the overall item content of each factor was also unstable. Specifically, the items loading on the Informational and Distributive Justice factors in the high satisfaction subgroup were, in general, combined in the low satisfaction subgroup to produce the General Justice factor. Items loading negatively on the Interactional Injustice factor in the low satisfaction subgroup are a subset of the items loading positively on the Informational Justice factor in the high satisfaction subgroup.

The inconsistency of the results for the organizational and student samples was similar to the high and low satisfaction subgroups. For example, while Factor 1 for the organizational sample and Factor 3 for the student sample shared three of the six highest loading items, two other items loaded on Factor 1 in both samples. As with the high and low satisfaction subgroups, Factor 2 for both samples shared four items in common. However, Factor 3 from the organizational sample contained items loading strongly on both Factors 1 and 3 of the student sample. Despite these differences, both samples produced Informational Justice and Distributive Injustice factors. However, the third factor in the organizational sample addressed Interpersonal (distributive/ social) Justice (cf., Greenberg, 1993b) while the third factor for the student sample invoked Systemic (Procedural) Justice.

Again, as with the high and low satisfaction subgroups, with the exception of the Distributive Injustice factor, the overall item content of each factor in the organizational and student samples was unstable across the student and organizational samples. Specifically, while both groups did produce an Informational Justice factor, the items loading on each factor varied. That is, the items comprising Informational and Interpersonal Justice in the organizational sample tended to be reallocated in the student sample to produce Informational and Systemic Justice factors.

Next, the relationship among the factors and the relative size of each factor were examined. As can be seen in Table 23, when it was possible to compare the correlation between two factors with comparable item content, the pattern of relationships among factors varied in their similarity. For example, while named differently, Factors 1 and 2 had generally overlapping item content and were virtually uncorrelated in both the high satisfaction ($r = 0.03$) and the low satisfaction ($r = -0.04$) subgroups. Alternatively, while Informational Justice and Distributive Injustice were moderately correlated in the organizational sample ($r = 0.45$), they are virtually uncorrelated in the student sample ($r = -0.10$). However, it should be noted that the specific item content comprising Informational Justice and Distributive Injustice in the student and organizational samples was not identical across samples, which may have impacted the reported relationship between these constructs. Also, as with the previous analyses, it should be noted that communalities and factor loadings for the Distributive Injustice factor were comparable to those for the other factors.

Although the available patterns of factor intercorrelations were sometimes similar across subgroups, the magnitude of each factor was generally more stable (see Table 24). For example, the large first factor in each subgroup, which accounted for between 32.6% and 38.1% of the total variance, always addressed procedural justice with the exception of the low satisfaction subgroup. Further, for all four groups, the second factor focused on distributive injustice and explained between 8% and 9% of the remaining variance. Finally, across all four groups the third factor invoked different components of justice to explain an additional 4% to 6% of the variance.

While the previous set of analyses suggest that some aspects of the dimensionality of organizational justice may not be stable across subgroups, none of the results indicate the extent to which the factor structure derived in one group can adequately account for the factor structure of another group. This criterion can be directly addressed by attempting to cross-validate the factor structure generated for one subgroup on a complementary subgroup. To evaluate the fit of one subgroup's factor structure on another subgroup, the pattern of factor loadings for the first subgroup were compared to the actual pattern of factor loadings of the second subgroup through confirmatory factor analysis. Specifically, all analyses involved creating structural models with the

six highest loading items per factor for each subgroup serving as indicators. All analyses were conducted using ML estimation and the item covariance matrix in LISREL 8.12A (Joreskog & Sorbom, 1993b). Recent research by MacCallum, Widaman, Zhang and Hong (1999) supports the use of factor analytic approaches on samples sizes in the range of these subgroups (i.e., 100-150) provided that models with a low number of highly determined factors (i.e., six or more indicators per factor) and consistently high communalities (i.e., above 0.60) are available. All four cross-validation analyses reported below meet these criteria. Conceptual diagrams of each model are included in Figures 10 through 13.

Job satisfaction. Tables 25 and 26 contain results of the cross-validation analyses for the exploratory models generated by the high satisfaction subgroup on the low satisfaction subgroup and for the low satisfaction subgroup on the high satisfaction subgroup, respectively. Given the universally poor fit across all indices for both analyses, it is clear that neither subgroup model sufficiently captured the structure of the other subgroup.

Work experience/sample. Tables 27 and 28 contain results of the cross-validation analyses for the exploratory models generated by the organizational sample on the student sample and the student sample on the organizational sample, respectively. As with the results for the high and low satisfaction subgroup analyses above, it is clear that neither subgroup model sufficiently captured the structure of the other subgroup.

Discussion

Based on the results of these analyses, several interesting conclusions can be drawn. First, none of the four theoretical models of organizational justice dimensionality described above can alone clarify our understanding of organizational justice dimensionality. However, three models separate models received some support in the current study. In the first model, respondents produced a general organizational justice factor and four smaller factors that generally corresponded to Greenberg's (1993b) four-factor model. Specifically, in the best fitting model all items loaded on a general factor and cross-loaded on four separate factors that corresponded generally to Greenberg's (1993b) Configural, Systemic, Interpersonal and Informational Justice.

Second, a model specifying a general factor in addition to justice and injustice subfactors provides an alternative interpretation of respondents' perceptions. Finally, the exploratory analyses support a three-factor model that includes procedural justice, distributive justice and distributive injustice factors. Regardless of which of these models is favored, no currently existing theoretical model of justice can account for the current participants' responses. Second, consistent with the findings reported by Hauenstein et al (1997), procedural and distributive justice were moderately correlated. Further, based on these results, it appears that judgments of distributive justice and injustice may be rendered independently rather than existing at opposite ends of a single continuum.

The undifferentiated fit of all four a priori models may be due to several potential causes. First, given the assumed instability of organizational justice across contexts and/or subgroups (cf., Cropanzano & Greenberg, 1997), overall model fit may have been reduced because contexts and/or subgroups that differ in dimensionality were aggregated to conduct the overall confirmatory analyses. That is, because previous research has suggested that organizational justice dimensionality may not be equivalent across contexts and/or groups, it is possible that no theoretical model of organizational justice could be created to provide optimal fit.

A clear alternative explanation is that the theoretical models of organizational justice examined in the current study do not adequately capture the complexity of the organizational justice. That is, while sufficiently stable across contexts and subgroups, organizational justice may consist of a more complex set of constructs than is represented by any of the theoretical models. To this end, models of organizational justice that incorporate a general factor in addition to item cross-loadings provided better fit.

The observed relationships between some factors could be due to the inclusion of items that transcend the procedural-distributive and structural-social distinctions. Because the individual item loadings of the hypothesized model were highly discrepant from the observed item covariances, the absence of cross-loadings in any theoretical model clearly negatively impacted overall fit for all four theoretical models. The enhanced fit of the 4-factor + J model supports the

contention that the strong procedural-distributive justice correlation reported by Hauenstein et al (1997) may simply be the result of the inclusion of multidimensional items that measure neither procedural nor distributive justice independently.

Third, items may also group into factors independently of the theoretical models described above. Specifically, participants' responses may group together more clearly according to contextual/situational information (e.g., compensation, ethics, performance evaluation) or by other means (e.g., justice versus injustice) than by the structural components of justice implicit in the theoretical models. The enhanced fit of the just-unjust + J model supports the idea that a simple justice-injustice distinction may explain a large portion of respondents' perceptions.

An alternative interpretation of these results suggests that respondents' perceptions of justice (and injustice) are not as complex and differentiated as is implied by any of the theoretical models described and tested above. Instead, respondents distinguished primarily between justice and injustice. To further support this conclusion, it is interesting to note that only one item loaded on both Factor 1 (Procedural Justice) and Factor 2 (Distributive Injustice), two items loaded on both Factor 1 and Factor 3 (Distributive Justice) and no items loaded on both Factor 1 and Factor 3. Further, the item that crossloaded on Factors 1 and 2 ("It took a long time for my manager to let me know the outcome of decisions made about me.") addressed both interpersonal injustice and distributive outcomes while the items crossloading on Factors 1 and 3 ("My manager rewarded employees who performed their jobs adequately.", "When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.") concerned interpersonal justice and distributive outcomes. Further, all items indicating distributive justice (versus injustice) loaded only on Factor 3. Finally, based on the pattern of communalities and factor loadings reported for the Distributive Injustice items, the conclusion that negative wording items simply add construct-irrelevant variance and should therefore be avoided (cf., Harvey et al, 1985) is not warranted in the current analyses.

The results of both the 4-factor + J and the just-unjust + J confirmatory analyses suggest that while an interpretable factor structure can be recovered, its dimensionality diverges to some degree from any of the a priori models of organizational justice dimensionality. Thus, while the

deductive, theoretical models of justice examined in the current study may have a heuristic, descriptive value, they are unable to capture the actual structure underlying individual's judgments of justice. Rather, a more inductive, empirical theory of justice that incorporates the current results may more adequately reflect the psychological processes underlying justice judgments.

However, several methodological constraints imposed by the current study may have also negatively impacted the fit of the theoretical models. Specifically, the task instructions did not supply any contextual information to frame respondents' judgments. As a result, it is possible that the contexts individual participants chose when responding varied greatly. As a result, to the extent that justice is context sensitive, a great deal of "noise" may have been introduced into the data. Further, by relying on item parcels rather than individual items, it is possible that items with dissimilar, unmodeled secondary loadings could have been combined, further increasing the "noise" in the data. However, given that the items were aggregated to maximize their within-parcel intercorrelation this scenario is less likely.

The results of the exploratory analyses suggest that individuals may systematically discriminate between the structural and social components of procedural justice as suggested by Greenberg (1993b) and Bies and Moag (1986), at least when describing interactions with an individual (e.g., manager). Future research, then, could investigate the whether justice is alternatively differentiated when judged in reference to a more distal target (e.g., an organization).

Based on the results of the analyses investigating measurement stability across subgroups, it is clear that the dimensionality of organizational justice is not stable, at least across subgroups. Specifically, differences in the patterns of item loadings and factor content were observed across all subgroups. For example, while the high satisfaction respondents tended to discriminate between different categories of justice (i.e., Informational and Distributive Justice) the low satisfaction participants discriminated between forms of injustice (i.e., Interactional and Distributive Injustice). Similarly, while participants in the student sample discriminated between social (i.e., Informational) and structural (i.e., Procedural) forms of procedural justice, participants in the organizational sample distinguished the procedure-oriented form of social

justice (i.e., Informational Justice) from the outcome oriented (i.e., Interpersonal Justice). However, the one consistent finding across analyses is that all subgroups again produced a factor addressing Distributive Injustice. Further, across all groups this factor consisted primarily of the same seven items.

However, some communality between the subgroups can be seen. For example, the high satisfaction subgroup appears to correspond directly to the overall solution, while the low satisfaction appears to merge the procedural and distributive factors while retaining a separate distributive injustice factor, as does the organizational sample. The student sample also includes separate justice and injustice factors. As such, one clear distinction between the groups is the extent to which the samples distinguish between outcomes (i.e., distributive (in)justice) and the source of the outcomes (i.e., the manager or the organization).

The original purpose of Study II was to finalize a global measure of organizational justice, examine the item-level performance of the measure and provide some initial validity evidence for the new scale. However, based on the facts that (1) an alternative overall factor structure was uncovered that diverged significantly from all of the a priori models examined and (2) the each identified subgroup factor structure deviated from the overall results as well, finalizing and validating a global measure of organizational justice seems premature. Instead, Study II will further investigate the dimensionality and measurement stability of organizational justice.

In interpreting the results of the stability analyses, several points should be noted. First, context-sensitivity as discussed by Cropanzano and Greenberg (1997) could be impacted by two alternate definitions of “context.” For example, while the above analyses investigate the impact of individual differences (e.g., satisfaction, work experience) on perceptions of justice, they do not account for differences in work context. That is, context-sensitivity can also be examined across the varying work contexts (e.g., selection, performance appraisal) that individuals experience. Further, the above analyses were conducted on data that was collected without standardized contextual information. For example, the task instructions did not specify the recency, length or number of experiences that participants were to use in making organizational justice judgments. Therefore, an additional set of analyses was conducted to evaluate the stability of organizational

justice across work contexts. Further, these analyses were conducted using a set of “item stems” rather than individual items. As a result, the context in which perceptions of justice are rendered is more fully specified. Thus, these analyses provide both an opportunity to evaluate the measurement stability of organizational justice across work contexts and a prospect for examining the impact of a stronger-context “item stem” approach to scale development on measurement stability.

Chapter 3: Study II

Measurement Stability Across Work Contexts

Participants

Participants included 327 individuals from Virginia Tech. The sample was diverse in age, gender and work experience. Specific demographic information for this sample is presented in Table 29. As with Study I, all participants in the current study were required to have held a job for 3 of the previous 12 months. Participants were recruited solely from the Psychology department's subject pool and received 1 extra credit point for participation. Participants voluntarily completed the study in large (e.g., 25-50 people) groups. As described for previous analyses, all cases were examined for outliers, but no cases were removed. Missing data for the remaining participants were deleted listwise. All analyses were conducted using the remaining 314 cases.

Procedure

Item Stem Development

To initiate the development of a global measure of organizational justice that could be adapted for use in a variety of contexts, a set of "item stems" was created based on the content of the pool of items retained in Study I. All 42 "global" items consist of a contextual phrase (e.g., "The procedures used to hire me for this job...") followed by a series of "item stems" that address organizational justice in the context provided by the introductory phrase (e.g., "...were consistently applied to all applicants."). An "item stem" approach to measure development was employed for two primary reasons. First, items stems allow researchers to use similar items sets in different contexts. Thus, they allow researchers to achieve Greenberg's (1993b) notion of the "customized application of a standardized measure" (p. 255). Further, item stems also provide standardized contextual information to more systematically focus participants' judgments of justice in specific contexts. See Appendix C for the specific items and task instructions. In creating the revised scale, five items were removed because of content redundancy or difficulty in translating item content into general "item stems", resulting in a total of 42 global "item stems."

Included Measures

All participants completed the set of “item stems” in relation to two separate work contexts: selection and performance appraisal. These contexts were selected for the current study because they were most likely to be experienced by participants with even minimal amounts of work experience. Thus, participants were asked to complete a total of 84 “item stems” (42 per work context). In addition, participants completed the 10-item version of the Quinn and Staines (1977) facet-free measure of job satisfaction, a 27-item organizational justice measure created by Folger and Konovsky (1989) and the 40-item Selection Fairness Survey (Gilliland & Honig, 1994). However, only responses to the 84 “item stems” were used in the current analyses.

Analytic Approach

The analytic approach to examining cross-contexts consistency was similar to that described for the subgroup analyses described previously. Specifically, the results of separate exploratory factor analyses (ML estimation, direct quartimin rotation) were compared for each context. However, one difference between the cross-context analyses reported below and the subgroup analyses reported above is that all cross-context analyses were conducted using within-subject data. That is, the analyses were designed to compare participants’ responses to the set of “item stems” in the selection context to their responses to the same set of “item stems” in the performance appraisal context. As described in previous sections, five indices of measurement stability were examined. First, scree plots for each group were compared to evaluate cross-context structural similarity in a general sense. Next, the pattern of item loadings was compared. These analyses were supplemented with comparisons of the pattern of factor intercorrelations and the size of each factor as represented by the proportion of remaining variance accounted for by the addition of each factor. Finally, the exploratory results were cross-validated for each work context.

Results

To examine cross-context measurement stability, data from each context were factor analyzed and the results were compared using five criteria. The original solution contained no items that loaded less than 0.30 on any single factor, therefore, the results reported below are

based on the initial factor analysis results. Evaluation of the cross-context stability of these results followed five steps. The first examination of measurement stability involved comparing the scree plots generated in each work context. By comparing Figures 14 and 15, it can be seen that the shape of each plot varies somewhat across contexts. For example, while the location of the “elbow” in the selection context produces a sharp break after four factors, the scree plot for the performance appraisal context produces sharp breaks after both two and four factors. Further, the relative magnitude of the first factor is clearly higher in the performance appraisal context than in the selection context. However, upon overall examination of the individual solutions (e.g., percent of variance explained per factor, magnitude of factor loadings, number of items not loading on any factor), a three factor solution was selected for both work contexts.

Next, the pattern of item loadings for each factor was examined. As can be seen in Tables 30 and 31, the majority of the strongest loading items were consistent across contexts and the overall content of each factor varied only slightly. For example, three of the six items loading most strongly on Factor 1 in the selection context were also among the highest loading items on Factor 1 in the performance appraisal context. Further, Factor 2 in each context shared the same six highest loading items and Factor 3 in each context shared five of the six highest loading items. Further, the first factor in both contexts consisted of primarily procedural justice items and several items addressing distributive justice, while items loading on the second factor consistently emphasizing interpersonal justice and the third factor suggested distributive injustice. Again, the magnitude of the item communalities and factor loadings suggests that the distributive injustice factor does not simply add construct-irrelevant variance.

Next, the relationship among the factors and the relative size of each factor were examined. As can be seen in Table 32, the pattern of relationships among factors was also generally stable across contexts. Specifically, Factors 1 and 2 had generally overlapping item content across contexts and shared a strong positive correlation in both the selection context ($r = 0.51$) and in the performance appraisal context ($r = 0.66$). Similarly, Factors 1 and 3 shared a moderate positive correlation in the selection context ($r = 0.36$) and in the performance appraisal

context ($r = 0.27$). Factors 2 and 3 in both contexts were virtually uncorrelated (selection $r = 0.13$, performance appraisal $r = 0.18$).

In interpreting the meaning of and the relationship among the factors in each context, it should be noted that as an artifact of the statistical algorithm used to generate the factor analysis, virtually all items loading on factor 3 in the selection context and factor 2 in the performance appraisal context originally had negative weights and were negatively correlated with other factors as well. However, as described by Harman (1976), the individual sign of items loading on a factor can be flipped, provided that the sign of all items loading on that factor and the sign of the correlation of that factor with other factors are flipped as well. Accordingly, to simplify interpretation of the results described above, values for all item loadings on factor 3 in the selection context and factor 2 in the performance appraisal context (and the correlations of these factors with other factors) reported in Tables 30 and 31 were flipped.

It should also be noted that several items did not load strongly on any of the factors in either context. For example, four items under the first stem and two items under the second stem did not load on one of the three primary factors above 0.30 in the selection context and two items (one under the first stem and one under the third stem) did not load on one of the three primary factors above 0.30 in the performance appraisal context. However, the content of these items did not suggest a systematic, meaningful relationship. That is, the inclusion of additional factors, particularly in the selection context, did not explain the relationship of these items to the overall set of items. In the selection context, for example, the excluded items addressed characteristics of the selection procedures and the outcome of the selection process in both positive and negative terms.

One difference between the two sets of results was the magnitude of each factor across the two contexts (see Table 33). For example, while the first factor in each context was always large, it accounted for 25.5% of the total variance in the selection context compared to 35.1% in the performance appraisal context. Alternatively, the second factor in both contexts explained 8.1% and 7.0% of the remaining variance, respectively and the third factor explained 6.1% and 5.2%,

respectively. Thus, a larger portion of total variance was explained in the performance appraisal context (47.3%) than in the selection context (39.7%) and this difference is primarily due to the magnitude of the first factor. The discrepancy in the magnitude of the first factor suggests a difference in the salience of procedural justice across contexts. That is, a greater proportion of the variance in respondents' ratings of organizational justice can be attributed to procedural justice in the performance appraisal context than in the selection context.

As discussed previously, none of the previous results indicate the extent to which the factor structure derived in one context can adequately account for the factor structure in another context. Therefore, the factor structure generated for each context was subjected to cross-validation in the other context. To evaluate the fit of one context's factor structure on another context, the pattern of factor loadings for the first context were compared to the actual pattern of factor loadings of the second subgroup through confirmatory factor analysis. Specifically, all analyses were conducted using the procedure discussed above and involved creating structural models with the six highest loading items per factor for each subgroup serving as indicators. All analyses were conducted using ML estimation and the item covariance matrix in LISREL 8.12A (Joreskog & Sorbom, 1993b). Further, all loadings and factor intercorrelations were constrained to be positive. Conceptual models of each analysis are included in Figures 16 and 17.

Selection context. Table 34 contains results of the cross-validation analyses for the exploratory models generated using the selection context on data from the performance appraisal context. As can be seen, because the two contexts shared many individual item loadings and factor intercorrelations in common, the overall fit of each model was generally good across all indices. Specifically, goodness of fit indices ranged from 0.89 (AGFI) to 0.92 (GFI) while RMSEA is 0.08. Thus, it appears that the factor structure generated in the selection context was generalizable to the performance appraisal context.

Performance appraisal context. Table 35 contains results of the cross-validation analyses for the exploratory models generated in the performance appraisal context on data from the selection context. As with the results for the selection context, it is clear that the structure

generated in the performance appraisal context adequately captures the factor structure of data generated in the selection context. Again, goodness of fit indices ranged from 0.90 (CFI) to 0.95 (GFI) while RMSEA is 0.07.

Discussion

The above results provide initial evidence that perceptions of organizational justice may be stable across work contexts. For example, in both the selection and performance appraisal contexts the scree plots, the pattern of individual factor loadings, the factor intercorrelation matrix and the magnitude of most factors were generally similar. Further, the factor structure could be cross-validated for both work contexts on the opposite context. The most significant difference between the factor structures in each context were the relative size of the first (Procedural Justice) factor, which accounted for over 10% more of the total variance in the performance appraisal context.

However, several important limitations of the cross-context analyses should be noted. First, the 42 item stems in each context were presented with only three introductory phrases. Coincidentally, these phrases invoke procedures, outcomes and interpersonal treatment in a manner that was not consistent with the analyses conducted in the cross-subgroup analyses. Thus, the dimensionality of justice across contexts may have been influenced by the contextual information provided by the introductory phrases accompanying each item. As discussed above, items in the cross-subgroup analyses provided little or no contextual information and did not always conform to the same factor structure reported here.

Further, all cross-context analyses were conducted within-subject, thereby potentially inflating cross-context similarity. Thus, while the results of the cross-context analyses suggest that providing contextual information may help frame individuals' response patterns, a study that does not confound the presence of contextual information with a between-subjects design would better address the cross-context stability of organizational justice.

Finally, the results of the cross context analyses did not support the presence of an informational justice factor that addresses the social component of procedural justice. However, few of the 42 items included in this study directly addressed informational justice (see Appendix C). The three item stems that most closely addressed informational justice (4/46, 6/48, 39/81) either loaded on none of the three factors or on the interpersonal justice factor. By including item stem content that more directly addresses components of informational justice, the a different factor structure might be uncovered. Thus, a study that addresses the above limitations would provide more definitive evidence of the stability of organizational justice dimensionality across work contexts.

Chapter 4: General Discussion

The overall results of this set of studies suggest three primary conclusions about the psychometric characteristics of organizational justice. First, it is clear that none of the a priori models of organizational justice dimensionality (e.g., Adams, 1965; Greenberg, 1986; Bies & Moag, 1986; Greenberg, 1993b) may adequately describe the structure underlying justice judgments. Second, although several models descriptive of the overall underlying structure of organizational justice can be generated, consistent and meaningful difference in this structure may occur across subgroups. Finally, the results of Study II suggest that a common factor structure may be created to account for perceptions of organizational justice across work contexts.

The examination of the a priori theoretical models in Study I suggests that, while individuals may distinguish between procedure-oriented, outcome-oriented, social and structural components of justice as suggested by Greenberg (1993b), all items also cross-load on a single general organizational justice factor. Alternatively, other results (e.g., just-unjust + J model, exploratory results) suggest that individuals may not clearly and consistently distinguish between procedure-oriented, outcome-oriented, social and structural components of justice in any combination. Thirdly, as suggested by the exploratory analyses, individuals may separately dimensionalize outcomes in terms of their equity (i.e., fair or unfair) and as distinct from the procedures used to make those decisions. Interestingly, then, these results suggest that a given outcome can be evaluated in terms of both its fairness and unfairness.

The exploratory results are strikingly similar to Herzberg's (1966) motivator-hygiene theory of job satisfaction. Herzberg's (1966) theory proposed two distinct factors that independently impact satisfaction: hygiene factors and motivator factors. Hygiene factors are those needs that support individuals' basic functioning (cf., physiological and safety needs described by Maslow, 1943) while hygiene factors address higher-order needs (cf., esteem and self-actualization needs described by Maslow, 1943). In short, Herzberg (1966) proposed that while the presence of hygiene factors has minimal impact on job satisfaction, their absence

decreases satisfaction. Similarly, while the absence of motivator factors does not decrease satisfaction, their presence increases it.

Therefore, it may be possible that justice and injustice are different phenomena, at least in a descriptive sense. For example, it is possible that negative experiences with administrative policies may lead to perceived injustice while positive administrative policy experiences in no way increase perceptions of justice. In fact, in such a case the fairest experience an individual might have with an administrative policy is simply one that is not unfair. Similarly, while even minimal recognition for an achievement may lead to perceptions of justice, the absence of such recognition may be less likely to give rise to perceptions of injustice. Given the conceptual relationship between satisfaction and organizational justice (cf., Cropanzano & Greenberg, 1997), such results may not be surprising.

However, the current evidence of a distributive injustice factor as separate from the distributive justice factor should be considered only tentative support for this distinction. Specifically, because the majority of items included in Study I were drawn directly from the existing literature, few, if any, of the items have perfectly contrasting items. As a result, the presence of the distributive injustice factor may, in part, represent a negative wording factor. To fully examine the presence of a distributive injustice factor, future research should evaluate the factor structure of organizational justice when perfectly contrasting items are included. For example, both a positively worded item (e.g., “My manager was consistent in applying company policies and procedures to all employees.”) and a corresponding negatively worded item (e.g., not consistent in applying company policies and procedures to all employees.”) should be included in future analyses to more directly evaluate the presence of distinct justice and injustice factors.

Additionally, the strategy adopted by Harvey et al (1985) to evaluate the impact of negative wording items on model fit using the JDS would provide a direct examination of the impact of negative wording items. Specifically, Harvey et al (1985) compared fit using confirmatory factor analysis for models that did and did not have an artifactual negative wording

factor. Unfortunately, conducting a similar type of analysis is impossible on the current exploratory factor analysis results because all negative wording items loaded on one and only one factor, rendering the partitioning of variance between relevant and irrelevant sources impossible.

However, several facts contradict the interpretation of the distributive injustice factor as simply an item wording artifact. For example, while it is true that no perfectly contrasting items were included in the current analysis, the set of items did include multiple positive and negative items that were largely contrasting. Specifically, many positive items (e.g., “It seemed that my manager was sensitive to how decisions he or she made would affect me.”) were in great contrast to specific negative items (e.g., “When decision were made concerning me, I often felt let down by my manager.”). Thus, it seems likely that the wording of individual items was sufficiently variable to discount a strictly artifactual explanation of the distributive injustice factor. Thus, while the presence of the distributive injustice factor should be interpreted with some caution, it does not appear to be solely a result of systematic item wording choices. However, future research should clarify the extent to which the distributive injustice factor is simply a negative wording artifact.

It was discussed previously that the poor fit of the a priori models may have resulted from several causes:

1. organizational justice is too context-sensitive to be described by a general model,
2. the a priori models tested in Study I do not sufficiently describe the relationship between justice indicators and constructs, or
3. the task instructions provided insufficient contextual information to render stable judgments.

Many of these propositions are supported by the results of the current studies. For example, the context-sensitivity of organizational justice is clearly supported by the distinct differences in dimensionality across subgroups. Alternatively, the results for the 4-factor + J model of organizational justice in Study I support a perspective on justice that distinguishes between procedures and outcomes or the structural and social components of justice in addition

to a general organizational justice factor. Further, the results of the cross-context analyses provide some initial evidence that dimensionality may be influenced by contextual information. However, while the impact of methodological constraints (e.g., wording effects, item parceling strategies, task instructions) can not be ruled out, their impact appears to be minimal given the overall discrepancy between the five-factor model and any of the theoretical models of organizational justice.

The second important outcome of this study is the recognition that despite the overall exploratory model the additional analyses evaluating measurement stability uncovered differences in the structure of organizational justice across subgroups. While the structure of the overall analyses was generally replicated in the sample of high satisfaction respondents, all other subgroups produced models that varied significantly and meaningfully from the overall structure. For example, the low satisfaction respondents failed to distinguish between the different structural forms of justice by combining procedural and distributive information into a single dimension. On the other hand, low satisfaction respondents also dimensionalized injustice more finely than any other group, distinguishing between outcome-oriented and interpersonal-oriented injustice items. Because of the negative experiences seemingly associated with dissatisfaction, injustice may also be more salient for individuals low in satisfaction. As a result, these individuals may attend more closely to items addressing injustice. These results are consistent with a resource model of attention (e.g., Kahneman, 1973) in which limited cognitive resources are allocated to information according to its saliency.

Alternatively, the student sample delineated among the procedural, distributive (injustice) and interpersonal aspects of justice generally consistent with Bies and Moag's (1986) three-factor model while the organizational sample distinguished between distributive injustice and the two forms of interactional justice (informational and interpersonal) suggested by Greenberg's (1993b) four-factor model. These differences may have results from differential amounts of work experience. For example the professionally-employed individuals in the organizational sample may attend to interpersonal information more closely because their work requires a higher level of

interpersonal interaction and may be based on less abstract and more well-conceptualized information than the students' experiences.

Finally, the results of the cross-context analyses in Study II provide tentative evidence that organizational justice is somewhat stable across work contexts, at both the item and construct level. However, several important methodological differences between Study I and Study II should be noted. First, the item format in Study II provided contextual information that directly corresponded with the factor structure in both contexts. That is, participants in Study II responded to items in relation to procedures, outcomes and interpersonal treatment and the exploratory factor analysis recovered separate factors for each of these components of justice. Further, cross-context stability was evaluated using within-subjects data that was collected during a single administration. Thus, it is not surprising that participants responded to the same items stems in the same way in both contexts given that all items were presented in the same administration. Therefore, the evidence of cross-context stability should be considered an upper-bound, best case estimate of the actual stability of these constructs across contexts.

The overriding purpose of this project was to develop a set of item stems that were stable and valid across contexts. Items of this type allow researchers to create what Greenberg (1993b) refers to as the “customized application of a standardized measure” (p. 255) in different contexts and thereby evaluate models of justice that transcend any single context. However, based on the results described above, it is clear that, at both the item and the construct level, organizational justice is a dynamic construct that does not lend itself to evaluation against traditional measurement criteria. As a result, developing a global measure is problematic without additional evidence of stability at both the item and the construct level. In fact, the results of this study suggest that organizational justice may be difficult to operationalize as a global construct. Rather, different groups may conceptualize and dimensionalize organizational justice differently. Thus, the proposed analyses designed to develop and validate a global measure of organizational justice were not fully carried out.

Instead, a set of recommendations for researchers interested in measuring organizational justice is proposed based on the results of the current studies. First, it is clear that none of the currently-proposed theoretical models of organizational justice dimensionality can account for the exploratory structure described in Study I. However, the four-factor + J, the just-unjust + J or the exploratory (procedural justice, distributive justice, distributive injustice) models may be useful as a starting point for developing new measures of justice. However, the question remains about which of these three models best describes the dimensionality of organizational justice. Clearly, the current results can not definitively answer this question. Instead, future research addressing this questions could include a laboratory study in which participants complete a four-factor in relation to justice and injustice and both toward a manager and an organization. Future research should investigate the extent to which the observed cross-loadings are present in other samples and contexts.

Importantly, however, the results of this study suggest that the dimensionality of organizational justice appears to be dependent on characteristics of the specific sample of respondents and the context provided by the items, so it is critically important for researchers to develop a clear understanding of the characteristics of both the sample and the work context in which their research is conducted. Study I identified two sources of potentially systematic variation in justice perceptions (i.e., job satisfaction, work experience). Researchers interested in measuring organizational justice should always measure these, and other potential moderators of justice dimensionality, so that their impact on perceptions of justice can be accurately modeled. Further, researchers should continue to develop a more thorough understanding of organizational justice's location in the nomological network so that these additional moderators can be discovered and controlled.

However, given the item- and construct-level instability of organizational justice demonstrated in Study I, developing items that generalize across subgroups may be difficult because item loadings appear to fluctuate greatly. The one exception to this robust finding is that the same items consistently loaded on the distributive injustice factor across all subgroups. Thus, it may be possible to develop generalizable items that address this component of justice.

However, future research should systematically examine the impact of contextual information on the stability of organizational justice dimensionality in a between-subjects design. Further, the presence of a distributive injustice factor should be evaluated on a set of more directly contrasting items.

In sum, researchers should be aware that the meaningful interpretation of organizational justice research is predicated on an extremely thorough understanding of the characteristics of both the sample and the context in which the research is carried out. However, barring evidence that a stable factor structure underlying perceptions of organizational justice can be uncovered using the strategies described above, the “customized application of a standardized measure” (Greenberg, 1993; p. 255) of organizational justice is difficult and may be misleading.

References

- Adams, J.S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.). Advances in experimental social psychology(Vol. 2, pp. 267-299). New York: Academic Press.
- Akaike, H. (1973). Information theory and an extension of the maximum likelihood principle. In B.N. Petrov & F. Csaki (Eds.). Second International Symposium on Information Theory. Budapest: Akademiai Kiado.
- Alexander & Ruderman, M. (1987). The role of procedural and distributive justice in organizational life. Social Justice Research, 1, 177-198.
- Bies, R.J. & Moag, J.S. (1986). Interactional justice: Communication criteria of fairness. In R.J. Lewicki, B.H. Sheppard & B.H. Bazerman (Eds.). Research on negotiation in organizations (Vol. 1). Greenwich, CT: JAI Press.
- Bentler, P.M. (1990). Comparative fit indices in structural models. Psychological Bulletin, 107, 238-246.
- Bollen, K.A. (1989a). A new incremental fit index for general structural equation models. Sociological Methods and Research, 17, 303-316.
- Bollen, K.A. (1989b). Structural equations with latent variables. New York: Wiley.
- Bollen, K.A. & Long, J.S. (1993). Testing structural Equation Models. Thousand Oaks, CA: Sage.
- Borman, W.C., Dorsey, D. & Ackerman, L. (1992). Time-spent responses as time allocation strategies: Relations with sales performance in a stockbroker sample. Personnel Psychology, 45, 763-777.

Brockner, J. & Wiesenfeld, B.M. (1996). An integrative framework for explaining reactions to decisions: The interactive effects of outcomes and procedures. Psychological Bulletin, 120, 189-208.

Browne, M.W. & Cudeck, R. (1989). Single sample cross-validation indices for covariance structures. Multivariate Behavioral Research, 24, 445-455.

Browne, M.W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds.). Testing Structural Equation Models. Thousand Oaks, CA: Sage.

Cascio, W.F. (1991). Applied Psychology in Personnel Management (4 ed.). Engelwood Cliffs, NJ: Prentice Hall.

Ceci, S.J. (1996). On Intelligence. Cambridge, MA: Harvard University Press.

Cohen, J. (1994). The earth is round ($p < .05$). American Psychologist, 49, 997-1003.

Comrey, A.L. & Lee, H.B. (1992). A First Course in Factor Analysis (2 ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cropanzano, R. & Greenberg, J. (1997). Progress in organizational justice: Tunneling through the maze. In C.L. Cooper & I.T. Robertson (Eds.). International Review of Industrial and Organizational Psychology (Vol. 12). New York: Wiley and Sons.

Dailey, R.C. & Kirk, D.J. (1992). Distributive and procedural justice as antecedents of job dissatisfaction and intent to turnover. Human Relations, 45, 305-317.

DeVellis, R.F. (1991). Scale Development: Theory and Applications.(Vol. 26. Applied Social Science Research Methods). Newbury Park, CA: Sage.

Folger, R. (1986). Rethinking equity theory: A referent cognitions model. In H.W. Bierhoff, R.L. Cohen & J. Greenberg (Eds.). Justice in social relations (pp. 145-162). New York: Plenum.

Folger, R. & Konovsky, M. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. Academy of Management Journal, *32*, 115-130.

Ghiselli, E.E. , Campbell, J.P. & Zedeck, S. (1981). Measurement Theory for the Behavioral Sciences. New York: W.H. Freeman & Company.

Gilliland, S.W. (1993). The perceived fairness of selection systems: An organizational justice perspective. Academy of Management Review, *18*, 694-734.

Gilliland, S.W. (1994). Effects of procedural and distributive justice on reactions to a selection system. Journal of Applied Psychology, *79*, 691-701.

Gilliland, S.W. & Honig, H. (1994). Development of the selection fairness survey. Poster presented at the annual meeting of the Society for Industrial and Organizational Psychology. Nashville, TN.

Gorsuch, R.L. (1983). Factor Analysis (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Greenberg, J. (1986). Determinants of perceived fairness of performance evaluations. Journal of Applied Psychology, *71*, 340-342.

Greenberg, J. (1987a). Reactions to procedural injustice in payment distributions: Do the means justify the ends? Journal of Applied Psychology, *72*, 55-61.

Greenberg, J. (1987b). A taxonomy of organizational justice theories. Academy of Management Review, *12*, 9-22.

Greenberg, J. (1988). Equity and workplace status: A field experiment. Journal of Applied Psychology, 73, 606-613.

Greenberg, J. (1989). Cognitive reevaluation of outcomes in response to underpayment inequity. Academy of Management Journal, 32, 174-184.

Greenberg, J. (1990a). Employee theft as a reaction to underpayment inequity: The hidden cost of pay cuts. Journal of Applied Psychology, 75, 561-568.

Greenberg, J. (1990b). Organizational justice: Yesterday, today and tomorrow. Journal of Management, 16, 399-432.

Greenberg, J. (1991). Using explanations to manage impressions of performance appraisal fairness. Employee Responsibilities and Rights Journal, 4, 51-60.

Greenberg, J. (1993a). Justice and organizational citizenship: A commentary on the state of the science. Employee Responsibilities and Rights Journal, 6, 249-256.

Greenberg, J. (1993b). The social side of fairness: Interpersonal and informational classes of organizational justice. In R. Cropanzano (Ed.), Justice in the workplace: Approaching fairness in human resource management. Hillsdale, NJ: Lawrence Erlbaum Associates.

Greenberg, J. (1996). The quest for justice on the job: Essays and experiments. Thousand Oaks, CA: Sage.

Greenberg, J. & Folger, R. (1983). Procedural justice, participation and the fair process effect in groups and organizations. In P.B. Paulus (Ed.), Basic Group Processes, 235-256. New York: Springer-Verlag.

Harman, H.H. (1976). Modern Factor Analysis (3rd ed.). Chicago: University of Chicago Press.

Harvey, R.J., Billings, R.S. & Nilan, K.J. (1985). Confirmatory factor analysis of the Job Diagnostic Survey: Good news and bad news. Journal of Applied Psychology, 70, 461-468.

Hauenstein, N.M.A., McGonigle, T. & Flinder, S. (1997). Meta-analysis of the relationship between procedural and distributive justice. Poster presented at the annual meeting of the Society for Industrial and Organizational Psychology. St. Louis, MO.

Hemmelgarn, A.L., James, L.R., Ladd, R.T. & Mitchell, T.R. (1995). Testing for cross-situational consistency: A confirmatory factor analytic approach. Journal of Management, 21, 121-139.

Herzberg, F. (1966) Work and the Nature of Man. Cleveland, OH: World Publishing.

Homans, G.C. (1961). Social behavior: Its elementary forms. New York: Harcourt, Brace & World.

Hoyle, R.H. & Panter, A.T. (1995). Writing about structural equation models. In R.H. Hoyle (Ed.). Structural equation modeling: Concepts, issues and applications. Thousand Oaks, CA: Sage.

Hu, L. & Bentler, P.M. (1995). Evaluating model fit. In R.H. Hoyle (Ed.). Structural Equation Modeling: Concepts, Issues and Applications. Thousand Oaks, CA: Sage.

Joreskog, K.G. (1969). A general approach to confirmatory maximum likelihood factor analysis. Psychometrika, 34, 183-202.

Joreskog, K.G. & Sorbom, D. (1984). LISREL VI User's Guide (3rd ed.). Mooresville, IN: Scientific Software.

Joreskog, K.G. & Sorbom, D. (1989). LISREL 7: A guide to the program and applications. Chicago: SPSS, Inc..

Joreskog, K.G. & Sorbom, D. (1993a). PRELIS (Version 2.12A) [Computer software]. Chicago: Scientific Software International.

Joreskog, K.G. & Sorbom, D. (1993b). LISREL (Version 8.12A) [Computer software]. Chicago: Scientific Software International.

Kahneman, D. (1973). Attention and effort. Engelwood Cliffs, NJ: Prentice-Hall.

Karambayya, R. & Brett, J.M. (1989). Managerial third parties: Intervention strategies, process and consequences. In J. Folger & T. Jones (Eds.), New directions in mediation: Communication research and perspectives (pp. 175-192). Thousand Oaks, CA: Sage.

Konovsky, M.A. & Cropanzano, R. (1991). The perceived fairness of employee drug testing as a predictor of employee attitudes and job performance. Journal of Applied Psychology, 76, 689-707.

Lamon, S.J. (1997). Definition and measurement of affective variables: Theoretical and methodological considerations. Psychological Reports, 81, 864-866.

Lerner, M.J. (1965). Evaluation of performance as a function of performer's reward and attractiveness. Journal of Personality and Social Psychology, 1, 355-360.

Lerner, M.J. (1982). The justice motive in human relations and the economic model of man: A radical analysis of facts and fiction. In V. Derlega & J. Grezlak (Eds.), Cooperation and helping behavior: Theories and research (pp. 42-65). New York: Academic Press.

Leventhal, G.S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationships. In K. Gergen, M. Greenberg & R. Willis (Eds.). Social Exchange: Advances in Theory and Research. New York: Plenum.

Leventhal, G.S., Karuza, J. & Fry, W.R. (1980). Beyond fairness: A theory of allocation preference. In G. Mikula (Ed.). Justice and social interaction (pp. 167-218). New York: Springer-Verlag.

Lind, E.A. & Tyler, T.R. (1988). The social psychology of procedural justice. New York: Plenum.

Lindell, M.K., Clause, C.S., Brandt, C.J. & Landis, R.S. (1998). Relationship between organizational context and job analysis task ratings. Journal of Applied Psychology, 83, 769-776.

Lorenz, C. (1987). The structure of the spatial domain: An analysis of individual differences. Unpublished doctoral dissertation, Cornell University.

MacCallum, R.C., Widaman, K.F., Zhang, S. & Hong, S. (1999). Sample size in factor analysis. Psychological Methods, 4, 84-99.

Marsh, H.W. (1994). Confirmatory factor analysis models of factorial invariance: A multifaceted approach. Structural Equation Modeling, 1, 5-34.

Marsh, H.W., Anthill, J.K. & Cunningham, J.D. (1989). Masculinity, femininity and androgyny: Bipolar and independent constructs. Journal of Personality, 57, 625-663.

- Maslow, A.H. (1943). A theory of motivation. Psychological Review, *50*, 370-396.
- Mikula, G., Petrick, B. & Tanzer, N. (1990). What people regard as unjust: Types and structures of everyday experiences of injustice. European Journal of Social Psychology, *20*, 133-149.
- Moorman, R.H. (1991). Relationship between organizational justice and organizational citizenship behaviors: Do fairness perceptions influence employee citizenship? Journal of Applied Psychology, *76*, 845-855.
- Niehoff, B.P. & Moorman, R.M. (1993). Justice as a mediator of the relationship between methods of monitoring and organizational citizenship behavior. Academy of Management Journal, *36*, 527-566.
- Quinn, R.P. & Staines, G.L. (1979). The 1977 Quality of Employment Survey. Ann Arbor, MI: Institute for Social Research, University of Michigan.
- Rubin, Z. & Peplau, L.A. (1975). Who believes in a just world? Journal of Social Issues, *31*, 65-89.
- Scarlicki, D.P. & Folger, R. (1997). Retaliation in the workplace: The roles of distributive, procedural and interactional justice. Journal of Applied Psychology, *82*, 434-443.
- Schmitt, N. & Cohen, S.A. (1989). Internal analysis of task ratings by job incumbents. Journal of Applied Psychology, *74*, 96-104.
- Schwab, D. (1980). Construct validity in organizational behavior. In B. M. Staw and L.L. Cummings (Eds.), Research in Organizational Behavior (Vol. 2). Greenwich, CT: JAI Press.

Sheppard, B.H. & Lewicki, R.J. (1987). Toward general principles of managerial fairness. Social Justice Research, 1, 161-176.

Smither, J.W., Reilly, R.R., Milsap, R.E., Perlman, K. & Stoffey, R.W. (1993). Applicants' reactions to selection procedures. Personnel Psychology, 46, 49-75.

Steiger, J.H. (1990). Structural model evaluation and modification: An interval estimation approach. Multivariate Behavioral Research, 25, 173-180.

Stouffer, S.A., Suchman, E.A., DeVinney, L.C., Star, S.A. & Williams, R.M. (1949). The American soldier: Adjustment during Army life (Vol. 1). Princeton, NJ: Princeton University Press.

Sweeney, P.D. & McFarlin, D.B. (1993). Workers' evaluations of the "ends" and the "means": An examination of four models of distributive and procedural justice. Organizational Behavior and Human Decision Processes, 55, 23-40.

Tanaka, J.S. (1993). Multifaceted conceptions of fit in structural equation models. In K.A. Bollen & J.S. Long (Eds.). Testing Structural Equation Models. Thousand Oaks, CA: Sage.

Thibaut, J. & Walker, L. (1975). Procedural justice: A psychological analysis. Hillsdale, NJ: Erlbaum.

Thissen, D. (1991). MULTILOG: Multiple, categorical item analysis and test scoring using item response theory (Version 6.0). Chicago: Scientific Software.

Tryon, W.W. (1996). Instrument driven theory. Journal of Mind and Behavior, 17, 21-30.

Tyler, T.R. (1988). What is procedural justice? Law and Society Review, 22, 301-335.

Tyler, T.R. (1991). Using procedures to justify outcomes: Testing the viability of procedural justice strategy for managing conflict and allocating resources in work organizations. Basic and Applied Social Psychology, 12, 259-279.

Tyler, T. R. (1994). Psychological models of the justice motive: Antecedents of distributive and procedural justice. Journal of Personality and Social Psychology, 67, 850-863.

Tyler, T. & Caine, A. (1981). The role of distributive and procedural fairness in the endorsement of formal leaders. Journal of Personality and Social Psychology, 41, 643-665.

Van den Bos, K., Vermunt, R. & Wilke, H.A.M. (1997). Procedural and distributive justice: What is fair depends more on what comes first than on what comes next. Journal of Personality and Social Psychology, 72, 95-104.

Veres, J.G., Green, S.B. & Boyles, W.R. (1991). Racial differences on job analysis questionnaires: An empirical study. Public Personnel Management, 20, 135-144.

West, S.G., Finch, J.F. & Curran, P.J. (1995). Structural equation modeling with nonnormal variables: Problems and remedies. In R.H. Hoyle (Ed.). Structural Equation Modeling: Concepts, Issues and Applications. Thousand Oaks, CA: Sage.

Appendix A:
Scale Used in Study I

Justice in the Workplace

The purpose of the following items is to examine employees' attitudes toward their experiences at work. Therefore, when completing the scale below, please think about a job you have held for at least 3 months during the last year. Answer all questions in reference to that job as accurately as possible. If a questions does not relate to your job experiences, please do not answer it.

Using the OPSCAN form provided, please use the following scale to rate the following questions:

1 = strongly disagree 3 = neither agree nor disagree 5 = strongly agree
2 = disagree 4 = agree

1. My manager was consistent in applying company policies and procedures to all employees.
2. My manager seemed to have favorite employees.
3. My manager seemed to make rules and decisions that were in the best interest of the employees.
4. It was easy to get my manager to bend the rules.
5. My manager asked for employee input into new policies and procedures.
6. Changes were made to the company policies and procedures without discussing it with employees.
7. My manager was willing to discuss my work performance with me candidly.
8. My manager allowed us to appeal our performance evaluations.
9. My manager asked for our input on our performance evaluations.
10. My manager had adequate opportunity to judge my performance prior to evaluating it.
11. My manager answered my questions in a timely manner.
12. My manager encouraged us to ask questions if we did not understand something.
13. My manager did not always give us the full story about decisions he or she made.
14. We were asked our opinion about the effects of a change in policies and procedures.
15. My manager tended to blame his or her mistakes on others.
16. My manager seemed to assign employees to do his or her dirty work.
17. My manager punished employees who did not complete their work.
18. My manager rewarded employees who performed their jobs adequately.

19. My manager was consistent in applying company policies and procedures over time.
20. In making decisions, my manager behaved ethically.
21. My manager used consistent standards to evaluate employee performance.
22. When making decisions, my manager applied consistent standards across all employees.
23. I can see a relationship between how my performance is evaluated and performance on the job.
24. I feel that the decision making processes in this company minimized the favoritism that can sometimes be a problem in organizations.
25. I feel that my manager's decisions are sometimes influenced by personal biases.
26. When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.
27. Decision making procedures in this company are as fair as possible.
28. When I was applying for the job, the manager asked me irrelevant or inappropriate questions.
29. Procedures for evaluating me accurately got at what I can and can't do well.
30. Procedures for hiring me accurately got at what I do and don't know.
31. There seems to be a lot of bias and discrimination in this company.
32. In making decisions, my manager collected accurate and complete information.
33. This company seems to pay employees with little regard for how well they perform.
34. My manager consistently rewards high performers.
35. My manager consistently punishes poor performers.
36. My manager probably paid me more than I deserved.
37. The outcome of most decisions in this company seem to be fair.
38. Considering how hard I worked, I was rewarded fairly.
39. I received adequate recognition and rewards from my manager.
40. I was paid significantly less than other employees in similar job in this company.
41. I could probably have received a more appropriate salary at another company.
42. I could probably have received more appropriate assignments at another company.
43. My work assignments/workload seemed fair to me.
44. I'm sure that the decision to hire me was a fair one.
45. In general, I would have made the same decisions my manager made concerning me.

46. Overall, the rewards I received at this company seemed fair.
47. People at this company get what they deserve.
48. Most of the decisions made at this company seem fair considering the circumstances.
49. Compared to my pay, my manager seemed to make too much money.
50. When I consider my responsibilities, I was not fairly rewarded.
51. When I consider the stress level at my job, I was not fairly rewarded.
52. When I consider my experience level, I was not fairly rewarded.
53. My manager took time to explain why decisions concerning me were made.
54. It seemed that my manager was sensitive to how decisions he or she made would affect me.
55. When informing me of decisions, my manager was always polite.
56. My manager never took time to apologize for decisions that negatively impacted me.
57. When decision were made concerning me, I often felt let down by my manager.
58. Any decisions made concerning me were explained very clearly by my manager.
59. The justifications for decisions made concerning me seemed adequate.
60. When my manager made decisions that negatively impacted me, he or she expressed regret.
61. It took a long time for my manager to let me know the outcome of decisions made about me.
62. When decisions were made that affected me, my manager was sensitive to my personal needs.
63. When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.
64. My manager didn't seem to care how decisions he or she made affected me.
65. When I asked my manager about a decision he or she made that affected me, he or she was often evasive.
66. When explaining decisions that affected me, my manager treated me more as a friend than an employee.
67. My manager usually apologized when a decisions he or she made negatively affected me.
68. My manager told me how he or she made decisions that affected me.
69. I never had a clear understanding of how decisions that affected me were made.
70. I understood the process by which my manager made decisions.
71. I usually felt that my manager had ulterior motives for explaining decisions to me.

72. The explanations my manager offered of how he or she made decisions that affected me usually made sense.
73. The way my manager made decisions often seemed arbitrary.
74. I usually understood my manager's motivation for making decisions that affected me.
75. My manager's explanations for how decisions were made usually seemed genuine.
76. The way my manager made decisions usually seemed reasonable.
77. Given the way decisions affected me, the explanations my manager gave for how the decisions were made were reasonable.
78. Given the constraints my manager was under when making a decision that affected me, the way he or she made the decision was fair.

Instructions: Using the scale below, please answer the following questions concerning the job you selected.

1 = Very Likely	3 = Neither Likely Nor Unlikely	5 = Very Unlikely
2 = Somewhat Likely	4 = Somewhat Unlikely	

79. All in all, how likely are you to say you are satisfied with the outcomes (i.e., pay, promotion, new skills, etc.) you received in this job.?
80. If you were free to take any job you are qualified for, how likely would you be to choose one that would guarantee you similar outcomes (i.e., pay, promotion, new skills, etc.)?
81. Knowing what you know now about the outcome of the job (i.e., pay, promotion, new skills, etc.), if you had it to do over again how likely would you be to take the job again?
82. In general, how likely are you to say that the outcomes of the job (i.e., pay, promotion, new skills, etc.) measure up to the outcomes you expected when you decided to take it?
83. If a friend of yours told you he or she was interested in applying for a job there, based on the outcomes you received (i.e., pay, promotion, new skills, etc.), how likely would you be to recommend it?
84. All in all, how likely are you to say you are satisfied with the policies and procedures at your job?
85. If you were free to take any job you are qualified for, how likely would you be to choose one with similar policies and procedures?

86. Knowing what you know now about the policies and procedures used at your job, if you had it to do over again how likely would you be to take the job again?

87. In general, how likely are you to say that the policies and procedures at the job measure up to the procedures you expected when you decided to take it?

88. If a friend of yours told you he or she was interested in applying for a job there, based on the policies and procedures you experienced how likely would you be to recommend it?

Finally, please provide the following information about yourself:

89. Gender

1 = female

2 = male

90. Age

1 = under 20

3 = 30-39

5 = 50 or over

2 = 20-29

4 = 40-49

91. Total Amount of Work Experience

1 = less than 6 months

3 = 1-2 years

5 = 6 or more years

2 = 6 months-1 year

4 = 2-5 years

92. I am currently employed.

1. = yes

2 = no

Appendix B:
Organizational Justice Item-Construct Linkage Task

Organizational Justice Item-Construct Linkage Task

Instructions: The purpose of the following exercise is to link items to the various sub-constructs comprising organizational justice. In the current context, four sub-constructs are of interest:

1. **Systemic (Procedural) Justice** - refers to the principles and rules followed in making a decision.
2. **Configural (Distributive) Justice** - concerns the distributive rules (e.g., equity, equality , need) invoked when making an allocation decision.
3. **Informational Justice** – the social component of procedural justice, most often manifest as information about the process by which a decision was made.
4. **Interpersonal Justice** - the social determinants of distributive justice, or the expression of concern for the effects that a decision may have on an individual (e.g., politeness, altruism, remorse).

Therefore, for each of the 47 items listed on the following page, please determine the sub-construct you think best describes the item and mark that in the “Category” column.

Items Designed to Measure Organizational Justice

Category	Item
	Any decisions made concerning me were explained very clearly by my manager.
	Considering how hard I worked, I was rewarded fairly.
	Decision making procedures in this company are as fair as possible.
	I could probably have received a more appropriate salary at another company.
	I could probably have received more appropriate assignments at another company.
	I received adequate recognition and rewards from my manager.
	I understood the process by which my manager made decisions.
	I was paid significantly less than other employees in similar job in this company.
	In general, I would have made the same decisions my manager made concerning me.
	In making decisions, my manager behaved ethically.
	In making decisions, my manager collected accurate and complete information.
	It seemed that my manager was sensitive to how decisions he or she made would affect me.
	It took a long time for my manager to let me know the outcome of decisions made about me.
	It was easy to get my manager to bend the rules.
	Most of the decisions made at this company seem fair considering the circumstances.
	My manager answered my questions in a timely manner.
	My manager asked for employee input into new policies and procedures.
	My manager consistently rewards high performers.
	My manager had adequate opportunity to judge my performance prior to evaluating it.
	My manager rewarded employees who performed their jobs adequately.
	My manager seemed to make rules and decisions that were in the best interest of the employees.
	My manager told me how he or she made decisions that affected me.
	My manager took time to explain why decisions concerning me were made.
	My manager used consistent standards to evaluate employee performance.
	My manager was consistent in applying company policies and procedures over time.
	My manager was consistent in applying company policies and procedures to all employees.

My manager's explanations for how decisions were made usually seemed genuine.
My work assignments/workload seemed fair to me.
Overall, the rewards I received at this company seemed fair.
People at this company get what they deserve.
Procedures for evaluating me accurately got at what I can and can't do well.
Procedures for hiring me accurately got at what I do and don't know.
The justifications for decisions made concerning me seemed adequate.
The outcome of most decisions in this company seem to be fair.
The way my manager made decisions usually seemed reasonable.
There seems to be a lot of bias and discrimination in this company.
This company seems to pay employees with little regard for how well they perform.
When decision were made concerning me, I often felt let down by my manager.
When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.
When decisions were made that affected me, my manager was sensitive to my personal needs.
When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.
When explaining decisions that affected me, my manager treated me more as a friend than an employee.
When I consider my experience level, I was not fairly rewarded.
When I consider my responsibilities, I was not fairly rewarded.
When informing me of decisions, my manager was always polite.
When making decisions, my manager applied consistent standards across all employees.
When my manager made decisions that negatively impacted me, he or she expressed regret.

Appendix C:
Items Used in Cross-Context Analyses

Justice in the Workplace

The purpose of the following items is to examine your attitudes toward experiences at work. Specifically, the following items focus on your experiences with two aspects of your job: 1) the hiring process and 2) the performance appraisal process.

Therefore, when completing the scale below, please think about one job you held (or currently hold) for at least 3 months. Answer all questions in reference to that job as accurately as possible.

Using the OPSCAN form provided, please use the following scale to rate the questions below:

1 = strongly disagree

3 = neither agree nor disagree

5 = strongly agree

2 = disagree

4 = agree

The procedures used to hire me for this job...

1. were consistently applied to all applicants.
2. were in the best interest of applicants.
3. were altered for my individual needs.
4. allowed me to have input into the application process.
5. allowed the organization to adequately judge my performance prior to evaluating me.
6. allowed my questions to be answered quickly and accurately.
7. ensured that employment was offered to applicants who deserved it.
8. were ethical.
9. were consistently applied to evaluating applicants' performance.
10. considered factors beyond my control that influenced my performance.
11. were as fair as possible.
12. accurately got at what I can and can not do well.
13. accurately got at what I do and do not know.
14. allowed the organization to collect accurate and complete information about me.
15. were biased and discriminatory.

The outcome of the hiring process...

16. demonstrated that the organization hires applicants with little regard for how well they perform.
17. shows that the organization consistently hires high performers.
18. seems fair.
19. meant that I was paid significantly less than other employees with similar jobs in the organization.
20. meant that I could receive a more appropriate salary at another organization.
21. meant that I could receive more appropriate assignments at another organization.
22. allowed me to receive fair work assignments.
23. was the same one I would have made if I were the organization.
24. shows that people at this organization get what they deserve.
25. shows that most of the decisions made at this company are fair.
26. was not fair, considering my responsibilities.
27. was not fair, considering my experience level.

In explaining the outcome of the hiring decision to me, the recruiter...

- | | |
|-----|--|
| 28. | took the time to explain why decisions concerning me were made. |
| 29. | was sensitive to how decisions the organization made affected me. |
| 30. | was always polite to me. |
| 31. | frequently let me down. |
| 32. | was very clear. |
| 33. | provided me with adequate justifications for the decisions that were made. |
| 34. | expressed regret when decisions negatively affected me. |
| 35. | delayed giving me information. |
| 36. | was sensitive to my personal needs. |
| 37. | was aware of my rights as an applicant. |
| 38. | treated me more as a friend than as an applicant. |
| 39. | told me how decisions were made that affected me. |
| 40. | helped me understand the process by which decisions were made. |
| 41. | provided me with genuine explanations for how decisions were made. |
| 42. | made decisions in a reasonable way. |

The performance appraisals process at work...

- | | |
|-----|---|
| 43. | was consistently applied to all employees. |
| 44. | was in the best interest of all employees. |
| 45. | were altered for my individual needs. |
| 46. | allowed me to have input into the appraisal process. |
| 47. | allowed the organization to adequately judge my performance prior to evaluating me. |
| 48. | allowed my questions to be answered quickly and accurately. |
| 49. | ensured that employees received accurate ratings. |
| 50. | was ethical. |
| 51. | was consistently applied to evaluating employees' performance. |
| 52. | considered factors beyond my control that influenced my performance. |
| 53. | was as fair as possible. |
| 54. | accurately got at what I can and can not do well. |
| 55. | accurately got at what I do and do not know. |
| 56. | allowed the organization to collect accurate and complete information about me. |
| 57. | was biased and discriminatory. |

The outcome of the performance appraisal process...

- | | |
|-----|--|
| 58. | demonstrated that the organization rewards employees with little regard for how well they perform. |
| 59. | shows that the organization consistently rewards high performers. |
| 60. | seems fair. |
| 61. | meant that I was paid significantly less than other employees with similar jobs in the organization. |
| 62. | meant that I could receive a more appropriate salary at another organization. |
| 63. | meant that I could receive more appropriate assignments at another organization. |
| 64. | allowed me to receive fair work assignments. |
| 65. | was the same one I would have made if I were the organization. |
| 66. | shows that people at this organization get what they deserve. |
| 67. | shows that most of the decisions made at this company are fair. |
| 68. | was not fair, considering my responsibilities. |
| 69. | was not fair, considering my experience level. |

In explaining the outcome of the performance appraisal to me, my supervisor...

70. took the time to explain why decisions concerning me were made.
71. was sensitive to how decisions the organization made affected me.
72. was always polite to me.
73. frequently let me down.
74. was very clear.
75. provided me with adequate justifications for the decisions that were made.
76. expressed regret when decisions negatively affected me.
77. delayed giving me information.
78. was sensitive to my personal needs.
79. was aware of my rights as an employee.
80. treated me more as a friend than as an employee.
81. told me how decisions were made that affected me.
82. helped me understand the process by which decisions were made.
83. provided me with genuine explanations for how decisions were made.
84. made decisions in a reasonable way.

Instructions: Using the scale below, please answer the following questions concerning the job you selected.

1 = Very Likely 3 = Neither Likely Nor Unlikely 5 = Very Unlikely
2 = Somewhat Likely 4 = Somewhat Unlikely

85. All in all, how likely are you to say you are satisfied with the outcomes (i.e., pay, promotion, new skills, etc.) you received in this job?
86. If you were free to take any job you are qualified for, how likely would you be to choose one that would guarantee you similar outcomes (i.e., pay, promotion, new skills, etc.)?
87. Knowing what you know now about the outcome of the job (i.e., pay, promotion, new skills, etc.), if you had it to do over again how likely would you be to take the job again?
88. In general, how likely are you to say that the outcomes of the job (i.e., pay, promotion, new skills, etc.) measure up to the outcomes you expected when you decided to take it?
89. If a friend of yours told you he or she was interested in applying for a job there, based on the outcomes you received (i.e., pay, promotion, new skills, etc.), how likely would you be to recommend it?
90. All in all, how likely are you to say you are satisfied with the policies and procedures at your job?
91. If you were free to take any job you are qualified for, how likely would you be to choose one with similar policies and procedures?
92. Knowing what you know now about the policies and procedures used at your job, if you had it to do over again how likely would you be to take the job again?
93. In general, how likely are you to say that the policies and procedures at the job measure up to the procedures you expected when you decided to take it?
94. If a friend of yours told you he or she was interested in applying for a job there, based on the policies and procedures you experienced how likely would you be to recommend it?

Instructions: Using the scale below, indicate the extent to which your manager...

1 = *not at all* 3 = *to a moderate extent* 5 = *to a great extent*
a slight extent 4 = *to a large extent*

- 95. ...was honest and ethical in dealing with me.
- 96. ...gave me an opportunity to express my side.
- 97. ...used consistent standards in evaluating my performance.
- 98. ...considered my views regarding my performance.
- 99. ...gave me feedback that helped me learn how well I was doing.
- 100. ...was completely candid and frank with me.
- 101. ...showed a real interest in trying to be fair.
- 102. ...became thoroughly familiar with my performance.
- 103. ...took into account factors beyond my control.
- 104. ...got input from me before a recommendation.
- 105. ...made clear what was expected of me.
- 106. ...discussed plans or objectives to improve my performance.
- 107. ...obtained accurate information about my performance.
- 108. ...found out how well I thought I was doing my job.
- 109. ...asked for my ideas on what I could do to improve company performance.
- 110. ...frequently observed my performance.
- 111. ...behaved in a way I though was not appropriate.
- 112. ...allowed personal motives or biases to influence recommendations.
- 113. ...was influenced by things that should not have been considered.

Instructions: Using the scale below, indicate how much of an opportunity existed for you to...

1 = *very little* 3 = *some* 5 = *very much*
2 = *little* 4 = *much*

- 114. ...review, with my supervisor, objectives for improvement.
- 115. ...with my supervisor, resolve difficulties about my duties and responsibilities.
- 116. ...find out why I got the size of salary I did.
- 117. ... make an appeal about the size of my salary.
- 118. ...express my feelings to my supervisor about salary decisions.
- 119. ...discuss with my supervisor how my performance was evaluated.
- 120. ...develop, with my supervisor, an action plan for future performance.

Instructions: Using the scale below, please answer the following questions concerning the job you selected.

1 = *strongly disagree* 3 = *neither agree nor disagree* 5 = *strongly agree*
agree 4 = *agree*

- 121. I consider the size of my salary to be fair.
- 122. My salary gave me the full amount I deserved.
- 123. Compared to what I expected, the salary I received was fair.
- 124. The size of my salary was related to my job performance.

Instructions: Using the scale below, please answer the following questions concerning the way you were you selected for this job.

1 = strongly disagree
2 = disagree

3 = neither agree nor disagree
4 = agree

5 = strongly agree

125. The type of questions asked during the selection process were directly related to the job.
126. The selection process was directly relevant to the job because it involved the same things that are required on the job.
127. The questions asked of me during the selection process were neither relevant nor important for the job.
128. The selection process got right down to what I could and could not do.
129. I was given adequate opportunity to demonstrate my skills and abilities.
130. I had control over the factors that influenced my performance during the selection process.
131. During the selection process, I never got the chance to prove myself.
132. I don't think that the selection procedures used can predict whether or not I will be successful on the job.
133. I can see a connection between the selection procedures and performance on the job.
134. I am satisfied with how I was informed of the hiring decision.
135. It took a long time to hear back from the company.
136. I received information on the hiring decision in a timely manner.
137. I was offered an explanation of the types of factors that affected the hiring decision.
138. I received an adequate explanation of how the selection tests would be scored.
139. I was told how selection test scores would be used to make a hiring decision.
140. I was given a reasonable explanation for why the specific selection procedures were used to hire people.
141. I feel the company lied about the selection process and the way they chose people for the job.
142. The company should have been more honest when telling me about the position and my chances of being hired.
143. I was treated honestly and openly during the selection process.
144. People were candid and frank with me during the selection process.
145. They were straightforward and sincere about the job and what it entailed.
146. I was treated with warmth, sincerity and thoughtfulness during the selection process.
147. During the selection process, I feel I was treated more like a number than a human being.
148. The selection process was like an interrogation – the people were cold and rigid.
149. Lack of interactive or two-way communication was a problem during the selection process.
150. I am satisfied with the communication that occurred during the selection process.
151. I was not offered sufficient opportunity to ask questions.
152. In a way I was able to conduct my own interview, asking questions about the job and the company.
153. Some of the questions asked during the selection process were intrusive of my privacy.
154. I was asked questions that were inappropriate or discriminatory.
155. Personal motives or biases appeared to influence the selection process.
156. I think that my hiring decision was affected by special treatment offered to some people.
157. I think some people would distort their responses during the selection process to try to make themselves look better.
158. It would be easy for people to be dishonest when answering questions and make themselves look good.
159. I thought you could beat the tests if you were smart and gave the answers they were looking for.
160. It was obvious how you should respond to some of the questions if you wanted the job.
161. Given my ability and experience, I was not evaluated correctly by the selection process.
162. Given my past experience looking for a job, I feel I received an appropriate evaluation.
163. The outcome of the selection process was not a good reflection of my job capabilities.
164. The results of the selection process were consistent with how I view myself.

Tables

Table 1: Greenberg's (1993b) Taxonomy of Organizational Justice Classes

Focal Determinant	Category of Justice	
	Procedural	Distributive
Structrual	Systemic Justice	Configural Justice
Social	Informational Justice	Interpersonal Justice

Table 2: Demographic Information for Participants in Study 1

Gender			
	AIR	Virginia Tech	Total
Female	42	96	138
Male	66	44	110
Missing	1	0	1
Total	109	140	249

Age			
	AIR	Virginia Tech	Total
under 20	0	45	45
20-29	36	59	95
30-39	34	36	70
40-49	15	0	15
50 or over	24	0	24
Total	109	140	249

Total Work Experience			
	AIR	Virginia Tech	Total
less than 6 months	0	32	32
6 months - 1 year	4	9	13
1-2 years	8	19	27
2-5 years	21	80	101
6 or more years	76	0	76
Total	109	140	249

Table 3: Items Selected for Examination in Study 1

Item
1 My manager was consistent in applying company policies and procedures to all employees.
2 My manager seemed to have favorite employees.
3 My manager seemed to make rules and decisions that were in the best interest of the employees.
4 It was easy to get my manager to bend the rules.
5 My manager asked for employee input into new policies and procedures.
6 Changes were made to the company policies and procedures without discussing it with employees.
7 My manager was willing to discuss my work performance with me candidly.
8 My manager allowed us to appeal our performance evaluations.
9 My manager asked for our input on our performance evaluations.
10 My manager had adequate opportunity to judge my performance prior to evaluating it.
11 My manager answered my questions in a timely manner.
12 My manager encouraged us to ask questions if we did not understand something.
13 My manager did not always give us the full story about decisions he or she made.
14 We were asked our opinion about the effects of a change in policies and procedures.
15 My manager tended to blame his or her mistakes on others.
16 My manager seemed to assign employees to do his or her dirty work.
17 My manager punished employees who did not complete their work.
18 My manager rewarded employees who performed their jobs adequately.
19 My manager was consistent in applying company policies and procedures over time.
20 In making decisions, my manager behaved ethically.
21 My manager used consistent standards to evaluate employee performance.
22 When making decisions, my manager applied consistent standards across all employees.
23 I can see a relationship between how my performance is evaluated and performance on the job.
24 I feel that the decision making processes in this company minimized the favoritism that can sometimes be a problem in organizations.
25 I feel that my manager's decisions are sometimes influenced by personal biases.
26 When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.

Item

- 27 Decision making procedures in this company are as fair as possible.
- 28 When I was applying for the job, the manager asked me irrelevant or inappropriate questions.
- 29 Procedures for evaluating me accurately got at what I can and can't do well.
- 30 Procedures for hiring me accurately got at what I do and don't know.
- 31 There seems to be a lot of bias and discrimination in this company.
- 32 In making decisions, my manager collected accurate and complete information.
- 33 This company seems to pay employees with little regard for how well they perform.
- 34 My manager consistently rewards high performers.
- 35 My manager consistently punishes poor performers.
- 36 My manager probably paid me more than I deserved.
- 37 The outcome of most decisions in this company seem to be fair.
- 38 Considering how hard I worked, I was rewarded fairly.
- 39 I received adequate recognition and rewards from my manager.
- 40 I was paid significantly less than other employees in similar job in this company.
- 41 I could probably have received a more appropriate salary at another company.
- 42 I could probably have received more appropriate assignments at another company.
- 43 My work assignments/workload seemed fair to me.
- 44 I'm sure that the decision to hire me was a fair one.
- 45 In general, I would have made the same decisions my manager made concerning me.
- 46 Overall, the rewards I received at this company seemed fair.
- 47 People at this company get what they deserve.
- 48 Most of the decisions made at this company seem fair considering the circumstances.
- 49 Compared to my pay, my manager seemed to make too much money.
- 50 When I consider my responsibilities, I was not fairly rewarded.
- 51 When I consider the stress level at my job, I was not fairly rewarded.
- 52 When I consider my experience level, I was not fairly rewarded.
- 53 My manager took time to explain why decisions concerning me were made.
- 54 It seemed that my manager was sensitive to how decisions he or she made would affect me.
- 55 When informing me of decisions, my manager was always polite.
- 56 My manager never took time to apologize for decisions that negatively impacted me.

Item
57 When decision were made concerning me, I often felt let down by my manager.
58 Any decisions made concerning me were explained very clearly by my manager.
59 The justifications for decisions made concerning me seemed adequate.
60 When my manager made decisions that negatively impacted me, he or she expressed regret.
61 It took a long time for my manager to let me know the outcome of decisions made about me.
62 When decisions were made that affected me, my manager was sensitive to my personal needs.
63 When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.
64 My manager didn't seem to care how decisions he or she made affected me.
65 When I asked my manager about a decision he or she made that affected me, he or she was often evasive.
66 When explaining decisions that affected me, my manager treated me more as a friend than an employee.
67 My manager usually apologized when a decisions he or she made negatively affected me.
68 My manager told me how he or she made decisions that affected me.
69 I never had a clear understanding of how decisions that affected me were made.
70 I understood the process by which my manager made decisions.
71 I usually felt that my manager had ulterior motives for explaining decisions to me.
72 The explanations my manager offered of how he or she made decisions that affected me usually made sense.
73 The way my manager made decisions often seemed arbitrary.
74 I usually understood my manager's motivation for making decisions that affected me.
75 My manager's explanations for how decisions were made usually seemed genuine.
76 The way my manager made decisions usually seemed reasonable.
77 Given the way decisions affected me, the explanations my manager gave for how the decisions were made were reasonable.
78 Given the constraints my manager was under when making a decision that affected me, the way he or she made the decision was fair.

Note: All items were rated using the following scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree 5 = strongly agree).

Table 4: Items Included in Quinn and Staines (1977) Facet-Free Measure of Satisfaction

Item
1 All in all, how likely are you to say you are satisfied with the outcomes (i.e., pay, promotion, new skills, etc.) you received in this job?
2 If you were free to take any job you are qualified for, how likely would you be to choose one that would guarantee you similar outcomes (i.e., pay, promotion, new skills, etc.)?
3 Knowing what you know now about the outcome of the job (i.e., pay, promotion, new skills, etc.), if you had it to do over again how likely would you be to take the job again?
4 In general, how likely are you to say that the outcomes of the job (i.e., pay, promotion, new skills, etc.) measure up to the outcomes you expected when you decided to take it?
5 If a friend of yours told you he or she was interested in applying for a job there, based on the outcomes you received (i.e., pay, promotion, new skills, etc.), how likely would you be to recommend it?
6 All in all, how likely are you to say you are satisfied with the policies and procedures at your job?
7 If you were free to take any job you are qualified for, how likely would you be to choose one with similar policies and procedures?
8 Knowing what you know now about the policies and procedures used at your job, if you had it to do over again how likely would you be to take the job again?
9 In general, how likely are you to say that the policies and procedures at the job measure up to the procedures you expected when you decided to take it?
10 If a friend of yours told you he or she was interested in applying for a job there, based on the policies and procedures you experienced how likely would you be to recommend it?

Note: All items were rated using the following scale (1 = Very Likely, 2 = Somewhat Likely, 3 = Neither Likely Nor Unlikely, 4 = Somewhat Unlikely, 5 = Very Unlikely).

Table 5: Item-to-Construct Links for Confirmatory Factor Analyses

Item	Construct
1 My manager was consistent in applying company policies and procedures to all employees.	Systemic
3 My manager seemed to make rules and decisions that were in the best interest of the employees.	Systemic
5 My manager asked for employee input into new policies and procedures.	Systemic
6 Changes were made to the company policies and procedures without discussing it with employees.	Systemic
10 My manager had adequate opportunity to judge my performance prior to evaluating it.	Systemic
14 We were asked our opinion about the effects of a change in policies and procedures.	Systemic
20 In making decisions, my manager behaved ethically.	Systemic
21 My manager used consistent standards to evaluate employee performance.	Systemic
22 When making decisions, my manager applied consistent standards across all employees.	Systemic
25 I feel that my manager's decisions are sometimes influenced by personal biases.	Systemic
26 When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.	Systemic
27 Decision making procedures in this company are as fair as possible.	Systemic
29 Procedures for evaluating me accurately got at what I can and can't do well.	Systemic
30 Procedures for hiring me accurately got at what I do and don't know.	Systemic
32 In making decisions, my manager collected accurate and complete information.	Systemic
33 This company seems to pay employees with little regard for how well they perform.	Configural
34 My manager consistently rewards high performers.	Configural
38 Considering how hard I worked, I was rewarded fairly.	Configural
39 I received adequate recognition and rewards from my manager.	Configural
41 I could probably have received a more appropriate salary at another company.	Configural
42 I could probably have received more appropriate assignments at another company.	Configural
43 My work assignments/workload seemed fair to me.	Configural
45 In general, I would have made the same decisions my manager made concerning me.	Configural
46 Overall, the rewards I received at this company seemed fair.	Configural
48 Most of the decisions made at this company seem fair considering the circumstances.	Configural
50 When I consider my responsibilities, I was not fairly rewarded.	Configural

Item	Construct
51 When I consider the stress level at my job, I was not fairly rewarded.	Configural
52 When I consider my experience level, I was not fairly rewarded.	Configural
4 It was easy to get my manager to bend the rules.	Informational
11 My manager answered my questions in a timely manner.	Informational
13 My manager did not always give us the full story about decisions he or she made.	Informational
18 My manager rewarded employees who performed their jobs adequately.	Informational
58 Any decisions made concerning me were explained very clearly by my manager.	Informational
59 The justifications for decisions made concerning me seemed adequate.	Informational
68 My manager told me how he or she made decisions that affected me.	Informational
69 I never had a clear understanding of how decisions that affected me were made.	Informational
70 I understood the process by which my manager made decisions.	Informational
2 My manager seemed to have favorite employees.	Interpersonal
7 My manager was willing to discuss my work performance with me candidly.	Interpersonal
53 My manager took time to explain why decisions concerning me were made.	Interpersonal
54 It seemed that my manager was sensitive to how decisions he or she made would affect me.	Interpersonal
55 When informing me of decisions, my manager was always polite.	Interpersonal
60 When my manager made decisions that negatively impacted me, he or she expressed regret.	Interpersonal
62 When decisions were made that affected me, my manager was sensitive to my personal needs.	Interpersonal
66 When explaining decisions that affected me, my manager treated me more as a friend than an employee.	Interpersonal
67 My manager usually apologized when a decisions he or she made negatively affected me.	Interpersonal

Table 6: Results of Study 1 Item Screening

Item	N	Min	Max	SD	Mean
1 My manager was consistent in applying company policies and procedures to all employees.	235	1	5	1.18	2.94
2 My manager seemed to have favorite employees.	236	1	5	1.14	2.89
3 My manager seemed to make rules and decisions that were in the best interest of the employees.	245	1	5	1.05	2.99
4 It was easy to get my manager to bend the rules.	229	1	5	1.12	3.61
5 My manager asked for employee input into new policies and procedures.	240	1	5	1.14	2.80
6 Changes were made to the company policies and procedures without discussing it with employees.	228	1	5	1.15	3.21
7 My manager was willing to discuss my work performance with me candidly.	248	1	5	1.06	3.31
8 My manager allowed us to appeal our performance evaluations.	212	1	5	1.08	2.66
9 My manager asked for our input on our performance evaluations.	221	1	5	1.31	3.03
10 My manager had adequate opportunity to judge my performance prior to evaluating it.	233	1	5	1.08	3.30
11 My manager answered my questions in a timely manner.	245	1	5	1.06	3.19
12 My manager encouraged us to ask questions if we did not understand something.	246	1	5	0.97	3.32
13 My manager did not always give us the full story about decisions he or she made.	225	1	5	1.14	3.18
14 We were asked our opinion about the effects of a change in policies and procedures.	229	1	5	1.07	2.50
15 My manager tended to blame his or her mistakes on others.	207	1	5	1.15	3.92
16 My manager seemed to assign employees to do his or her dirty work.	219	1	5	1.14	3.61
17 My manager punished employees who did not complete their work.	220	1	4	0.89	2.25
18 My manager rewarded employees who performed their jobs adequately.	241	1	5	1.07	2.98
19 My manager was consistent in applying company policies and procedures over time.	239	1	5	0.99	2.89
20 In making decisions, my manager behaved ethically.	245	1	5	1.04	3.16
21 My manager used consistent standards to evaluate employee performance.	235	1	5	1.04	2.73
22 When making decisions, my manager applied consistent standards across all employees.	237	1	5	1.05	2.65
23 I can see a relationship between how my performance is evaluated and performance on the job.	232	1	5	0.98	3.06
24 I feel that the decision making processes in this company minimized the favoritism that can sometimes be a problem in organizations.	231	1	5	0.95	2.27
25 I feel that my manager's decisions are sometimes influenced by personal biases.	236	1	5	1.15	3.04

Item	N	Min	Max	SD	Mean
26 When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.	227	1	5	1.04	2.85
27 Decision making procedures in this company are as fair as possible.	240	1	5	1.02	2.55
28 When I was applying for the job, the manager asked me irrelevant or inappropriate questions.	186	1	5	0.87	1.65
29 Procedures for evaluating me accurately got at what I can and can't do well.	229	1	5	1.03	2.66
30 Procedures for hiring me accurately got at what I do and don't know.	232	1	5	1.09	2.62
31 There seems to be a lot of bias and discrimination in this company.	213	1	5	1.12	3.87
32 In making decisions, my manager collected accurate and complete information.	242	1	5	1.06	2.70
33 This company seems to pay employees with little regard for how well they perform.	231	1	5	1.18	3.23
34 My manager consistently rewards high performers.	240	1	5	1.05	2.65
35 My manager consistently punishes poor performers.	232	1	4	0.93	2.15
36 My manager probably paid me more than I deserved.	198	1	5	0.83	4.31
37 The outcome of most decisions in this company seem to be fair.	244	1	5	0.97	2.83
38 Considering how hard I worked, I was rewarded fairly.	236	1	5	1.06	2.67
39 I received adequate recognition and rewards from my manager.	238	1	5	1.11	2.71
40 I was paid significantly less than other employees in similar job in this company.	203	1	5	1.14	3.84
41 I could probably have received a more appropriate salary at another company.	227	1	5	1.19	3.33
42 I could probably have received more appropriate assignments at another company.	227	1	5	1.15	3.50
43 My work assignments/workload seemed fair to me.	244	1	5	1.02	3.05
44 I'm sure that the decision to hire me was a fair one.	245	1	5	0.87	3.39
45 In general, I would have made the same decisions my manager made concerning me.	237	1	5	1.07	2.87
46 Overall, the rewards I received at this company seemed fair.	242	1	5	1.08	2.80
47 People at this company get what they deserve.	237	1	5	0.96	2.38
48 Most of the decisions made at this company seem fair considering the circumstances.	242	1	5	1.01	2.73
49 Compared to my pay, my manager seemed to make too much money.	219	1	5	1.09	3.59
50 When I consider my responsibilities, I was not fairly rewarded.	234	1	5	1.15	3.64
51 When I consider the stress level at my job, I was not fairly rewarded.	235	1	5	1.16	3.53
52 When I consider my experience level, I was not fairly rewarded.	235	1	5	1.20	3.60
53 My manager took time to explain why decisions concerning me were made.	237	1	5	1.05	2.65

Item	N	Min	Max	SD	Mean
54 It seemed that my manager was sensitive to how decisions he or she made would affect me.	234	1	5	1.15	2.77
55 When informing me of decisions, my manager was always polite.	241	1	5	1.12	3.19
56 My manager never took time to apologize for decisions that negatively impacted me.	221	1	5	1.16	3.59
57 When decision were made concerning me, I often felt let down by my manager.	227	1	5	1.09	3.81
58 Any decisions made concerning me were explained very clearly by my manager.	241	1	5	1.07	2.71
59 The justifications for decisions made concerning me seemed adequate.	238	1	5	1.01	2.69
60 When my manager made decisions that negatively impacted me, he or she expressed regret.	230	1	5	1.05	2.46
61 It took a long time for my manager to let me know the outcome of decisions made about me.	226	1	5	1.07	3.77
62 When decisions were made that affected me, my manager was sensitive to my personal needs.	230	1	5	1.06	2.87
63 When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	232	1	5	0.99	3.00
64 My manager didn't seem to care how decisions he or she made affected me.	213	1	5	1.12	3.92
65 When I asked my manager about a decision he or she made that affected me, he or she was often evasive.	212	1	5	1.07	3.85
66 When explaining decisions that affected me, my manager treated me more as a friend than an employee.	236	1	5	1.03	2.60
67 My manager usually apologized when a decisions he or she made negatively affected me.	226	1	5	1.01	2.52
68 My manager told me how he or she made decisions that affected me.	233	1	5	1.04	2.60
69 I never had a clear understanding of how decisions that affected me were made.	231	1	5	1.07	3.71
70 I understood the process by which my manager made decisions.	241	1	5	1.05	2.59
71 I usually felt that my manager had ulterior motives for explaining decisions to me.	215	1	5	1.09	3.87
72 The explanations my manager offered of how he or she made decisions that affected me usually made sense.	239	1	5	0.92	2.95
73 The way my manager made decisions often seemed arbitrary.	233	1	5	1.05	3.73
74 I usually understood my manager's motivation for making decisions that affected me.	239	1	5	0.94	2.95
75 My manager's explanations for how decisions were made usually seemed genuine.	240	1	5	0.98	3.00
76 The way my manager made decisions usually seemed reasonable.	240	1	5	0.97	2.93

Item	N	Min	Max	SD	Mean
77 Given the way decisions affected me, the explanations my manager gave for how the decisions were made were reasonable.	236	1	5	0.95	2.90
78 Given the constraints my manager was under when making a decision that affected me, the way he or she made the decision was fair.	240	1	5	0.94	2.92

Note: N = number of respondents, Min = minimum value selected for a given item, Max = maximum value selected for a given item, SD = standard deviation.

Table 7: Items Retained After Study 1

Item
1 My manager was consistent in applying company policies and procedures to all employees.
2 My manager seemed to have favorite employees.
3 My manager seemed to make rules and decisions that were in the best interest of the employees.
4 It was easy to get my manager to bend the rules.
5 My manager asked for employee input into new policies and procedures.
6 Changes were made to the company policies and procedures without discussing it with employees.
7 My manager was willing to discuss my work performance with me candidly.
10 My manager had adequate opportunity to judge my performance prior to evaluating it.
11 My manager answered my questions in a timely manner.
13 My manager did not always give us the full story about decisions he or she made.
14 We were asked our opinion about the effects of a change in policies and procedures.
18 My manager rewarded employees who performed their jobs adequately.
20 In making decisions, my manager behaved ethically.
21 My manager used consistent standards to evaluate employee performance.
22 When making decisions, my manager applied consistent standards across all employees.
25 I feel that my manager's decisions are sometimes influenced by personal biases.
26 When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.
27 Decision making procedures in this company are as fair as possible.
29 Procedures for evaluating me accurately got at what I can and can't do well.
30 Procedures for hiring me accurately got at what I do and don't know.
32 In making decisions, my manager collected accurate and complete information.
33 This company seems to pay employees with little regard for how well they perform.
34 My manager consistently rewards high performers.
38 Considering how hard I worked, I was rewarded fairly.
39 I received adequate recognition and rewards from my manager.
41 I could probably have received a more appropriate salary at another company.

Item

- 42 I could probably have received more appropriate assignments at another company.
- 43 My work assignments/workload seemed fair to me.
- 45 In general, I would have made the same decisions my manager made concerning me.
- 46 Overall, the rewards I received at this company seemed fair.
- 48 Most of the decisions made at this company seem fair considering the circumstances.
- 50 When I consider my responsibilities, I was not fairly rewarded.
- 51 When I consider the stress level at my job, I was not fairly rewarded.
- 52 When I consider my experience level, I was not fairly rewarded.
- 53 My manager took time to explain why decisions concerning me were made.
- 54 It seemed that my manager was sensitive to how decisions he or she made would affect me.
- 55 When informing me of decisions, my manager was always polite.
- 58 Any decisions made concerning me were explained very clearly by my manager.
- 59 The justifications for decisions made concerning me seemed adequate.
- 60 When my manager made decisions that negatively impacted me, he or she expressed regret.
- 62 When decisions were made that affected me, my manager was sensitive to my personal needs.
- 66 When explaining decisions that affected me, my manager treated me more as a friend than an employee.
- 67 My manager usually apologized when a decisions he or she made negatively affected me.
- 68 My manager told me how he or she made decisions that affected me.
- 69 I never had a clear understanding of how decisions that affected me were made.
- 70 I understood the process by which my manager made decisions.
- 73 The way my manager made decisions often seemed arbitrary.
- 74 I usually understood my manager's motivation for making decisions that affected me.
-

Note: All items were rated using the following scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree).

Table 8: Goodness-of-Fit of Four Models of Organizational Justice Using Individual Items

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	1653	8787.44	5.32	--	--	--	--	--	42.20	8903.44
1-Factor	1595	4334.86	2.72	0.46	0.42	0.62	0.62	0.090	21.64	4566.86
2-Factor	1594	4268.95	2.68	0.47	0.43	0.63	0.63	0.089	21.34	4502.95
3-Factor	1592	4007.76	2.52	0.49	0.45	0.66	0.66	0.085	20.12	4245.76
4-Factor	1589	3991.41	2.51	0.49	0.45	0.67	0.66	0.085	20.07	4235.41

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figures 1-4 for descriptions of each model.

Table 9: Item-to-Parcel Links for Confirmatory Factor Analyses

Item	Item Parcel
1 My manager was consistent in applying company policies and procedures to all employees.	1
21 My manager used consistent standards to evaluate employee performance.	1
22 When making decisions, my manager applied consistent standards across all employees.	1
3 My manager seemed to make rules and decisions that were in the best interest of the employees.	1
27 Decision making procedures in this company are as fair as possible.	1
5 My manager asked for employee input into new policies and procedures.	2
10 My manager had adequate opportunity to judge my performance prior to evaluating it.	2
20 In making decisions, my manager behaved ethically.	2
26 When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.	2
29 Procedures for evaluating me accurately got at what I can and can't do well.	2
6 Changes were made to the company policies and procedures without discussing it with employees.	3
14 We were asked our opinion about the effects of a change in policies and procedures.	3
25 I feel that my manager's decisions are sometimes influenced by personal biases.	3
30 Procedures for hiring me accurately got at what I do and don't know.	3
32 In making decisions, my manager collected accurate and complete information.	3
33 This company seems to pay employees with little regard for how well they perform.	4
50 When I consider my responsibilities, I was not fairly rewarded.	4
41 I could probably have received a more appropriate salary at another company.	4
52 When I consider my experience level, I was not fairly rewarded.	4
51 When I consider the stress level at my job, I was not fairly rewarded.	4
42 I could probably have received more appropriate assignments at another company.	4
34 My manager consistently rewards high performers.	5
39 I received adequate recognition and rewards from my manager.	5
38 Considering how hard I worked, I was rewarded fairly.	5
46 Overall, the rewards I received at this company seemed fair.	5

Item	Item Parcel
43 My work assignments/workload seemed fair to me.	6
45 In general, I would have made the same decisions my manager made concerning me.	6
48 Most of the decisions made at this company seem fair considering the circumstances.	6
4 It was easy to get my manager to bend the rules.	7
13 My manager did not always give us the full story about decisions he or she made.	7
69 I never had a clear understanding of how decisions that affected me were made.	7
11 My manager answered my questions in a timely manner.	8
18 My manager rewarded employees who performed their jobs adequately.	8
58 Any decisions made concerning me were explained very clearly by my manager.	8
59 The justifications for decisions made concerning me seemed adequate.	9
68 My manager told me how he or she made decisions that affected me.	9
70 I understood the process by which my manager made decisions.	9
53 My manager took time to explain why decisions concerning me were made.	10
7 My manager was willing to discuss my work performance with me candidly.	10
54 It seemed that my manager was sensitive to how decisions he or she made would affect me.	11
60 When my manager made decisions that negatively impacted me, he or she expressed regret.	11
67 My manager usually apologized when a decisions he or she made negatively affected me.	11
55 When informing me of decisions, my manager was always polite.	12
62 When decisions were made that affected me, my manager was sensitive to my personal needs.	12
66 When explaining decisions that affected me, my manager treated me more as a friend than an	12

Note: Parcels 1-3 indicate Interpersonal Justice, parcels 4-6 indicate Informational Justice, parcels 7-9 indicate Configural Justice and parcels 10-12 indicate Systemic Justice.

Table 10: Examination of Univariate Normality for Item Parcels

Univariate Normality		
Item		
Bundle	Skewness	Kurtosis
1	0.01	-0.70
2	0.20	-0.63
3	0.16	-0.51
4	-0.11	-0.80
5	-0.04	-0.70
6	-0.09	-0.28
7	-0.27	-0.52
8	-0.12	-0.37
9	-0.02	-0.61
10	-0.07	-0.53
11	0.08	-0.81
12	-0.21	-0.60

Note: See Table 7 for item-to-parcel linkages.

Table 11: Item Parcel Intercorrelations

Parcel	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	3.62	0.83	--											
2	2.87	0.82	0.664	--										
3	3.28	0.72	0.600	0.537	--									
4	3.16	0.76	0.066	-0.142	0.186	--								
5	3.00	0.77	0.626	0.627	0.460	0.107	--							
6	2.94	0.78	0.634	0.593	0.423	0.082	0.725	--						
7	3.62	0.88	0.206	-0.066	0.328	0.595	0.038	0.056	--					
8	2.87	0.78	0.728	0.708	0.448	0.024	0.724	0.656	0.069	--				
9	2.89	0.70	0.637	0.703	0.492	0.011	0.631	0.691	0.151	0.738	--			
10	2.73	0.81	0.593	0.682	0.441	-0.019	0.641	0.566	0.134	0.722	0.707	--		
11	3.02	0.80	0.567	0.677	0.376	-0.073	0.535	0.606	0.010	0.670	0.719	0.656	--	
12	2.92	0.70	0.569	0.658	0.337	-0.026	0.506	0.579	0.035	0.617	0.613	0.586	0.775	--

Note: Parcels 1-3 indicate Systemic Justice, parcels 4-6 indicate Configural Justice, parcels 7-9 indicate Informational Justice and parcels 10-12 indicate Interpersonal Justice.

Table 12: Goodness-of-Fit of Four Models of Organizational Justice Using Item Parcels

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	66	2013.76	30.51	--	--	--	--	--	8.25	2037.76
1-Factor	55	603.21	10.97	0.74	0.63	0.72	0.72	0.200	2.63	649.21
2-Factor	54	601.05	11.13	0.74	0.62	0.72	0.72	0.200	2.63	649.05
2-Factor + J	41	372.20	9.08	0.79	0.61	0.83	0.83	0.180	1.83	451.20
3-Factor	52	552.22	10.62	0.76	0.63	0.74	0.74	0.200	2.45	605.22
3-Factor + J	38	213.65	5.62	0.87	0.74	0.91	0.91	0.140	1.19	293.65
4-Factor	49	522.96	10.67	0.76	0.62	0.76	0.76	0.200	2.35	580.96
4-Factor + J	33	95.23	2.89	0.94	0.87	0.97	0.97	0.087	0.75	185.23
Just-Injust	54	357.74	6.62	0.82	0.74	0.86	0.86	0.160	1.75	405.74
Just-Injust + J	41	183.85	4.48	0.89	0.79	0.93	0.93	0.120	1.12	259.85

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). J = general = justice factor. See Figures 1-4 for descriptions of each model.

Table 13: Eigenvalues for Initial Exploratory Factor Analysis Results

Initial Eigenvalues			
Factor	Total	% Variance	Cumulative %
1	16.42	34.94	34.94
2	5.29	11.25	46.19
3	2.46	5.22	51.42
4	2.18	4.64	56.06
5	1.55	3.29	59.35
6	1.48	3.16	62.51
7	1.36	2.89	65.40
8	1.19	2.53	67.93
9	1.12	2.38	70.31
10	1.01	2.14	72.45
11	0.86	1.83	74.28
12	0.82	1.74	76.02
13	0.77	1.64	77.66
14	0.70	1.48	79.14
15	0.66	1.40	80.54
16	0.63	1.34	81.88
17	0.59	1.25	83.13
18	0.55	1.18	84.31
19	0.52	1.10	85.40
20	0.49	1.05	86.45

Note: Analyses conducted using ML extraction and direct oblimin rotation. Remaining factors accounted for less than 1% of total variance.

Table 14: Results of Initial Exploratory Factor Analysis

Item	Factor									
	1	2	3	4	5	6	7	8	9	10
70. I understood the process by which my manager made decisions.	0.56				-0.15	-0.36	0.16			
76. The way my manager made decisions usually seemed reasonable.	0.43		0.13	-0.35		-0.12	0.14			0.12
75. My manager's explanations for how decisions were made usually seemed genuine.	0.41		0.14	-0.29	-0.17	-0.13			-0.17	0.15
32. In making decisions, my manager collected accurate and complete information.	0.36		0.11	-0.30			0.28		0.11	0.12
54. It seemed that my manager was sensitive to how decisions he or she made would affect me.	0.32					-0.30	0.18	0.21		0.25
26. When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.	0.28	0.17	0.19	-0.18				0.16		0.16
42. I could probably have received more appropriate assignments at another company.		0.76		-0.12						
50. When I consider my responsibilities, I was not fairly rewarded.	0.12	0.75	-0.13					-0.12		
52. When I consider my experience level, I was not fairly rewarded.		0.72	-0.20			-0.15				
61. It took a long time for my manager to let me know the outcome of decisions made about me.	-0.19	0.72	0.17	0.15		0.20	0.12	0.12		
40. I was paid significantly less than other employees in similar job in this company.		0.68	-0.13			-0.17				
57. When decision were made concerning me, I often felt let down by my manager.	-0.11	0.66			-0.23	0.13		-0.17		

Item	1	2	3	4	5	6	7	8	9	10
31. There seems to be a lot of bias and discrimination in this company.	0.11	0.63			-0.40		-0.25	0.13	-0.23	
33. This company seems to pay employees with little regard for how well they perform.	0.11	0.59			0.16	-0.10				
41. I could probably have received a more appropriate salary at another company.	0.14	0.54	-0.31			0.13			0.50	-0.16
4. It was easy to get my manager to bend the rules.		0.39		0.23	-0.17	0.21		0.29		
38. Considering how hard I worked, I was rewarded fairly.			0.79						0.21	
46. Overall, the rewards I received at this company seemed fair.	0.14		0.58	-0.11	-0.11		0.30			
39. I received adequate recognition and rewards from my manager.	0.11	-0.12	0.32	-0.13	-0.23		0.12		0.13	
19. My manager was consistent in applying company policies and procedures over time.				-0.82						
21. My manager used consistent standards to evaluate employee performance.				-0.75	-0.11				0.16	
1. My manager was consistent in applying company policies and procedures to all employees.	0.12	0.14	0.15	-0.74						
22. When making decisions, my manager applied consistent standards across all employees.				-0.70			0.14	0.12		
11. My manager answered my questions in a timely manner.		0.10		-0.48		-0.26		-0.13		0.28
20. In making decisions, my manager behaved ethically.	0.36			-0.47	-0.11		0.19		-0.11	0.13
18. My manager rewarded employees who performed their jobs adequately.				-0.23	-0.65		0.10		0.25	0.11
34. My manager consistently rewards high performers.	0.12		0.21	-0.12	-0.57				0.17	
43. My work assignments/workload seemed fair to me.					-0.40			0.28		

Item	1	2	3	4	5	6	7	8	9	10
53. My manager took time to explain why decisions concerning me were made.	0.13	0.13				-0.77				
68. My manager told me how he or she made decisions that affected me.			-0.12		-0.36	-0.61	0.12	0.16		0.16
58. Any decisions made concerning me were explained very clearly by my manager.				-0.42		-0.44		0.30		
59. The justifications for decisions made concerning me seemed adequate.	-0.16	-0.17		-0.24		-0.32	0.18	0.29	0.16	
27. Decision making procedures in this company are as fair as possible.	-0.15			-0.31			0.74		0.10	-0.15
37. The outcome of most decisions in this company seem to be fair.		0.11	0.14				0.72			0.18
48. Most of the decisions made at this company seem fair considering the circumstances.	0.20		0.12				0.70	0.20		-0.14
47. People at this company get what they deserve.	0.11	-0.11	0.30		-0.11	-0.15	0.50			
5. My manager asked for employee input into new policies and procedures.	0.20		-0.24		-0.13		0.37		0.15	0.24
62. When decisions were made that affected me, my manager was sensitive to my personal needs.	0.16			-0.25		-0.10	0.12	0.45		0.30
60. When my manager made decisions that negatively impacted me, he or she expressed regret.				-0.16		-0.34		0.43		0.34
63. When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	0.13	-0.17	0.15	-0.25	-0.17	0.13	0.14	0.36		
45. In general, I would have made the same decisions my manager made concerning me.		-0.18	0.24		-0.12		0.26	0.33		0.15
30. Procedures for hiring me accurately got at what I do and don't know.			0.14						0.54	

Item	1	2	3	4	5	6	7	8	9	10
29. Procedures for evaluating me accurately got at what I can and can't do well.	0.10		0.19		-0.16	-0.24			0.35	0.26
66. When explaining decisions that affected me, my manager treated me more as a friend than an employee.										0.74
3. My manager seemed to make rules and decisions that were in the best interest of the employees.					-0.30		0.31	-0.19	-0.11	0.49
55. When informing me of decisions, my manager was always polite.	0.24				-0.26			0.33	0.16	0.39
10. My manager had adequate opportunity to judge my performance prior to evaluating it.	0.21					-0.23	-0.11		0.33	0.39

Note: Blank cells indicate loadings less than 0.10.

Table 15: Items Loading Weakly on All Factors

Item
26 When evaluating my performance, my manager appeared to be aware of factors beyond my control that influenced my performance.
39 I received adequate recognition and rewards from my manager.
45 In general, I would have made the same decisions my manager made concerning me.
54 It seemed that my manager was sensitive to how decisions he or she made would affect me.
59 The justifications for decisions made concerning me seemed adequate.

Note: Listed items loaded < .35 on all factors in exploratory results.

Table 16: Eigenvalues for Revised Exploratory Factor Analysis Results

Factor	Initial Eigenvalues		
	Total	% Variance	Cumulative %
1	14.55	34.64	34.64
2	5.19	12.35	46.99
3	2.26	5.37	52.36
4	2.02	4.81	57.17
5	1.44	3.43	60.61
6	1.37	3.25	63.86
7	1.31	3.13	66.99
8	1.07	2.56	69.55
9	1.01	2.41	71.96
10	0.85	2.03	73.99
11	0.77	1.83	75.82
12	0.72	1.72	77.54
13	0.71	1.69	79.24
14	0.64	1.53	80.76
15	0.59	1.41	82.17
16	0.55	1.32	83.49
17	0.53	1.26	84.75
18	0.50	1.20	85.95
19	0.49	1.16	87.11
20	0.45	1.08	88.19
21	0.43	1.03	89.22

Note: Analyses conducted using ML extraction and direct oblimin rotation. Remaining factors accounted for less than 1% of total variance.

Table 17: Results of Revised Exploratory Factor Analysis

Item	Factor		
	1	2	3
62 When decisions were made that affected me, my manager was sensitive to my personal needs.	0.776		
76 The way my manager made decisions usually seemed reasonable.	0.775		
58 Any decisions made concerning me were explained very clearly by my manager.	0.763		
75 My manager's explanations for how decisions were made usually seemed genuine.	0.762		
60 When my manager made decisions that negatively impacted me, he or she expressed regret.	0.759		
19 My manager was consistent in applying company policies and procedures over time.	0.756		
68 My manager told me how he or she made decisions that affected me.	0.738		
55 When informing me of decisions, my manager was always polite.	0.728		
20 In making decisions, my manager behaved ethically.	0.722		
11 My manager answered my questions in a timely manner.	0.707		
70 I understood the process by which my manager made decisions.	0.686		
1 My manager was consistent in applying company policies and procedures to all employees.	0.682		
22 When making decisions, my manager applied consistent standards across all employees.	0.645		
3 My manager seemed to make rules and decisions that were in the best interest of the employees.	0.620		
32 In making decisions, my manager collected accurate and complete information.	0.608		
21 My manager used consistent standards to evaluate employee performance.	0.606		
53 My manager took time to explain why decisions concerning me were made.	0.590		
10 My manager had adequate opportunity to judge my performance prior to evaluating it.	0.567		
18 My manager rewarded employees who performed their jobs adequately.	0.475		0.379
5 My manager asked for employee input into new policies and procedures.	0.474		
29 Procedures for evaluating me accurately got at what I can and can't do well.	0.473		
63 When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	0.440		0.357
66 When explaining decisions that affected me, my manager treated me more as a friend than an	0.425		
43 My work assignments/workload seemed fair to me.	0.322		
52 When I consider my experience level, I was not fairly rewarded.		0.771	

50 When I consider my responsibilities, I was not fairly rewarded.		0.758
42 I could probably have received more appropriate assignments at another company.		0.708
40 I was paid significantly less than other employees in similar job in this company.		0.695
57 When decisions were made concerning me, I often felt let down by my manager.		0.679
41 I could probably have received a more appropriate salary at another company.		0.676
61 It took a long time for my manager to let me know the outcome of decisions made about me.	-0.314	0.663
31 There seems to be a lot of bias and discrimination in this company.		0.635
33 This company seems to pay employees with little regard for how well they perform.		0.573
4 It was easy to get my manager to bend the rules.		0.453
38 Considering how hard I worked, I was rewarded fairly.		0.743
46 Overall, the rewards I received at this company seemed fair.		0.731
47 People at this company get what they deserve.		0.623
37 The outcome of most decisions in this company seem to be fair.		0.568
27 Decision making procedures in this company are as fair as possible.		0.541
48 Most of the decisions made at this company seem fair considering the circumstances.		0.540
34 My manager consistently rewards high performers.		0.491
30 Procedures for hiring me accurately got at what I do and don't know.		0.314

Note: Blank cells indicate loadings less than .30.

Table 18: Factor Intercorrelations for Three-Factor Solution

Factor	1	2	3
1 Procedural Justice	1.00		
2 Distributive Injustice	-0.01	1.00	
3 Overall Justice	0.51	-0.04	1.00

Table 19: Item Loadings for High Satisfaction Respondents

Item	Factor		
	1	2	3
75. My manager's explanations for how decisions were made usually seemed genuine.	0.842		
58. Any decisions made concerning me were explained very clearly by my manager.	0.791		
76. The way my manager made decisions usually seemed reasonable.	0.783		
1. My manager was consistent in applying company policies and procedures to all employees.	0.775		
19. My manager was consistent in applying company policies and procedures over time.	0.761		
60. When my manager made decisions that negatively impacted me, he or she expressed regret.	0.755		
68. My manager told me how he or she made decisions that affected me.	0.736		
62. When decisions were made that affected me, my manager was sensitive to my personal needs.	0.736		
20. In making decisions, my manager behaved ethically.	0.716		
70. I understood the process by which my manager made decisions.	0.703		
22. When making decisions, my manager applied consistent standards across all employees.	0.697		
11. My manager answered my questions in a timely manner.	0.685		
55. When informing me of decisions, my manager was always polite.	0.681		
21. My manager used consistent standards to evaluate employee performance.	0.665		
10. My manager had adequate opportunity to judge my performance prior to evaluating it.	0.614		
32. In making decisions, my manager collected accurate and complete information.	0.614		
3. My manager seemed to make rules and decisions that were in the best interest of the employees.	0.612		
53. My manager took time to explain why decisions concerning me were made.	0.587		
18. My manager rewarded employees who performed their jobs adequately.	0.573		
29. Procedures for evaluating me accurately got at what I can and can't do well.	0.532		
63. When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	0.475		0.338
66. When explaining decisions that affected me, my manager treated me more as a friend than an employee.	0.408		
43. My work assignments/workload seemed fair to me.	0.373		
5. My manager asked for employee input into new policies and procedures.	0.368		
52. When I consider my experience level, I was not fairly rewarded.		0.828	

40. I was paid significantly less than other employees in similar job in this company.		0.654
50. When I consider my responsibilities, I was not fairly rewarded.		0.632
41. I could probably have received a more appropriate salary at another company.		0.599
33. This company seems to pay employees with little regard for how well they perform.		0.542
61. It took a long time for my manager to let me know the outcome of decisions made about me.	0.352	0.525
57. When decision were made concerning me, I often felt let down by my manager.		0.505
42. I could probably have received more appropriate assignments at another company.		0.488
31. There seems to be a lot of bias and discrimination in this company.		0.459
4. It was easy to get my manager to bend the rules.		0.366
37. The outcome of most decisions in this company seem to be fair.		0.717
27. Decision making procedures in this company are as fair as possible.		0.639
47. People at this company get what they deserve.		0.638
46. Overall, the rewards I received at this company seemed fair.		0.623
48. Most of the decisions made at this company seem fair considering the circumstances.		0.608
38. Considering how hard I worked, I was rewarded fairly.		0.546
34. My manager consistently rewards high performers.	0.314	0.327
30. Procedures for hiring me accurately got at what I do and don't know.		

Note: Blank cells indicate loadings less than .30.

Table 20: Item Loadings for Low Satisfaction Respondents

Item	Factor		
	1	2	3
22. When making decisions, my manager applied consistent standards across all employees.	0.845		
32. In making decisions, my manager collected accurate and complete information.	0.804		
21. My manager used consistent standards to evaluate employee performance.	0.789		
27. Decision making procedures in this company are as fair as possible.	0.788		
46. Overall, the rewards I received at this company seemed fair.	0.773		
48. Most of the decisions made at this company seem fair considering the circumstances.	0.772		
38. Considering how hard I worked, I was rewarded fairly.	0.761		
47. People at this company get what they deserve.	0.756		
20. In making decisions, my manager behaved ethically.	0.755		
19. My manager was consistent in applying company policies and procedures over time.	0.736		
37. The outcome of most decisions in this company seem to be fair.	0.710		
58. Any decisions made concerning me were explained very clearly by my manager.	0.707		
76. The way my manager made decisions usually seemed reasonable.	0.704		-0.347
18. My manager rewarded employees who performed their jobs adequately.	0.674		
75. My manager's explanations for how decisions were made usually seemed genuine.	0.673		
34. My manager consistently rewards high performers.	0.667		
1. My manager was consistent in applying company policies and procedures to all employees.	0.661		0.330
11. My manager answered my questions in a timely manner.	0.652		
68. My manager told me how he or she made decisions that affected me.	0.650		
70. I understood the process by which my manager made decisions.	0.641		
53. My manager took time to explain why decisions concerning me were made.	0.639		
63. When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	0.612		-0.335
3. My manager seemed to make rules and decisions that were in the best interest of the employees.	0.612		
29. Procedures for evaluating me accurately got at what I can and can't do well.	0.570		
60. When my manager made decisions that negatively impacted me, he or she expressed regret.	0.549		-0.302
5. My manager asked for employee input into new policies and procedures.	0.534		

43. My work assignments/workload seemed fair to me.	0.477		-0.467
30. Procedures for hiring me accurately got at what I do and don't know.	0.463		
55. When informing me of decisions, my manager was always polite.	0.448		
10. My manager had adequate opportunity to judge my performance prior to evaluating it.	0.414		
42. I could probably have received more appropriate assignments at another company.		0.797	
41. I could probably have received a more appropriate salary at another company.		0.764	
50. When I consider my responsibilities, I was not fairly rewarded.		0.620	
40. I was paid significantly less than other employees in similar job in this company.		0.564	
52. When I consider my experience level, I was not fairly rewarded.		0.458	
57. When decision were made concerning me, I often felt let down by my manager.		0.449	
33. This company seems to pay employees with little regard for how well they perform.		0.388	
4. It was easy to get my manager to bend the rules.			
62. When decisions were made that affected me, my manager was sensitive to my personal needs.	0.505		-0.631
61. It took a long time for my manager to let me know the outcome of decisions made about me.		0.330	0.382
66. When explaining decisions that affected me, my manager treated me more as a friend than an employee.			-0.365
31. There seems to be a lot of bias and discrimination in this company.			

Note: Blank cells indicate loadings less than .30.

Table 21: Item Loadings for Organizational Sample

Item	Factor		
	1	2	3
19. My manager was consistent in applying company policies and procedures over time.	0.854		
1. My manager was consistent in applying company policies and procedures to all employees.	0.843		
76. The way my manager made decisions usually seemed reasonable.	0.836		
22. When making decisions, my manager applied consistent standards across all employees.	0.797		
58. Any decisions made concerning me were explained very clearly by my manager.	0.759		
75. My manager's explanations for how decisions were made usually seemed genuine.	0.742		
70. I understood the process by which my manager made decisions.	0.721		
20. In making decisions, my manager behaved ethically.	0.717		
32. In making decisions, my manager collected accurate and complete information.	0.712		
21. My manager used consistent standards to evaluate employee performance.	0.709		
11. My manager answered my questions in a timely manner.	0.707		
62. When decisions were made that affected me, my manager was sensitive to my personal needs.	0.692		
55. When informing me of decisions, my manager was always polite.	0.670		
60. When my manager made decisions that negatively impacted me, he or she expressed regret.	0.654		0.435
68. My manager told me how he or she made decisions that affected me.	0.614		0.389
3. My manager seemed to make rules and decisions that were in the best interest of the employees.	0.607		
53. My manager took time to explain why decisions concerning me were made.	0.555		
57. When decision were made concerning me, I often felt let down by my manager.	0.464		
61. It took a long time for my manager to let me know the outcome of decisions made about me.	0.461		
5. My manager asked for employee input into new policies and procedures.	0.455		
63. When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	0.454	0.416	
4. It was easy to get my manager to bend the rules.	0.377		
29. Procedures for evaluating me accurately got at what I can and can't do well.	0.374		
52. When I consider my experience level, I was not fairly rewarded.		0.718	
50. When I consider my responsibilities, I was not fairly rewarded.		0.710	
40. I was paid significantly less than other employees in similar job in this company.		0.649	

38. Considering how hard I worked, I was rewarded fairly.		0.581	
46. Overall, the rewards I received at this company seemed fair.	0.302	0.566	
42. I could probably have received more appropriate assignments at another company.		0.555	
41. I could probably have received a more appropriate salary at another company.		0.499	
33. This company seems to pay employees with little regard for how well they perform.		0.488	
47. People at this company get what they deserve.	0.310	0.479	
31. There seems to be a lot of bias and discrimination in this company.		0.476	
34. My manager consistently rewards high performers.		0.462	
37. The outcome of most decisions in this company seem to be fair.		0.451	-0.301
43. My work assignments/workload seemed fair to me.		0.403	0.391
18. My manager rewarded employees who performed their jobs adequately.	0.371	0.378	
48. Most of the decisions made at this company seem fair considering the circumstances.	0.303	0.354	
30. Procedures for hiring me accurately got at what I do and don't know.		0.315	
27. Decision making procedures in this company are as fair as possible.	0.381	0.401	-0.487
66. When explaining decisions that affected me, my manager treated me more as a friend than an employee.			0.441
10. My manager had adequate opportunity to judge my performance prior to evaluating it.	0.352		0.384

Note: Blank cells indicate loadings less than .30.

Table 22: Item Loadings for Student Sample

Item	Factor		
	1	2	3
62. When decisions were made that affected me, my manager was sensitive to my personal needs.	0.981		
76. The way my manager made decisions usually seemed reasonable.	0.720		
75. My manager's explanations for how decisions were made usually seemed genuine.	0.662		
66. When explaining decisions that affected me, my manager treated me more as a friend than an employee.	0.660		
70. I understood the process by which my manager made decisions.	0.600		
60. When my manager made decisions that negatively impacted me, he or she expressed regret.	0.580		
63. When decisions were made that affected me, my manager seemed to be aware of my rights as an employee.	0.568		
55. When informing me of decisions, my manager was always polite.	0.556		
68. My manager told me how he or she made decisions that affected me.	0.519		
58. Any decisions made concerning me were explained very clearly by my manager.	0.463		0.444
53. My manager took time to explain why decisions concerning me were made.	0.458		0.328
43. My work assignments/workload seemed fair to me.	0.452		
10. My manager had adequate opportunity to judge my performance prior to evaluating it.	0.385		
34. My manager consistently rewards high performers.	0.346		
5. My manager asked for employee input into new policies and procedures.			
42. I could probably have received more appropriate assignments at another company.		0.827	
41. I could probably have received a more appropriate salary at another company.		0.825	
50. When I consider my responsibilities, I was not fairly rewarded.		0.532	
40. I was paid significantly less than other employees in similar job in this company.		0.437	
52. When I consider my experience level, I was not fairly rewarded.		0.384	
57. When decision were made concerning me, I often felt let down by my manager.		0.380	
33. This company seems to pay employees with little regard for how well they perform.		0.354	
61. It took a long time for my manager to let me know the outcome of decisions made about me.		0.305	
4. It was easy to get my manager to bend the rules.			

19. My manager was consistent in applying company policies and procedures over time.		0.773
27. Decision making procedures in this company are as fair as possible.		0.766
1. My manager was consistent in applying company policies and procedures to all employees.		0.704
22. When making decisions, my manager applied consistent standards across all employees.		0.661
32. In making decisions, my manager collected accurate and complete information.		0.625
47. People at this company get what they deserve.		0.614
48. Most of the decisions made at this company seem fair considering the circumstances.		0.607
38. Considering how hard I worked, I was rewarded fairly.		0.530
20. In making decisions, my manager behaved ethically.		0.529
21. My manager used consistent standards to evaluate employee performance.		0.528
37. The outcome of most decisions in this company seem to be fair.	0.369	0.474
46. Overall, the rewards I received at this company seemed fair.	0.374	0.443
3. My manager seemed to make rules and decisions that were in the best interest of the employees.		0.439
11. My manager answered my questions in a timely manner.	0.378	0.382
18. My manager rewarded employees who performed their jobs adequately.		0.382
29. Procedures for evaluating me accurately got at what I can and can't do well.		
31. There seems to be a lot of bias and discrimination in this company.		
30. Procedures for hiring me accurately got at what I do and don't know.		

Note: Blank cells indicate loadings less than .30.

Table 23: Factor Intercorrelations for Each Subgroup

High Satisfaction Subgroup			
Factor	IfJ	DI	DJ
IfJ	1.00		
DI	0.03	1.00	
DJ	0.38	0.00	1.00

Low Satisfaction Subgroup			
Factor	GJ	DI	II
GJ	1.00		
DI	-0.04	1.00	
II	-0.20	0.02	1.00

Organizational Sample			
Factor	IfJ	DI	InJ
IfJ	1.00		
DI	0.45	1.00	
InJ	0.09	0.04	1.00

Student Sample			
Factor	IfJ	DI	PJ
IfJ	1.00		
DI	-0.10	1.00	
PJ	0.52	0.10	1.00

Note: IfJ = Informational Justice, DI = Distributive Injustice

DJ = Distributive Justice, GJ = General Justice

II = Interactional Injustice, InJ = Interpersonal Justice.

Table 24: Percentage of Variance Accounted for by Factors in Ea

High Satisfaction Subgroup		
Factor	Factor Rank	Variance
Informational Justice	1	32.6%
Distributive Justice	3	6.4%
Distributive Injustice	2	9.9%
Interactional Justice	--	--
Interactional Injustice	--	--
Total		48.9%

Low Satisfaction Subgroup		
Factor	Factor Rank	% Variance
General Justice	1	36.0%
Distributive Justice	--	--
Distributive Injustice	2	8.4%
Interactional Justice	--	--
Interactional Injustice	3	5.4%
Total		49.8%

Organizational Sample		
Factor	Factor Rank	% Variance
Informational Justice	1	38.1%
Distributive Justice	--	--
Distributive Injustice	2	7.7%
Interpersonal Justice	3	6.7%
Interactional Injustice	--	--
Total		52.5%

Student Sample		
Factor	Factor Rank	% Variance
Procedural Justice	3	4.4%
Distributive Justice	--	--
Distributive Injustice	2	8.1%
Informational Justice	1	37.1%
Interactional Injustice	--	--
Total		49.6%

Table 25: Cross-Validation of Exploratory Factor Structure from High Satisfaction Subgroup on Low Satisfaction Subgroup

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	153	1118.07	7.31	--	--	--	--	--	11.43	1154.07
Satisfied	135	445.43	3.30	0.69	0.61	0.68	0.68	0.15	5.12	517.43

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figure 10 for a description of the model.

Table 26: Cross-Validation of Exploratory Factor Structure from Low Satisfaction Subgroup on High Satisfaction Subgroup

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	153	1013.26	6.62	--	--	--	--	--	8.60	1049.26
Unsatisfied	135	420.14	3.11	0.74	0.67	0.68	0.67	0.13	4.03	492.14

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figure 11 for a description of the model.

Table 27: Cross-Validation of Exploratory Factor Structure from Organizational Sample on Student Sample

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	153	826.78	5.40	--	--	--	--	--	8.30	862.78
Organizational	135	398.58	2.95	0.72	0.64	0.62	0.61	0.14	4.52	470.58

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figure 12 for a description of the model.

Table 28: Cross-Validation of Exploratory Factor Structure from Student Sample on Organizational Sample

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	153	1025.89	6.71	--	--	--	--	--	10.11	1061.89
Student	135	381.41	2.83	0.73	0.66	0.72	0.72	0.13	4.32	453.41

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figure 13 for a description of the model.

Table 29: Demographic Information for Participants in Study 2

Gender	
Female	182
Male	138
Missing	7
Total	327

Age	
18	45
19	153
20	48
21	38
22	22
23	3
24 or Over	3
Missing	15
Total	327

Total Work Experience	
less than 6 months	65
6 months - 1 year	52
1-2 years	42
2-3 years	70
3 or more years	85
Missing	13
Total	327

Table 30: Item Loadings for Selection Context

Item	Factor		
	1	2	3
1 The procedures used to hire me for this job were consistently applied to all applicants.	0.661		
9 The procedures used to hire me for this job were consistently applied to evaluating applicants' performance.	0.651		
2 The procedures used to hire me for this job were in the best interest of applicants.	0.633		
11 The procedures used to hire me for this job were as fair as possible.	0.628		
7 The procedures used to hire me for this job ensured that employment was offered to applicants who deserved it.	0.599		
14 The procedures used to hire me for this job allowed the organization to collect accurate and complete information about me.	0.559		
18 The outcome of the hiring process seems fair.	0.550		
15 The procedures used to hire me for this job were biased and discriminatory.	0.450		0.306
8 The procedures used to hire me for this job were ethical.	0.445		
16 The outcome of the hiring process demonstrated that the organization hires applicants with little regard for how well they perform.	0.435		
5 The procedures used to hire me for this job allowed the organization to adequately judge my performance prior to evaluating me.	0.419		
17 The outcome of the hiring process shows that the organization consistently hires high performers.	0.376		
3 The procedures used to hire me for this job were altered for my individual needs.	-0.341		
13 The procedures used to hire me for this job accurately got at what I do and do not know.	0.328		
40 In explaining the outcome of the hiring decision to me, the recruiter helped me understand the process by which decisions were made.		0.808	
41 In explaining the outcome of the hiring decision to me, the recruiter provided me with genuine explanations for how decisions were made.		0.759	
39 In explaining the outcome of the hiring decision to me, the recruiter told me how decisions were made that affected me.		0.758	
33 In explaining the outcome of the hiring decision to me, the recruiter provided me with adequate justifications for the decisions that were made.		0.638	

28	In explaining the outcome of the hiring decision to me, the recruiter took the time to explain why decisions concerning me were made.		0.621
29	In explaining the outcome of the hiring decision to me, the recruiter was sensitive to how decisions the organization made affected me.		0.563
36	In explaining the outcome of the hiring decision to me, the recruiter was sensitive to my personal needs.		0.484
38	In explaining the outcome of the hiring decision to me, the recruiter treated me more as a friend than as an applicant.		0.470
42	In explaining the outcome of the hiring decision to me, the recruiter made decisions in a reasonable way.		0.454
32	In explaining the outcome of the hiring decision to me, the recruiter was very clear.		0.414
34	In explaining the outcome of the hiring decision to me, the recruiter expressed regret when decisions negatively affected me.		0.360
37	In explaining the outcome of the hiring decision to me, the recruiter was aware of my rights as an applicant.		0.352
26	The outcome of the hiring process was not fair, considering my responsibilities.		0.837
27	The outcome of the hiring process was not fair, considering my experience level.		0.823
21	The outcome of the hiring process meant that I could receive more appropriate assignments at another organization.		0.466
19	The outcome of the hiring process meant that I was paid significantly less than other employees with similar jobs in the organization.		0.455
20	The outcome of the hiring process meant that I could receive a more appropriate salary at another organization.		0.401
35	In explaining the outcome of the hiring decision to me, the recruiter delayed giving me		0.372
25	The outcome of the hiring process shows that most of the decisions made at this company are	0.341	0.367
30	In explaining the outcome of the hiring decision to me, the recruiter was always polite to me.		0.353
31	In explaining the outcome of the hiring decision to me, the recruiter frequently let me down.		0.343
22	The outcome of the hiring process allowed me to receive fair work assignments.		0.339

Note: Blank cells indicate loadings less than 0.30.

Table 31: Item Loadings for Performance Appraisal Context

Item	Factor		
	1	2	3
60 The outcome of the performance appraisal process seems fair.	0.759		
44 The performance appraisals process at work was in the best interest of all employees.	0.730		
49 The performance appraisals process at work ensured that employees received accurate ratings.	0.718		
56 The performance appraisals process at work allowed the organization to collect accurate and complete information about me.	0.710		
43 The performance appraisals process at work was consistently applied to all employees.	0.693		
54 The performance appraisals process at work accurately got at what I can and can not do well.	0.669		
67 The outcome of the performance appraisal process shows that most of the decisions made at this company are fair.	0.653		
53 The performance appraisals process at work was as fair as possible.	0.651		
65 The outcome of the performance appraisal process was the same one I would have made if I were the organization.	0.642		
55 The performance appraisals process at work accurately got at what I do and do not know.	0.622		
66 The outcome of the performance appraisal process shows that people at this organization get what they deserve.	0.551		
48 The performance appraisals process at work allowed my questions to be answered quickly and accurately.	0.550		
47 The performance appraisals process at work allowed the organization to adequately judge my performance prior to evaluating me.	0.497		
46 The performance appraisals process at work allowed me to have input into the appraisal process.	0.497		
64 The outcome of the performance appraisal process allowed me to receive fair work assignments.	0.496		
57 The performance appraisals process at work was biased and discriminatory.	0.490		0.356
51 The performance appraisals process at work was consistently applied to evaluating employees' performance.	0.486		
59 The outcome of the performance appraisal process shows that the organization consistently rewards high performers.	0.485		
50 The performance appraisals process at work was ethical.	0.474		

82	In explaining the outcome of the performance appraisal to me, my supervisor helped me understand the process by which decisions were made.		0.943
81	In explaining the outcome of the performance appraisal to me, my supervisor told me how decisions were made that affected me.		0.910
83	In explaining the outcome of the performance appraisal to me, my supervisor provided me with genuine explanations for how decisions were made.		0.885
75	In explaining the outcome of the performance appraisal to me, my supervisor provided me with adequate justifications for the decisions that were made.		0.775
70	In explaining the outcome of the performance appraisal to me, my supervisor took the time to explain why decisions concerning me were made.		0.687
71	In explaining the outcome of the performance appraisal to me, my supervisor was sensitive to how decisions the organization made affected me.		0.626
78	In explaining the outcome of the performance appraisal to me, my supervisor was sensitive to my personal needs.		0.537
80	In explaining the outcome of the performance appraisal to me, my supervisor treated me more as a friend than as an employee.		0.507
76	In explaining the outcome of the performance appraisal to me, my supervisor expressed regret when decisions negatively affected me.		0.496
74	In explaining the outcome of the performance appraisal to me, my supervisor was very clear.		0.419
84	In explaining the outcome of the performance appraisal to me, my supervisor made decisions in a reasonable way.	0.348	0.417
79	In explaining the outcome of the performance appraisal to me, my supervisor was aware of my rights as an employee.		0.361
72	In explaining the outcome of the performance appraisal to me, my supervisor was always polite to me.		0.344
68	The outcome of the performance appraisal process was not fair, considering my responsibilities.		0.540
62	The outcome of the performance appraisal process meant that I could receive a more appropriate salary at another organization.		0.526
61	The outcome of the performance appraisal process meant that I was paid significantly less than other employees with similar jobs in the organization.		0.525
69	The outcome of the performance appraisal process was not fair, considering my experience level.	0.351	0.525

63	The outcome of the performance appraisal process meant that I could receive more appropriate assignments at another organization.	0.515
58	The outcome of the performance appraisal process demonstrated that the organization rewards employees with little regard for how well they perform.	0.366
73	In explaining the outcome of the performance appraisal to me, my supervisor frequently let me down.	0.341
52	The performance appraisals process at work considered factors beyond my control that influenced my performance.	-0.303

Note: Blank cells indicate loadings less than .30.

Table 32: Factor Intercorrelations for Work Context

Selection Context			
Factor	PJ	IJ	DJ
PJ	--		
IJ	0.505	--	
DJ	0.363	0.131	--

Performance Appriaisal Context			
Factor	PJ	DJ	DI
PJ	--		
IJ	0.664	--	
DJ	0.266	0.177	--

Note: PJ = Procedural Justice, IJ = Interactional Justice, DJ = Distributive Justice.

Table 33: Percentage of Variance Accounted for by Factors in

Selection Context		
Factor	Factor Rank	Variance
Procedural Justice	1	25.5%
Interactional Justice	2	8.1%
Distributive Justice	3	6.1%
Total		39.7%

Performance Appraisal Context		
Factor	Factor Rank	% Variance
Procedural Justice	1	35.1%
Interactional Justice	2	7.0%
Distributive Justice	3	5.2%
Total		47.3%

Table 34: Cross-Validation of Exploratory Factor Structure from Selection Context on Performance Appraisal Context Items

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	153	3396.7	22.20	--	--	--	--	--	10.32	3432.70
Selection	135	530.55	3.93	0.92	0.89	0.91	0.89	0.08	1.77	805.75

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figure 16 for a description of the model.

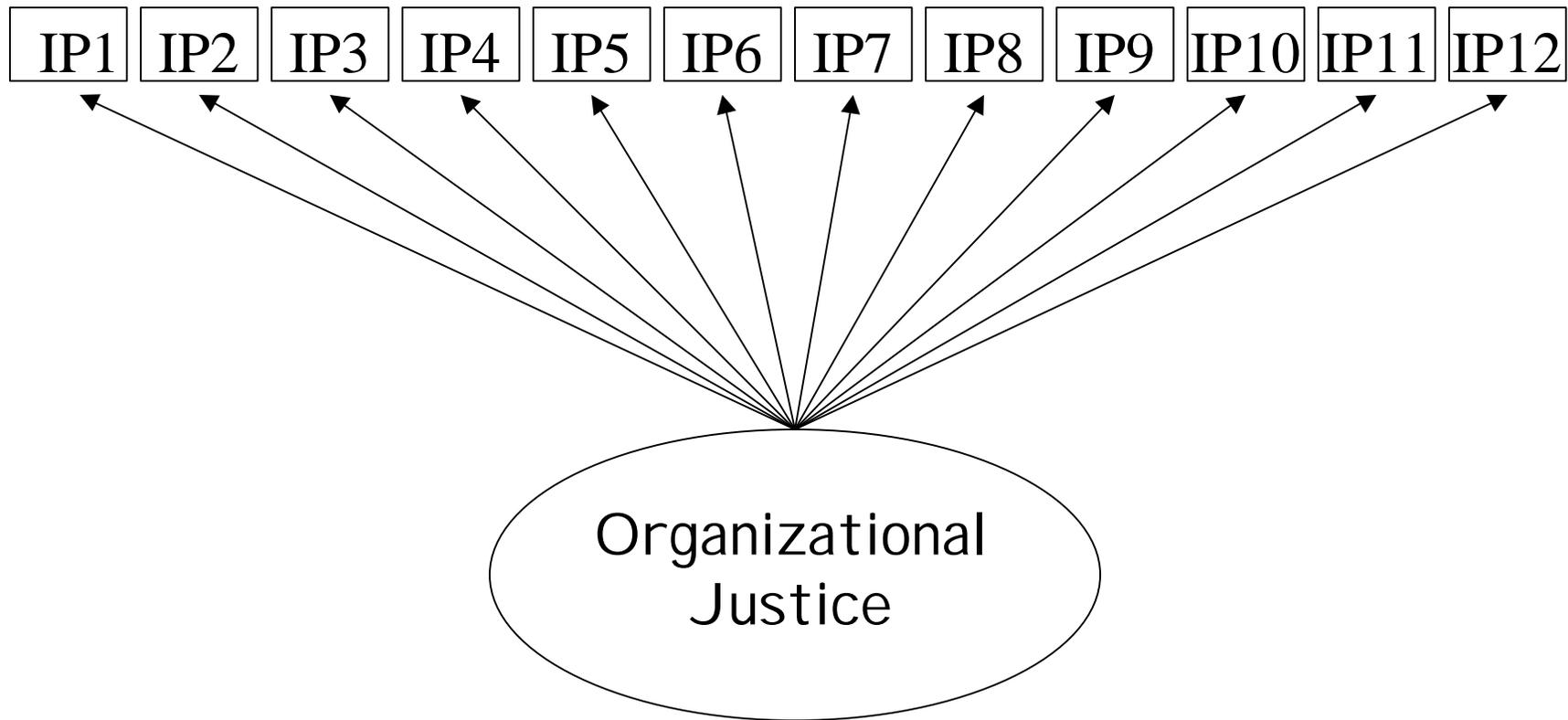
Table 35: Cross-Validation of Exploratory Factor Structure from Performance Appraisal Context on Selection Context Items

Model	df	χ^2	χ^2/df	GFI	AGFI	IFI	CFI	RMSEA	ECVI	AIC
Null	153	2476.31	16.19	--	--	--	--	--	9.27	2512.31
PA	135	417.15	3.09	0.95	0.93	0.91	0.90	0.07	1.24	593.50

Note: GFI = Goodness of Fit Index (Joreskog & Sorbom, 1984), AGFI = Adjusted Goodness of Fit Index (Joreskog & Sorbom, 1984), IFI = Incremental Fit Index (Bollen, 1989a), CFI = Comparative Fit Index (Bentler, 1990), RMSEA = Root Mean Square Error of Approximation (Steiger, 1990), ECVI = Expected Cross-Validation Index (Browne & Cudeck, 1989), AIC = Akaike Information Criterion (Akaike, 1973). See Figure 17 for a description of the model.

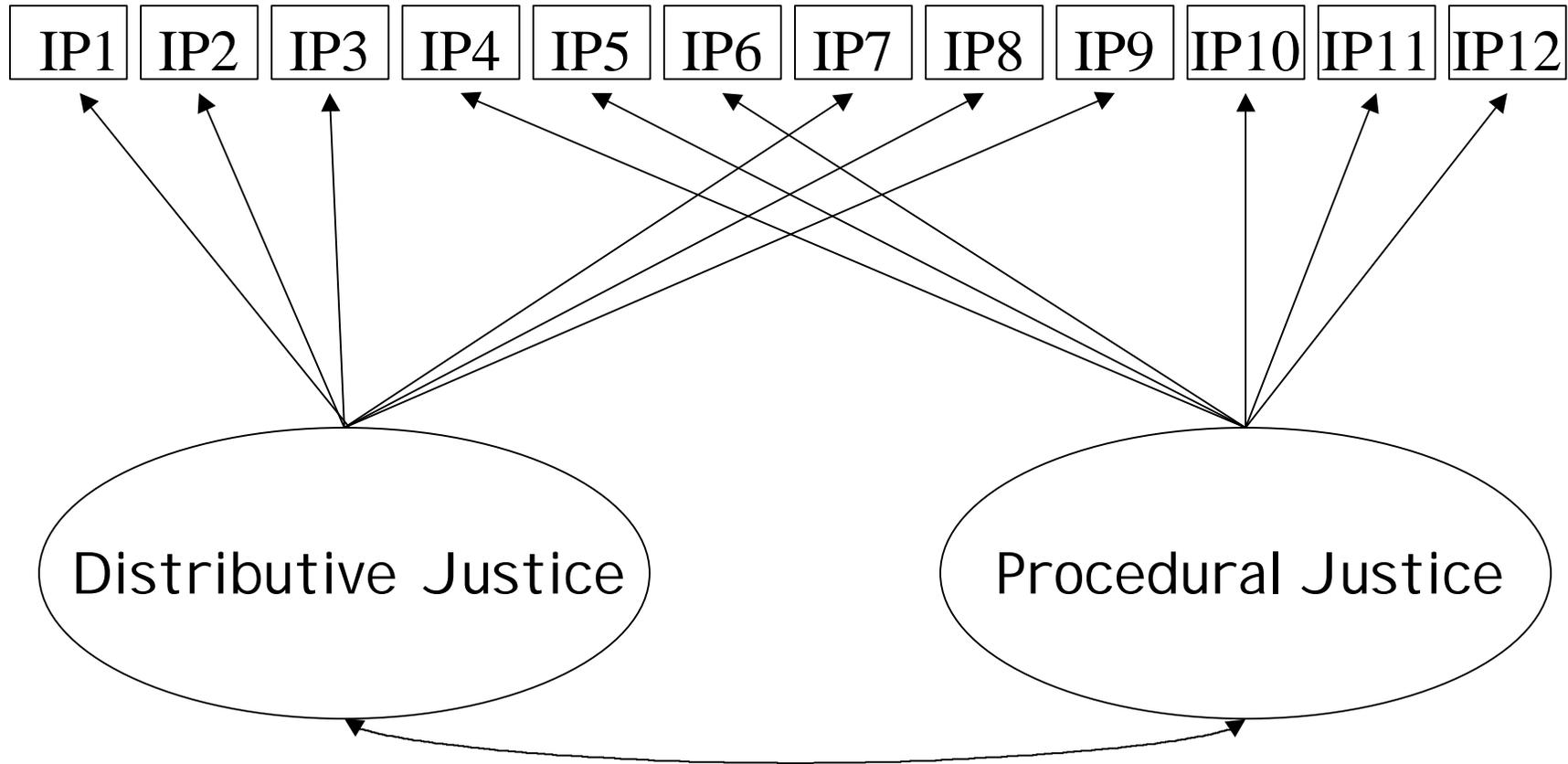
Figures

Figure 1: One-Factor Model of Organizational Justice (e.g., Adams, 1965)



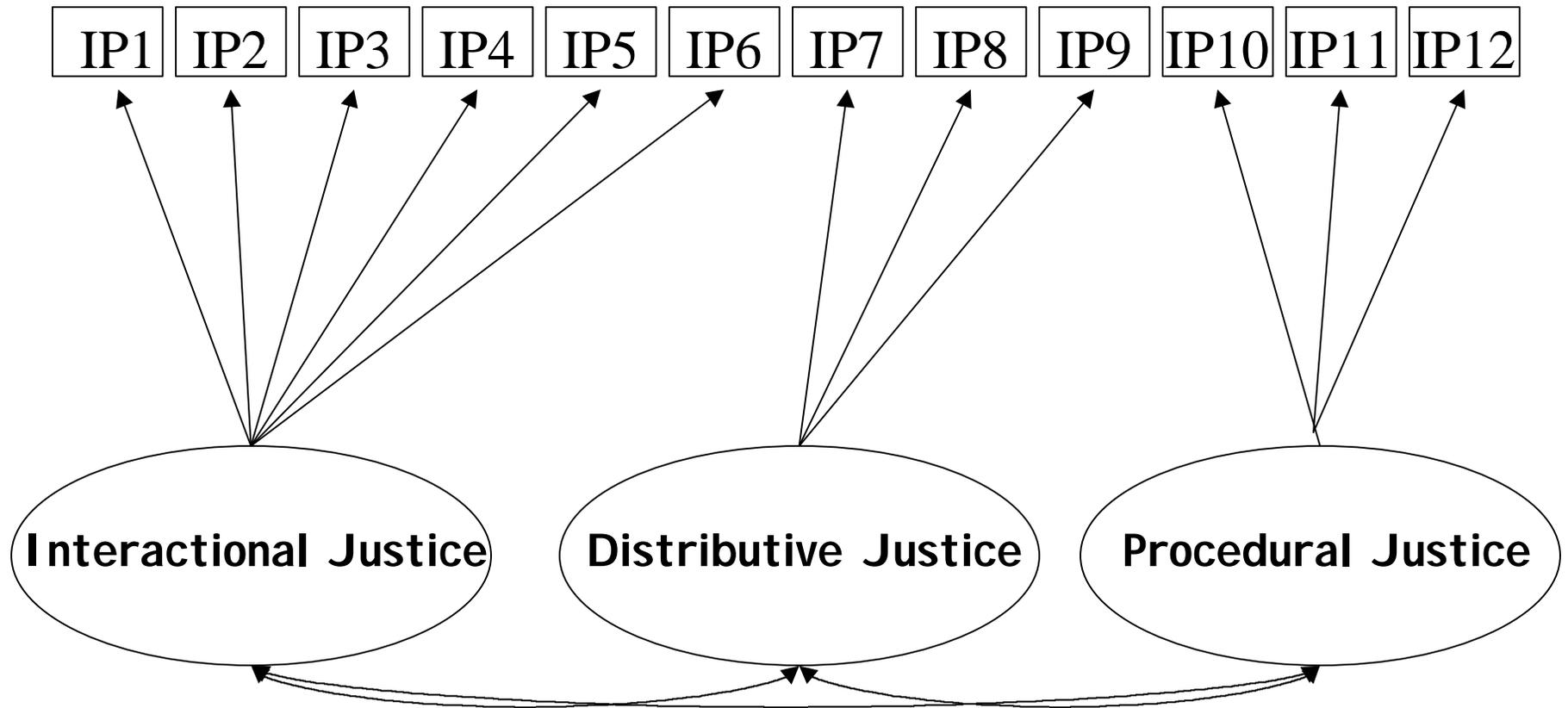
Note: IP = Item Parcel. See Table 7 for item-to-parcel links.

Figure 2: Two-Factor Model of Organizational Justice (e.g., Greenberg, 1986)



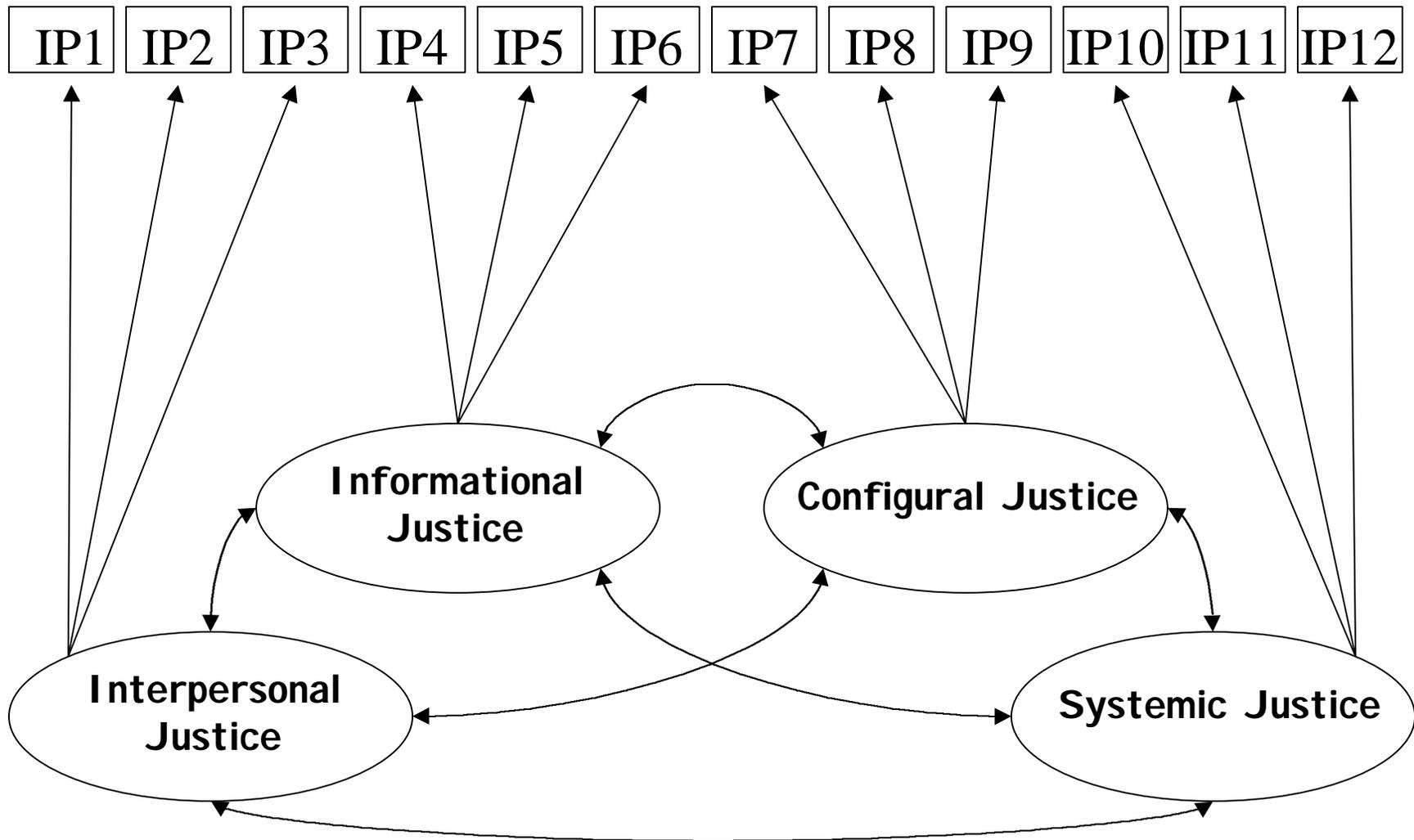
Note: IP = Item Parcel. See Table 7 for item-to-parcel links.

Figure 3: Three-Factor Model of Organizational Justice (e.g., Bies & Moag, 1986)



Note: IP = Item Parcel. See Table 7 for item-to-parcel links.

Figure 4: Four-Factor Model of Organizational Justice (e.g., Greenberg, 1993b)



Note: IP = Item Parcel. See Table 7 for item-to-parcel links.

Figure 5: Scree Plot for Revised Exploratory Factor Analysis

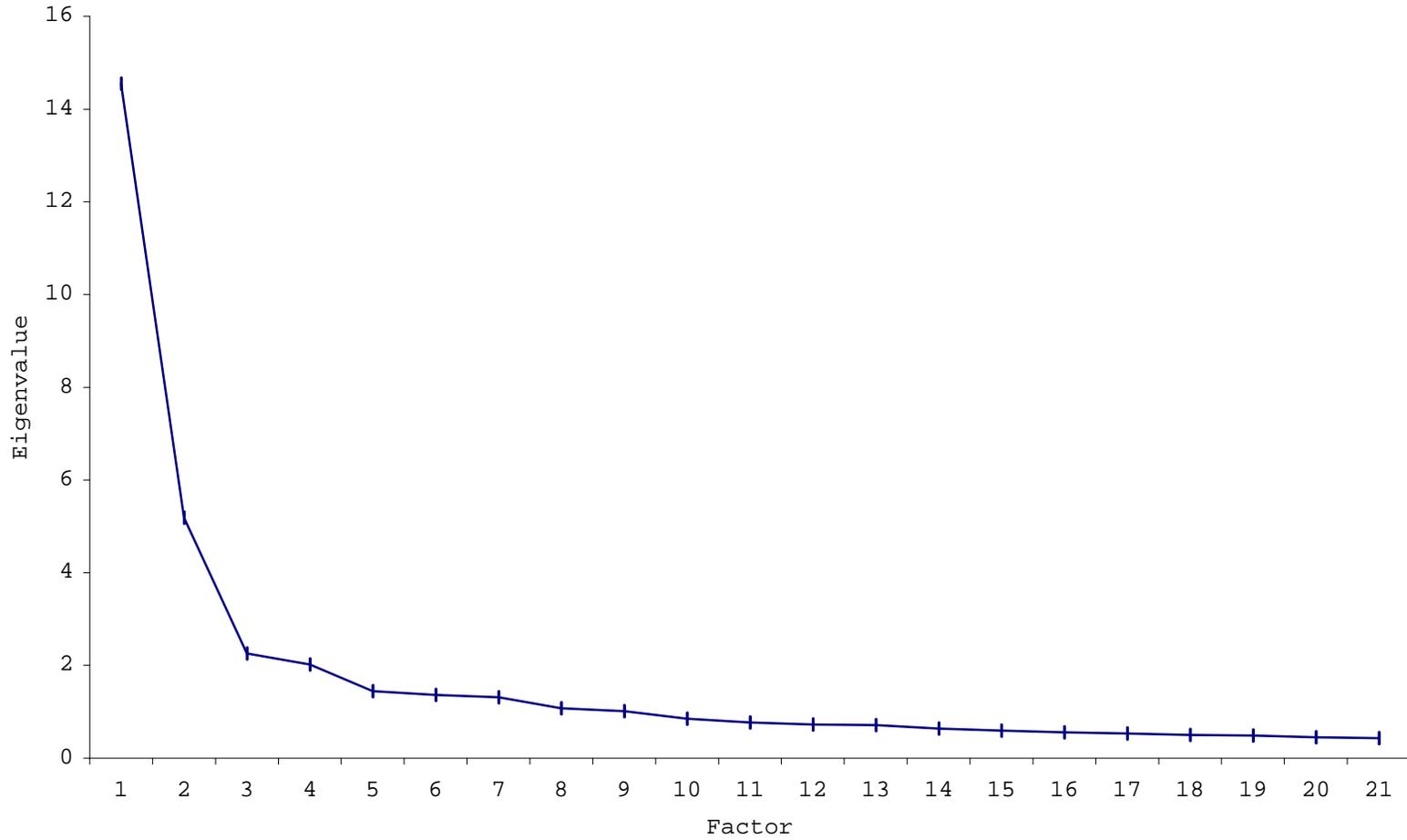


Figure 6: Scree Plot for High Satisfaction Subgroup

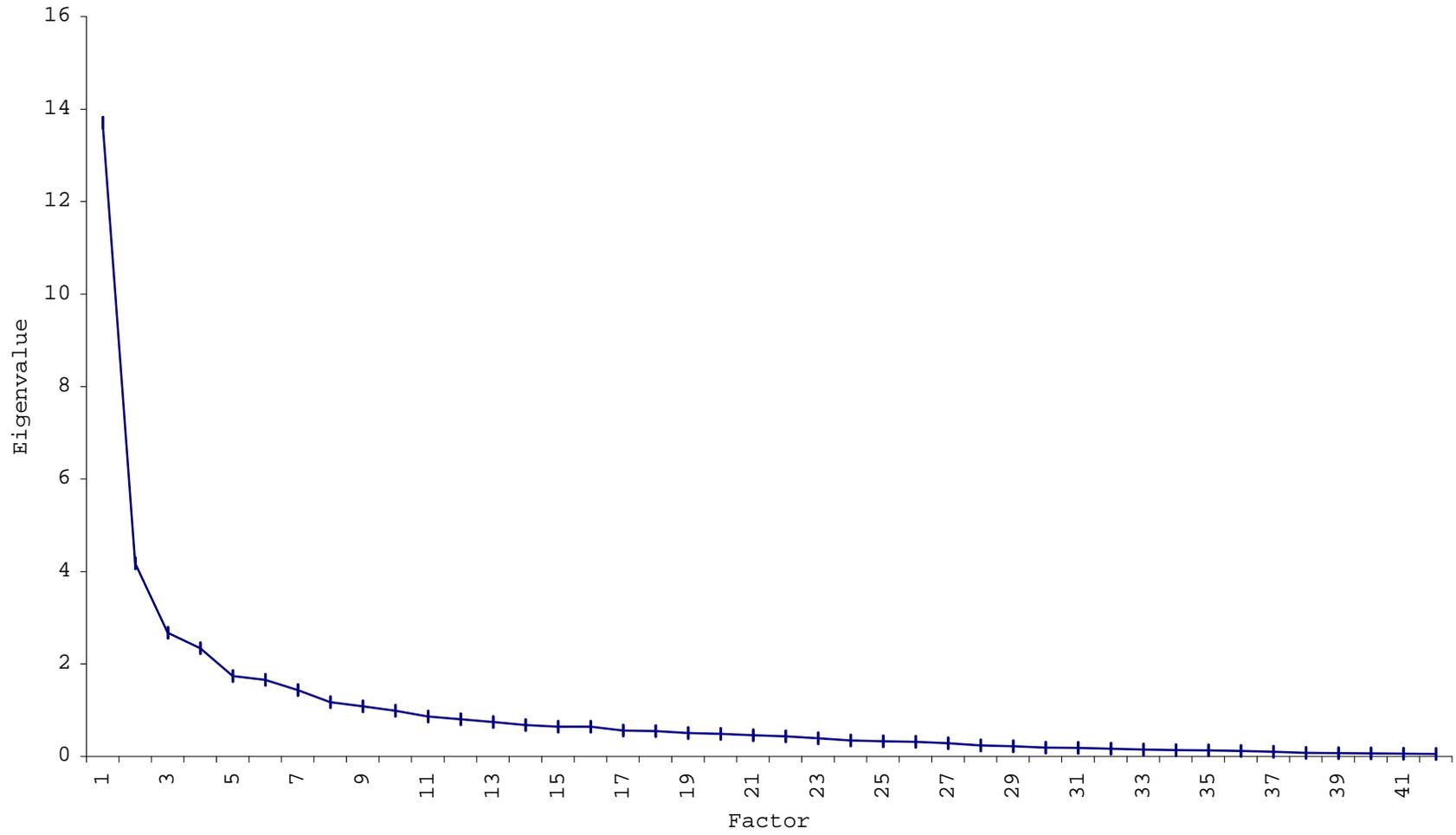


Figure 7: Scree Plot for Low Satisfaction Subgroup

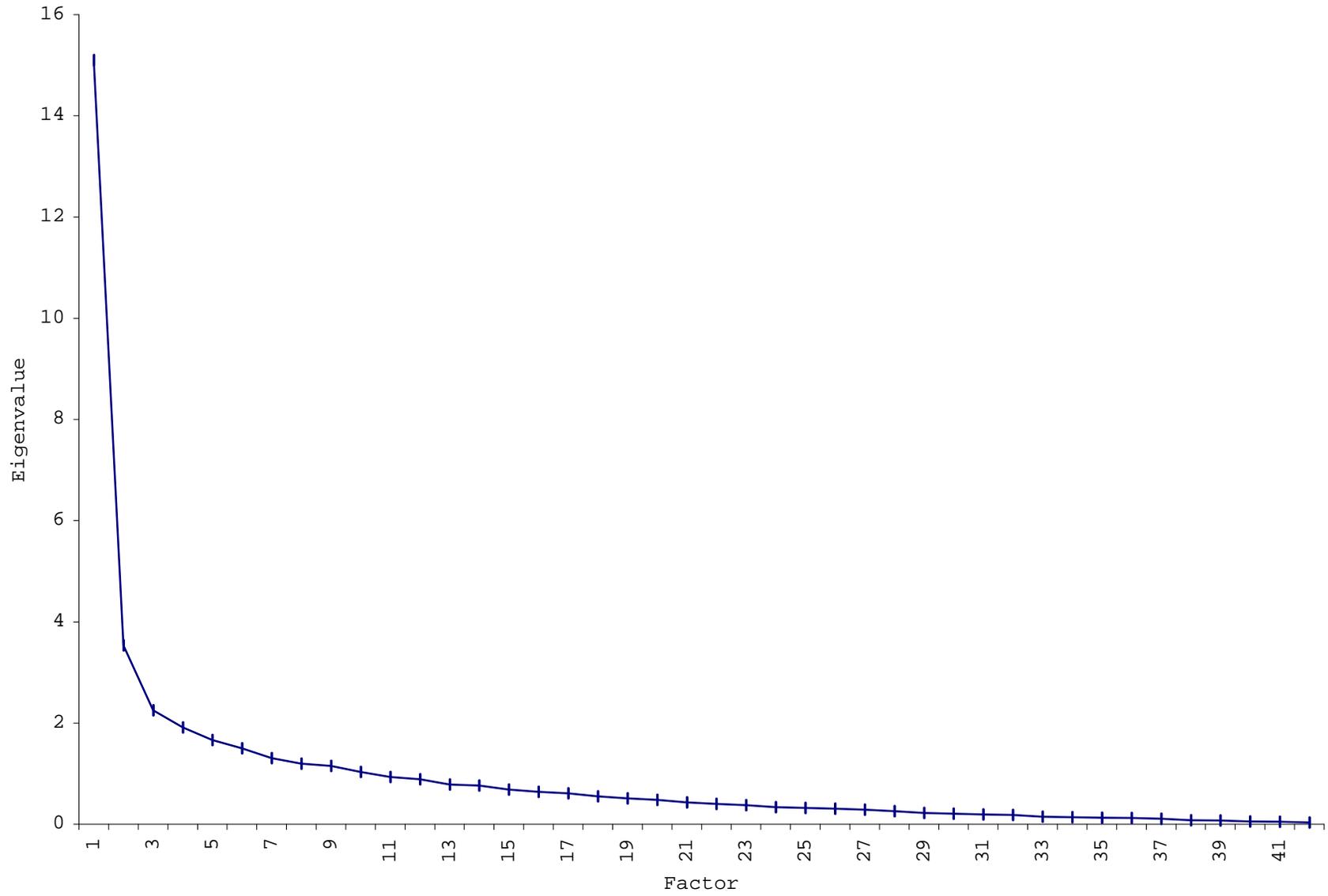


Figure 8: Scree Plot for Organizational Sample

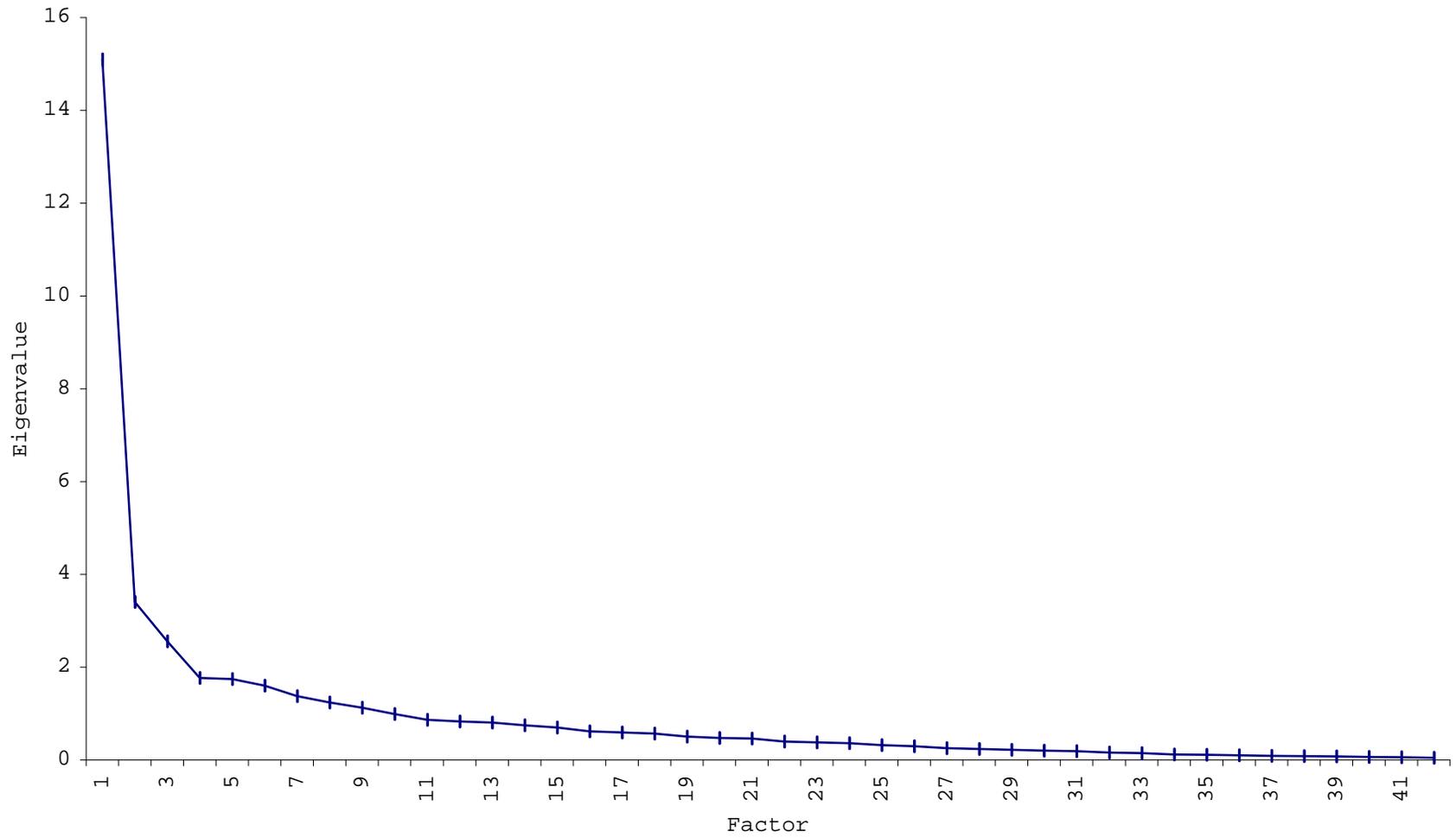


Figure 9: Scree Plot for Student Sample

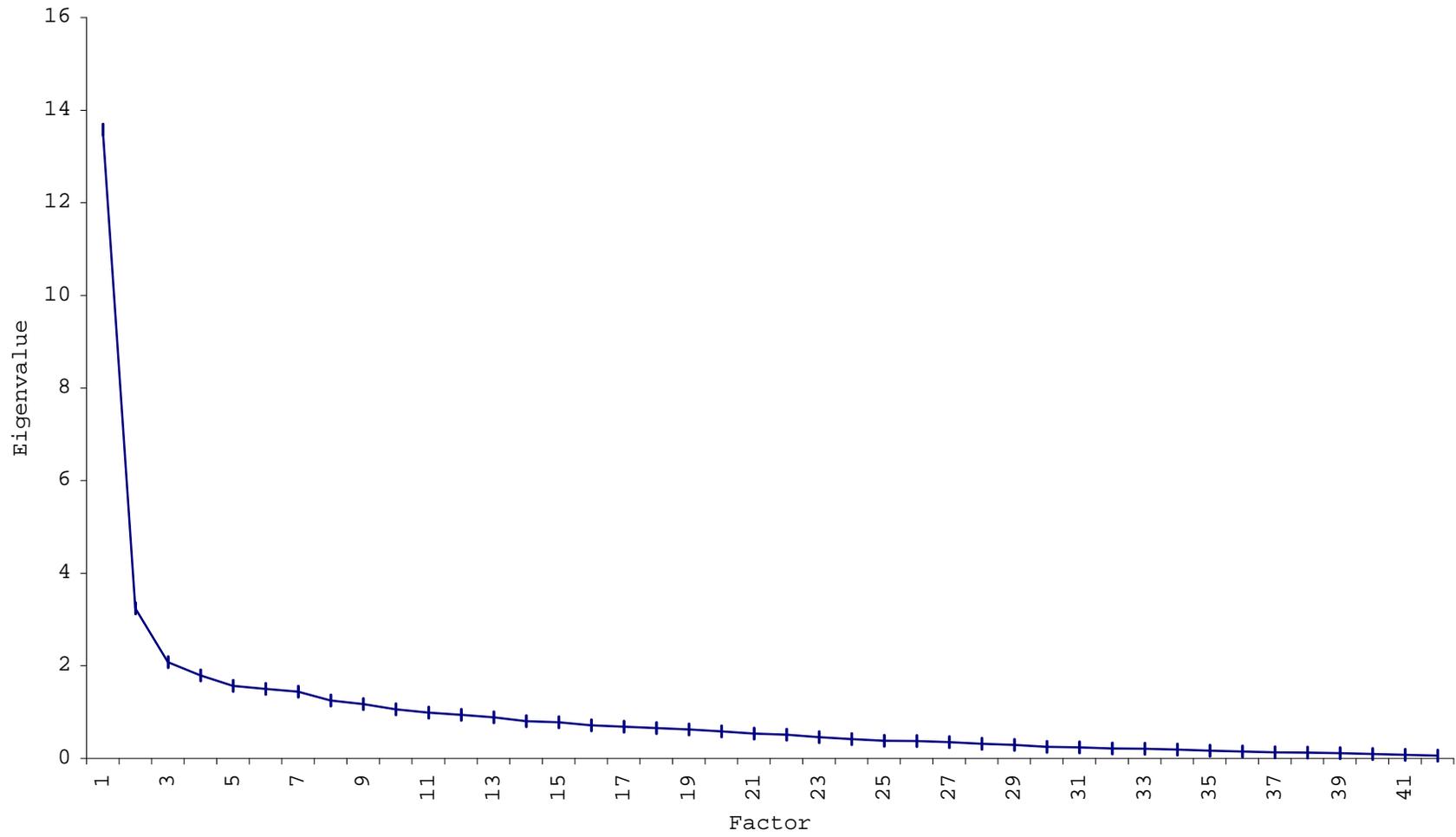


Figure 10: Exploratory Model of Organizational Justice from High Satisfaction Subgroup

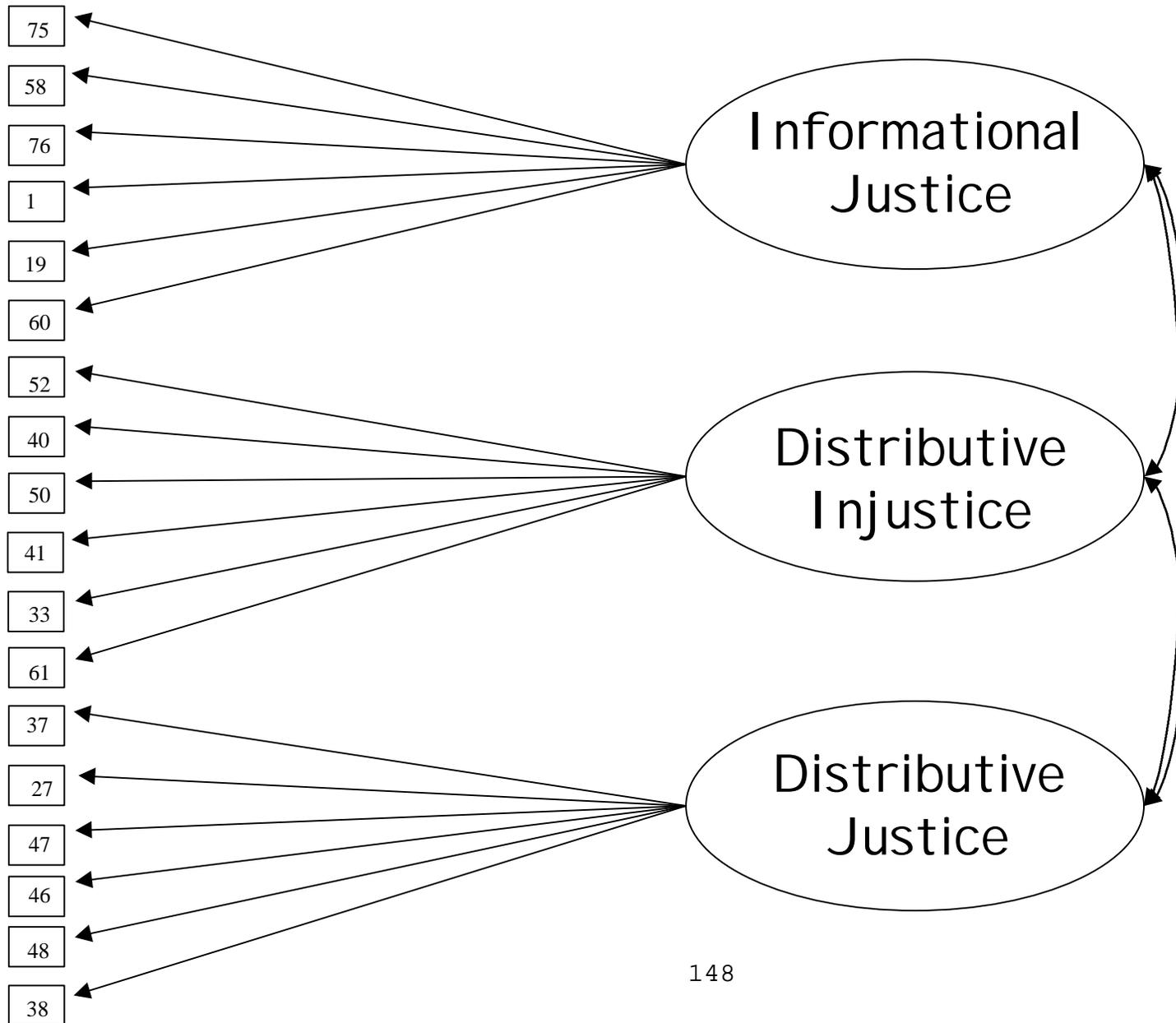


Figure 11: Exploratory Model of Organizational Justice from Low Satisfaction Subgroup

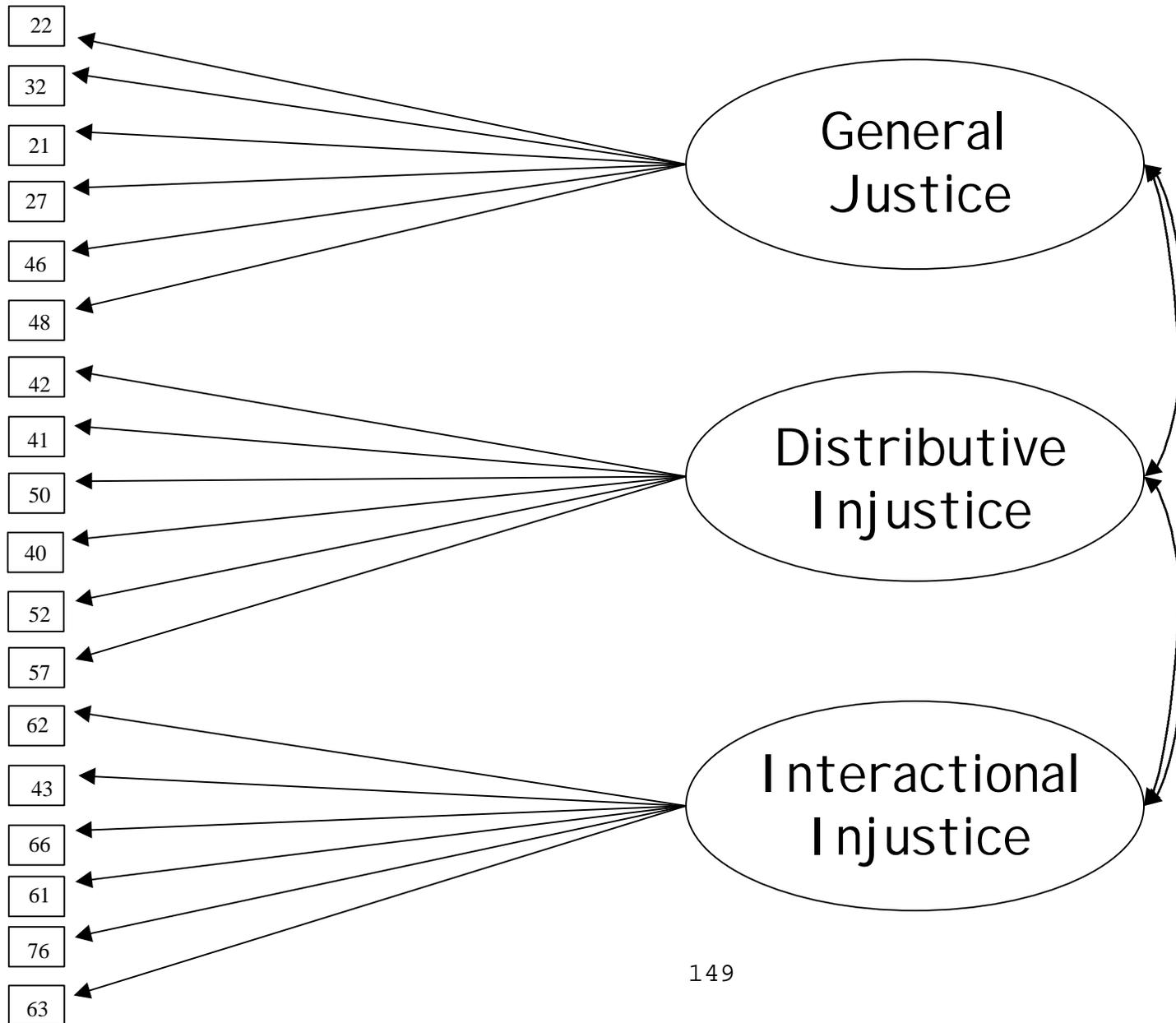


Figure 12: Exploratory Model of Organizational Justice from Organizational Sample

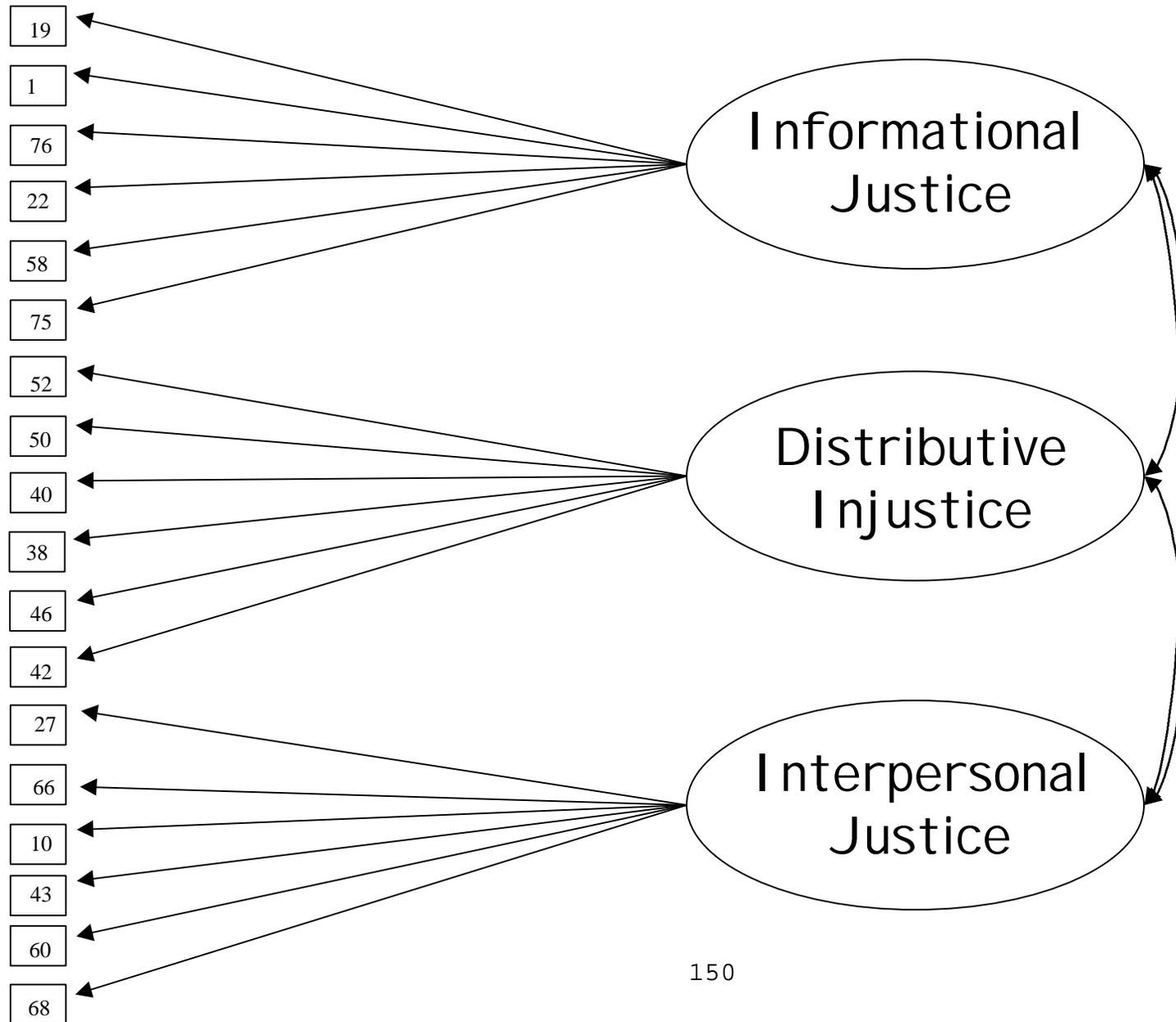


Figure 13: Exploratory Model of Organizational Justice from Student Sample

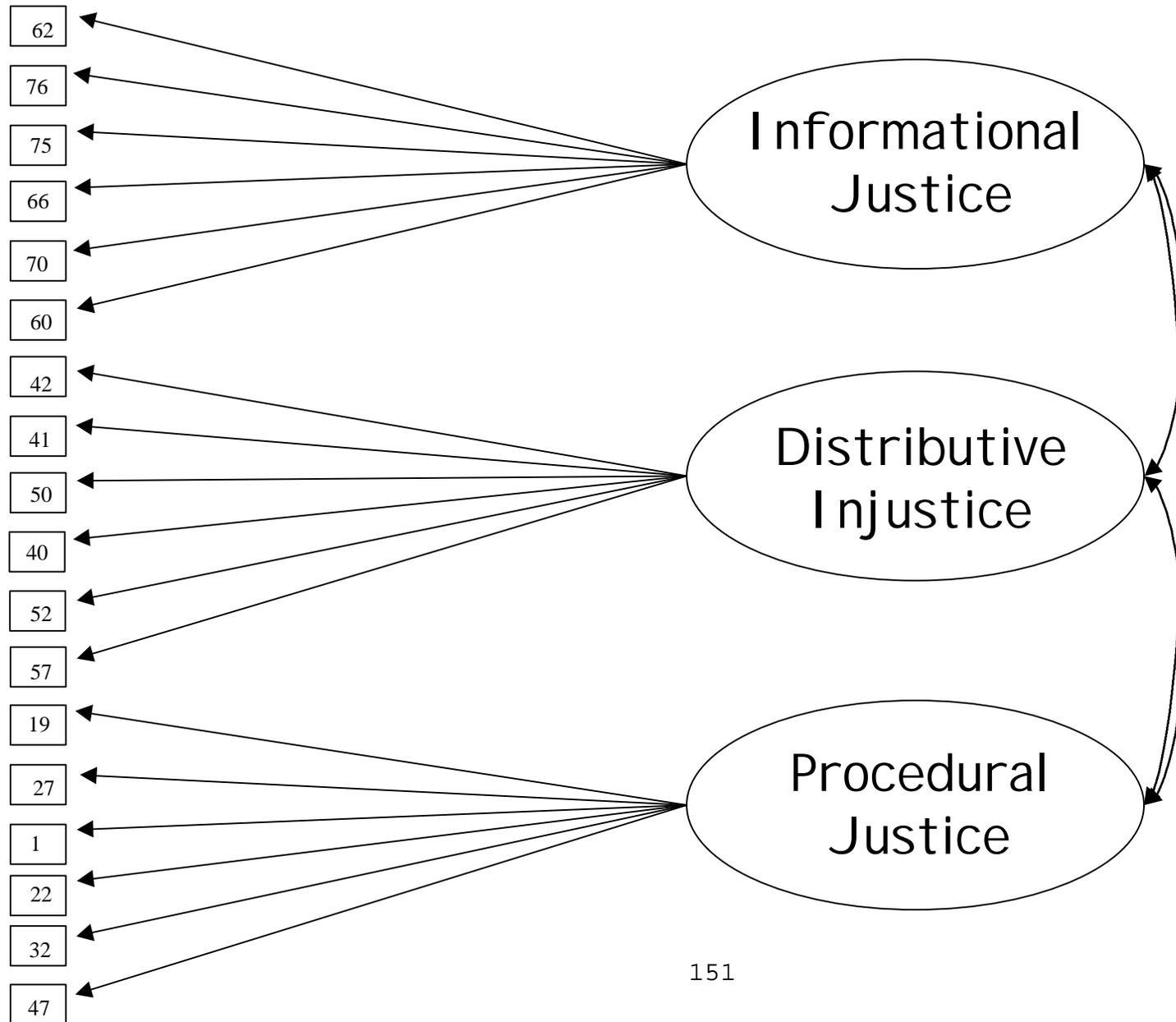


Figure 14: Scree Plot for Selection Context

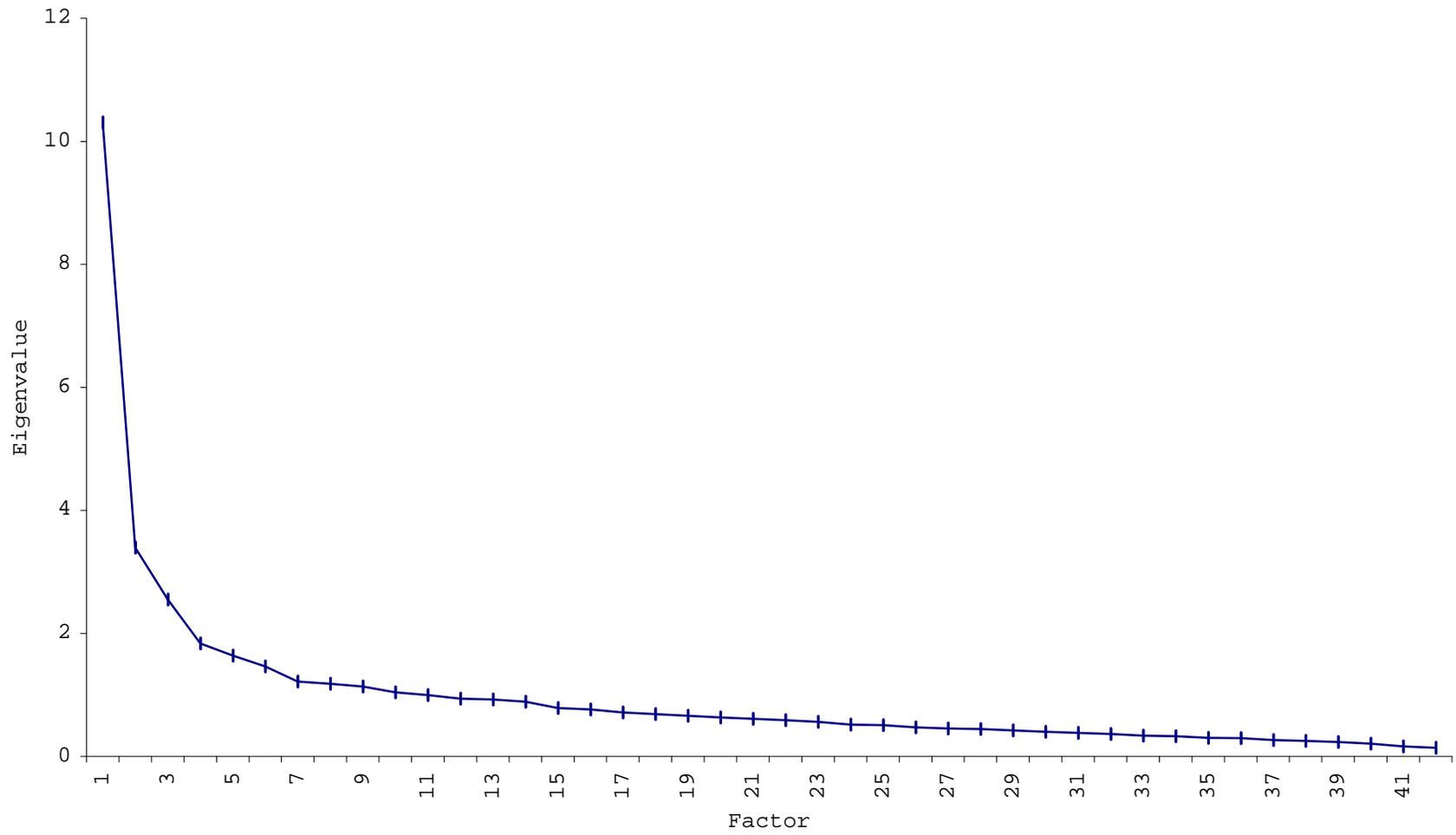


Figure 15: Scree Plot for Performance Appraisal Context

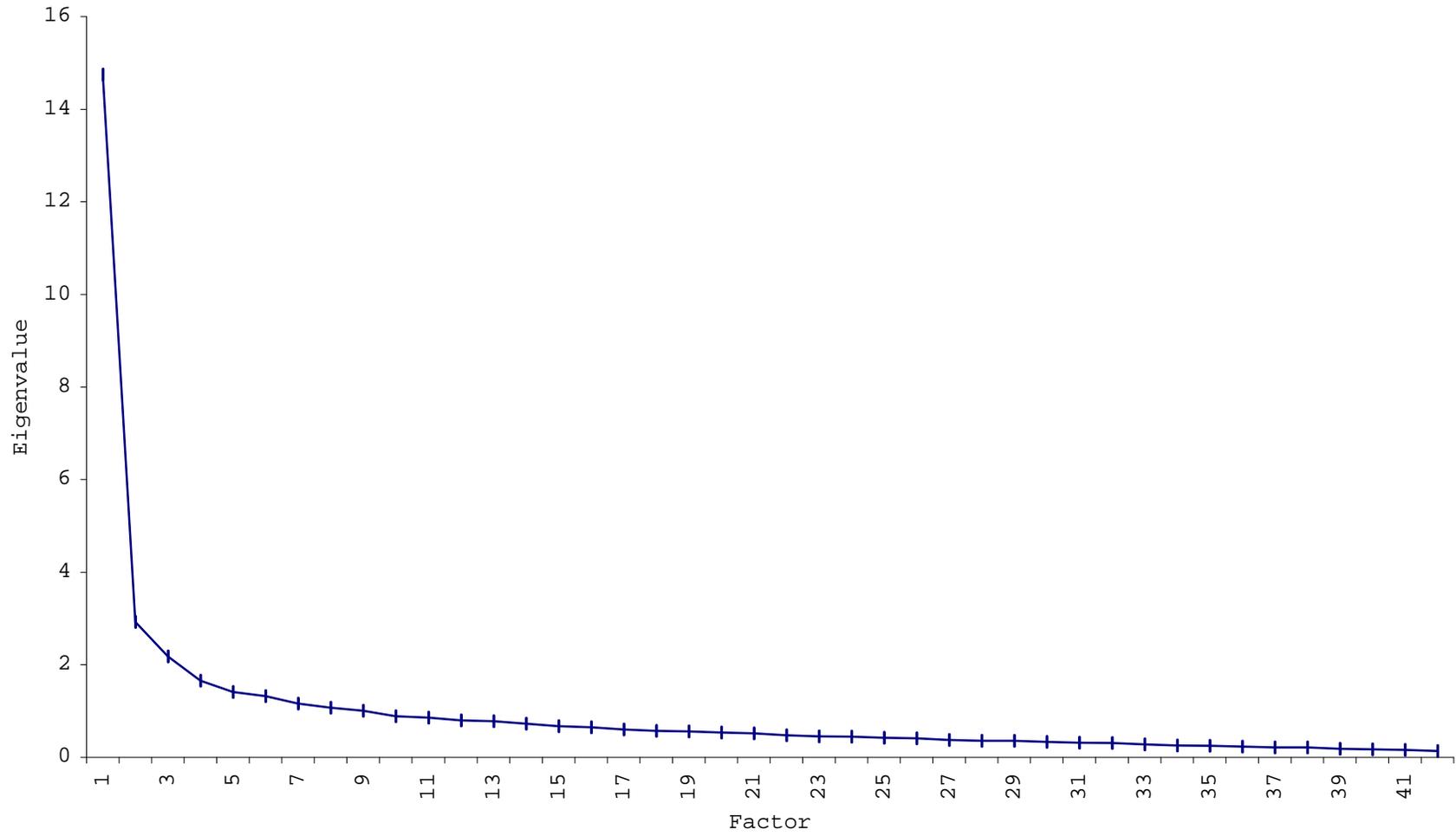


Figure 16: Exploratory Model of Organizational Justice from Selection Context

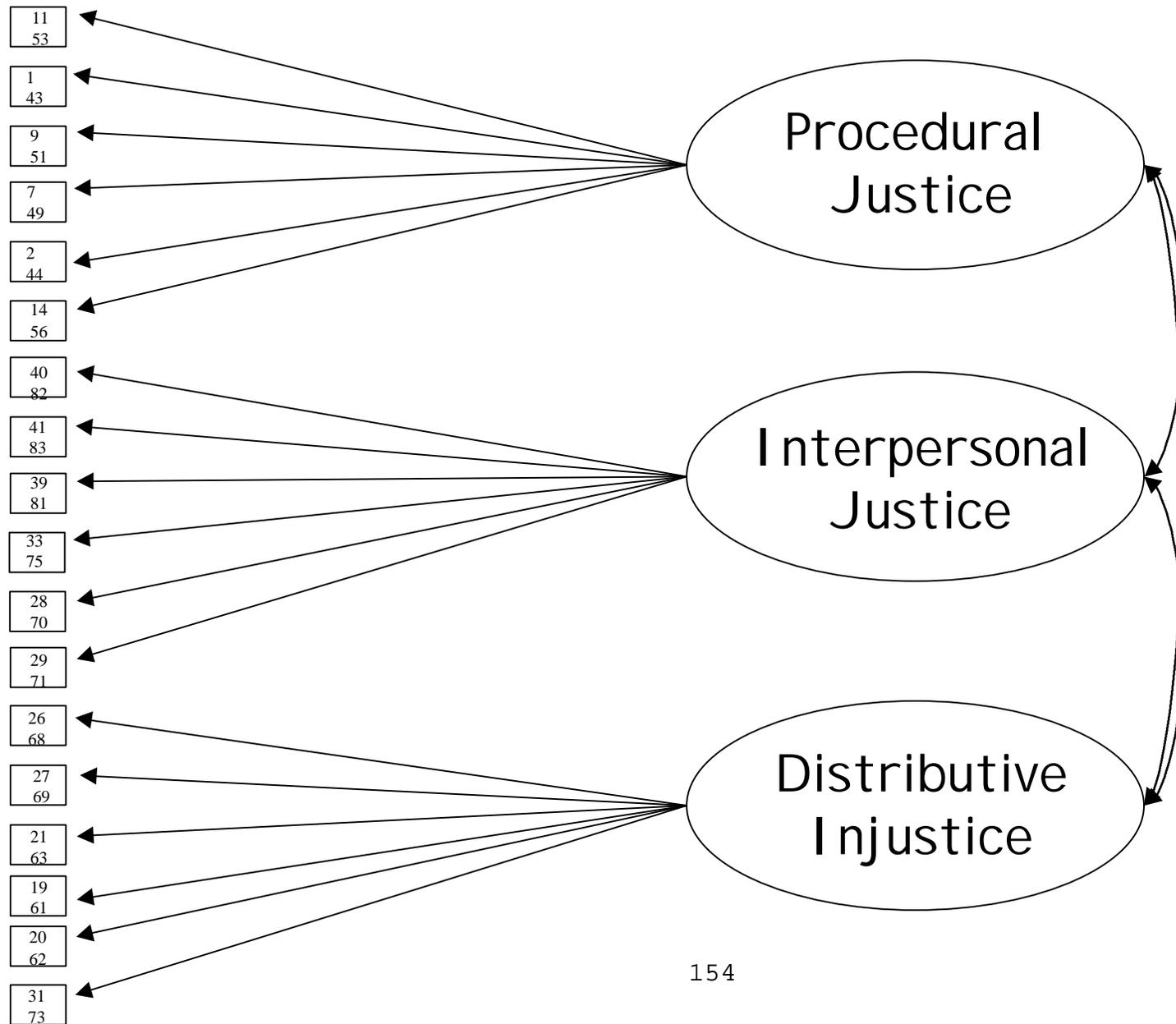
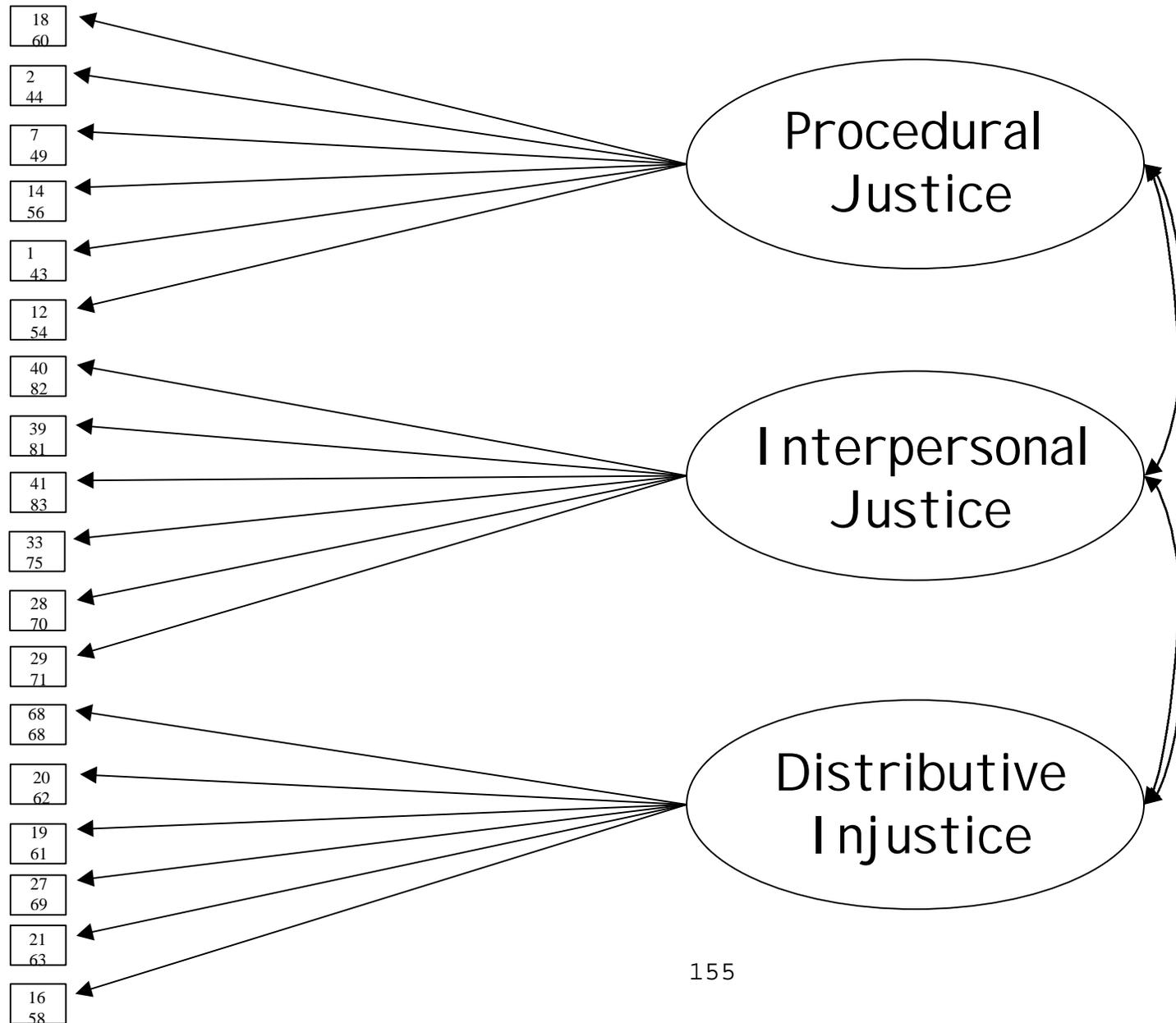


Figure 17: Exploratory Model of Organizational Justice from Performance Appraisal Context



Vita

TIMOTHY P. MCGONIGLE

Education

Ph.D. Virginia Polytechnic Institute and State University 1999
Major: Industrial & Organizational Psychology

M.A. Stephen F. Austin State University 1995
Major: Industrial & Organizational Psychology
Minor: Statistics

B.A. Southwestern University 1992
Major: Experimental Psychology

Present Position

Research Scientist, American Institutes for Research. Occupational Analysis for Health Care Financing Administration (1999 -). Currently responsibilities involve facilitating an effort to build a workforce analysis and reporting system for the Health Care Financing Administration (HCFA). Based on AIR's HR systems and concepts developed in work for the U.S. Department of Defense, this system will provide HCFA with a sound, rational basis for strategic planning, hiring, training, and other business-relevant functions.

Research Scientist, American Institutes for Research. Occupational Analysis for a Department of Defense Agency (1999 -). Current responsibilities involve the development and implementation of a revised occupational structure and associated applications. Specific duties include: designing, conducting and reporting statistical analyses; leading focus groups of senior Agency representatives to evaluate the utility of analytic information; briefing senior agency clients on technical aspects of project; acting as intra-agency liaison to ensure cross-project technical consistency; managing an occupational information database; developing analysis plans to support future Agency activities and designing and producing ad hoc reports for senior Agency contacts.

Professional Experience

Research Associate, American Institutes for Research. Occupational Analysis for a Department of Defense Agency (1998-99). This project involved the development, validation and extension of a skills-based database for a Department of Defense Agency. Primary responsibilities included: providing

technical expertise to develop, implement and evaluate the psychometric characteristics of the skills inventory and briefing agency clients on technical aspects of the project. Additional responsibilities included conducting statistical analysis of job analysis data; developing performance evaluation instruments; facilitating focus groups in the creation of job analysis and performance evaluation instruments and writing technical reports documenting the development of the previously mentioned applications.

Research Associate, American Institutes for Research. Evaluation and revision of a Department of Defense Agency assessment process (1998). This project involved the development and validation of an assessment system for a Department of Defense Agency. Specific duties included: designing paper-and-pencil (biographical data inventories, personality inventories, assessment center exercises) behavioral (structured interviews) and indirect measures (personality assessment systems, integrity tests, content analysis systems) of performance-related constructs, developing, conducting and reporting analyses to evaluate the validity of the proposed measures, writing technical reports documenting the development and validation of the assessment system and briefing Agency clients on technical aspects of the project.

Statistical Consultant, ChangeTechnologies (1997-1998). I created an evaluation system used in multiple high performance organizations to evaluate the impact of high performance programs and evaluated the psychometric characteristics of multiple team-based surveys. I also provided technical consultation on psychometric and research design issues to the Principal Investigator.

Instructor, Virginia Polytechnic Institute and State University (1995-1997). I independently developed and administered courses in Industrial/Organizational Psychology and Introduction to Psychology.

Graduate Research Assistant, Department of Computer Science, Virginia Polytechnic Institute and State University (1997). I devised a 3-year, university-wide evaluation program for the National Digital Library of Theses and Dissertations Initiative, which included the ground-up development of five separate measurement tools. These surveys are currently used as the basis for similar programs at universities worldwide.

Graduate Research Assistant, Department of Psychology, Virginia Polytechnic Institute and State University (1996). I developed and managed a database for a large-scale study of leadership behavior among ROTC cadets and supervised collection of expert ratings of cadet performance. I also conducted preliminary analyses of existing data.

Assessor, Tennessee Valley Authority (1997) I completed a 40-hour rater calibration program and evaluated participants in a managerial assessment center. I also provided feedback on assessment system development.

Intern, Ford Motor Company (1994). I conducted task reviews for an organization-wide maintenance function and developed a measure of commitment to a quality initiative for a domestic auto manufacturer. I provided a technical summary of both processes.

Intern, Internal Revenue Service (1991). I investigated high-technology training techniques and developed a survey of current training needs for the Internal Revenue Service. I provided a technical summary of the findings.

Employment History

1999-present	Research Scientist; Washington Research Center, American Institutes for Research, Washington, DC
1998-1999	Research Associate; Washington Research Center, American Institutes for Research, Washington, DC
1997-1998	Statistical Consultant; ChangeTechnologies, Pittsburgh, PA
1997	Assessor, Tennessee Valley Authority, Knoxville, TN
1996-1997	Graduate Research Assistant, Departments of Psychology and Computer Science, Virginia Polytechnic Institute and State University, Blacksburg, VA
1997	Instructor, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA
1995-1996	Graduate Teaching Assistant, Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA
1994	Intern, Ford Motor Company, Bedford, IN
1993-1995	Graduate Teaching Assistant, Department of Psychology, Stephen F. Austin State University, Nacogdoches, TX
1991	Intern, Internal Revenue Service, Austin, TX

Professional Affiliations

American Psychological Association
American Psychological Society
Society for Industrial and Organizational Psychology
Personnel Testing Council of Metropolitan Washington

Publications

Facteau, J.D., Facteau, C.L. & McGonigle, T.P. (under review). Characteristics of Ratings and Managers' Reactions to Multisource Performance Appraisal Feedback. Manuscript submitted to *Journal of Organizational Behavior*.

Fox, E.A., Eaton, J.L., McMillan, G., Kipp, N.A., Mather, P., McGonigle, T.P., Schweiker, W. & DeVane, B. (1997). Networked Digital Library of Theses and Dissertations. *D Lib* [on-line]. Available:
www.dlib.org/dlib/september97/theses/09fox.html

Hauenstein, N.M.A, McGonigle, T.P. & Flinder, S.W. (under review). The relationship between procedural and distributive justice: A meta-analysis. Manuscript submitted to *Educational and Psychological Measurement*.

McGonigle, T.P. & Hauenstein, N.M.A. (under review). Rater Ability, Motivation and Cognitive Ability Effects on Self-Appraisal Accuracy. Manuscript submitted to *Journal of Applied Psychology*.

Technical Reports

Button, S., Searcy, C., McGonigle, T., Connelly, S., Calderon, R. & Mumford, M. (1998, October). *Measurement Development Report I* (CIA Report, Contract No.: 97-I-176000-000) Washington, D.C.: The American Institutes for Research.

C² Multimedia and American Institutes for Research (1999, December). *Draft Human Resource (HR) Plan Validation Report* (OPM Report, Contract No.: OPM-97-0096). Falls Church, VA: Author.

Connelly, M.S., Searcy, C.A., McGonigle, T.P. & Mumford, M.D. (1998, June). *Measure Revision and Development Report* (CIA Report, Contract No.: 97-I-176000-000) Washington, D.C.: The American Institutes for Research.

McGonigle, T.P. (1994). *Development of a measure of commitment to the TPM process at Ford*. Bedford, IN: Ford Motor Company.

McGonigle, T.P. (1991). *Recommendations for the development of end user computing at the Internal Revenue Service*. Austin, TX: Internal Revenue Service.

Mumford, M., Connelly, S., Calderon, R., Russell, D., & McGonigle, T. (1998, March). *Measurement Strategy Report* (CIA Report, Contract No.: 97-I-176000-000) Washington, D.C.: The American Institutes for Research.

Mumford, M., Kirkpatrick, S., Connelly, S., & McGonigle, T. (1998, March). *Technical Report 1* (CIA Report, Contract No.: 97-I-176000-0000) Washington, D.C.: The American Institutes for Research.

Mumford, M., McGonigle, T., Russell, D., & Kirkpatrick, S. (1998, May). *Technical Report 3* (CIA Report, Contract No.: 97-I-176000-0000) Washington, D.C.: The American Institutes for Research.

Presentations

Facteau, J.D., Facteau, C.L., McGonigle, T.P. & Fredholm, R.L. (1997, April). *Characteristics of feedback and managers' reactions in multisource appraisal systems*. Poster presented at the twelfth annual convention of the Society for Industrial and Organizational Psychology, St. Louis, MO.

Facteau, J.D., Fredholm, R.L., Keller, K.D., McGonigle, T.P. & LeBreton, D.L. (1998, April). *A Further Validation of the Construct of Goal Orientation*. Poster presented at the thirteenth annual convention of the Society for Industrial and Organizational Psychology, Dallas, TX.

McGonigle, T.P. & Gustafson, S.B. (2000). *Patterns of Occupational Skills in Midlife Career Transition*. In D.G. Norris (Chair) *Cluster Analytic Approaches to Organizational Research*. Paper presented at the fifteenth annual convention of the Society for Industrial and Organizational Psychology, New Orleans, LA.

Hauenstein, N.M.A., McGonigle, T.P. & Flinder, S. (1997, April). *Meta-analysis of the relationship between procedural and distributive justice*. Poster presented at the twelfth annual convention of the Society for Industrial and Organizational Psychology, St. Louis, MO.

McGonigle, T.P. (1995, April). *Inconsistencies in assessing reliability among three or more raters*. Poster presented at the 41st annual convention of the Southwestern Psychological Association, San Antonio, TX.

McGonigle, T.P. (1995). *Assessment of multi-rater reliability and agreement*. Unpublished M.A. thesis, Stephen F. Austin State University, Nacogdoches, TX.

McGonigle, T.P. & Anson, J.E. (1995, June). *360-degree performance appraisal of a college classroom lecture*. Poster presented at the sixth annual convention of the American Psychological Society, New York, NY.

McGonigle, T.P. & Hauenstein, N.M.A. (1999). *Rating ability and motivation effects on self-evaluation accuracy*. Poster presented at the fourteenth annual convention of the Society for Industrial and Organizational Psychology, Atlanta, GA.

McGonigle, T.P. & Hauenstein, N.M.A. (2000). *An Investigation of the Dimensionality of Organizational Justice*. Poster presented at the fifteenth annual convention of the Society for Industrial and Organizational Psychology, New Orleans, LA.

McGonigle, T.P., Rossmeissl, P.G., Wright, S.L., Button, S.B. & Elaqua, T.E. (1998). *Validity of Self-Assessed Skill Proficiency Ratings*. Poster presented at the 107th annual convention of the American Psychological Association, Boston, MA.

Searcy, C.A., McGonigle, T.P., Baughman, W.A. & Ury, K. (2000). *The data model: Decisions for data collection and structuring*. In R. Klimoski (Chair) *Critical Issues in Developing and Implementing Organization-Wide HR Information Systems*. Paper presented at the fifteenth annual convention of the Society for Industrial and Organizational Psychology, New Orleans, LA.