

# PERCEPTIONS OF PROCEDURAL JUSTICE IN THE FEDERAL GOVERNMENT

By

Ellen V. Rubin

(Under the direction of J. Edward Kellough)

## ABSTRACT

Procedures guide every action taken by government. Fundamentally, procedures are used to ensure the actions of the bureaucratic state are legitimate and in accordance with the Constitution. They limit the discretion of civil servants both in their dealings with the public and in their interactions with each other. One area in which procedures are shown to be uniquely complex in government is the area of personnel management (Rainey and Bozeman, 2000; Rainey, Facer, and Bozeman, 1995). Especially in the tasks of public personnel management, court-derived procedures, rules imposed by labor contracts, and voluminous policy regulations create the perception that the rules are an unfair limit on management discretion. Many personnel reforms rest on an argument that managers need flexibility to reward high performers, correct or remove poor performers, and that this is accomplished by reducing “red tape.” Unfortunately, these changes are happening without considering the positive psychological value that rules contribute to an organization.

Procedural justice perceptions are broadly defined as judgments on the degree to which decisionmaking within an organization is viewed as just and fair (Lind and Tyler, 1988; Cohen-Charash and Spector, 2001; Colquitt, Conlan, Wessen, Porter, and Ng, 2001). These judgments, in turn, impact other attitudes and behaviors of employees such as satisfaction, organizational

citizenship behavior, and turnover. This dissertation includes three assessments: to describe the procedural justice perceptions of federal employees, to understand what influences procedural justice perceptions, and to assess how procedural justice perceptions influence other attitudes and behaviors important to organizational effectiveness. On the whole, more federal employees exhibit higher perceptions of procedural justice determinants than exhibit low perceptions. More study is needed on the association between unionization and determinants of procedural justice perceptions. Findings indicate the importance of differentiating between multiple levels of management and suggest that the perceptions of managers will not be entirely consistent with each other. Importantly, procedural justice determinants exhibit a curvilinear relationship with the filing of complaints, and alternative personnel systems appear to decrease the filing of complaints.

**INDEX WORDS:**      Procedural justice, Fairness, Civil service reform, No FEAR Act, Alternative Dispute Resolution, Unions

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By

ELLEN V. RUBIN

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M.P.A., Syracuse University, 2000

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By

ELLEN V. RUBIN

Major Professor: J. Edward Kellough

Committee: Laurence J. O'Toole  
Hal G. Rainey  
Vicky M. Wilkins

Electronic Version Approved:

Maureen Grasso  
Dean of the Graduate School  
The University of Georgia  
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## CHAPTER 1

### INTRODUCTION

“How you do something is as important as what you do” was a common phrase used by former Comptroller General David Walker when discussing managing people in the federal government (U.S. General Accounting Office 2002, p. 29). Indeed, how government manages people and makes decisions sets it apart from the private and non-profit sectors. Fundamentally, these procedures, informed by the Constitution, are the key to the legitimacy of the bureaucratic state. For civil servants, procedures guide everyday activities in formulating and implementing policy, in interacting with the public, and in interacting with their managers and peers within and across organizational boundaries. Likewise, citizen interactions with government are structured by procedures which allow for participation in decisionmaking, opportunities to present evidence in their favor, and opportunities to appeal bureaucratic decisions, in addition to procedures for choosing who will lead the ship of state.

While the purpose of procedures may be relatively benign, their impact is anything but innocuous, especially in government. One person’s procedural protection is another’s “red tape” (Kaufman, 1977). The phrase *red tape* is traditionally used as an epithet to label rules and procedures as excessive, overly-restrictive and burdensome (Kaufman, 1977; Bozeman, 2000). Studies examining the degree of formalization of government procedures and the differences in levels of formalization between the public and private sector have revealed mixed results, however, indicating that government is not necessarily more rule-bound than the private sector (Rainey and Bozeman, 2000). The exception to these findings is in the area of personnel

management, where research consistently indicates that personnel rules are more formalized, extensive, and restrictive in the public sector than in the private sector (Rainey and Bozeman, 2000; Rainey, Facer, and Bozeman, 1995).

Public sector rules for hiring, firing, disciplining, conducting performance appraisals, and interacting with employee representatives have developed over more than 100 years of statutory and case law. Since the 1960s many of the developments in personnel management have focused on providing procedural protections to public employees. The imposition of due process requirements on personnel decisions is an example of the legitimizing role of consistent procedures. Beginning with the Warren Supreme Court, a “rights doctrine” emerged which broadly aimed to protect the constitutional rights of civil servants. Prior to this time, courts had ruled that the civil rights of government employees could be restricted as a condition of their employment (Nigro, Nigro, and Kellough, 2007). Cases such as *Board of Regents v. Roth* (1972) and *Cleveland Board of Education v. Loudermill* (1985) established that employees have a property right in their public position, and they are entitled to be notified of the reasons for termination and provided a hearing to contest the charges before the termination takes effect.<sup>1</sup>

However, courts also consider the cost of due process requirements and have moved towards deferring to administrative discretion (Cooper, 1985; Rainey, 1997; Rosenbloom and Bailey, 2003). In the case *Matthews v. Eldridge* (1976), the court explicitly acknowledged the need to adjust due process requirements when considering the fiscal and administrative burdens that would be placed on government.<sup>2</sup> This deference to management discretion in light of the

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<sup>1</sup> Public employees have a property interest in their positions once they complete a probationary period and if “just cause” is required for demotion or termination. The “just cause” requirement is satisfied by the due process requirements established in *Roth* and *Loudermill* (Lindquist and Condrey, 2006).

<sup>2</sup> The two other components determining the required level of due process outlined in *Eldridge* include a consideration of private interests and the potential impact of the government making an incorrect decision on the

cost of the administrative burden continued with *Connick v. Myers* (1983), in which the courts decided that removing an employee for speech not related to a matter of public interest was not a violation of first amendment rights (Cooper, 1985). Furthermore, *Loudermill*, in which the courts required that hearings be held before terminations, also indicated it was acceptable for hearings to be held after suspensions were imposed (Rosenbloom and Bailey, 2003), due to the need to consider administrative costs as outlined in *Eldridge*.

In addition to the courts weighing the costs of due process requirements in personnel management, administrators and elected officials are weighing the costs and are beginning to take action. At the state level, there is a trend towards changing the standards for removing civil service employees to an at-will framework to minimize the burden of due process requirements on managers. The changes are intended to remove the property interest that state employees currently have in their positions. Typically, these reforms are advertised under the banner of performance improvements (Hayes and Sowa, 2006). Termination procedures are particularly impacted, especially in states like Georgia and Florida. In Georgia, the stated goals of personnel reforms included improving hiring procedures, making all newly hired employees at-will, and removing procedural requirements that delayed adverse actions, appeals, and removals of poorly performing employees (Nigro and Kellough, 2000). After the implementation of the changes, employee surveys indicated that the changes to the employment relationship resulted in perceptions that it is easier to fire employees, but that hiring procedures and procedural delays more generally did not improve (Nigro and Kellough, 2000). When comparing at-will states to traditional civil service systems, states that changed their procedures for removing poor

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interests of the employee (Cooper, 1985; Rainey, 1997).

performers are no more likely to fire civil servants, but they do remove problem employees more quickly (Selden, 2006).

Managers and elected officials at the federal level are eyeing similar changes to personnel procedures, though arguably in a more incremental and stove-piped manner. For example, in 1995, the Federal Aviation Administration was exempted from federal personnel rules relating to hiring, classification and pay, discipline and grievance rules, and labor relations because of the perception by political administrators that the traditional personnel rules inhibited the agency's ability to respond to the unique needs of the air traffic control system (U.S. General Accounting Office, 2003). In 1998, the Internal Revenue Service was granted broad authority to change hiring, classification and pay, and performance management procedures, in addition to changes in organizational structure, in the aftermath of high-profile hearings detailing alleged abuse of taxpayers by collection agents (Bertelli, 2007; Thompson and Rainey, 2003). Furthermore, in the aftermath of the 9/11 attacks, Congress granted broad authorities to both the Department of Defense and the newly created Department of Homeland Security to redesign pay and classification, performance management, discipline and appeals systems, and labor relations rules. Rules for both of these systems were bogged down in the courts for multiple years, due in part to the contention that the proposed reforms violated due process requirements. Today, both Homeland Security and Defense have rolled back their plans for changing labor relations rules because of legal defeats and pressure from a Democratically-controlled Congress. Additionally, reforms are being applied in only a limited manner to those employees who are members of bargaining units in both departments, thus excluding significant portions of the workforces.

Federal and state personnel reform efforts focus on the common denominator of process. Reforms are motivated partly by a focus only on the costs of procedures. However, procedures

can also have a positive organizational impact. Procedural justice theory, based in the field of social psychology, focuses on the positive results of rules and implementation efforts that are viewed as fair. Procedures create perceptions of workplace justice, which in turn influence workplace attitudes and behaviors, including satisfaction, turnover, and organizational citizenship behavior (Cohen-Charash and Spector, 2001). Procedural elements matter because they indicate how much people can trust the other party in a transaction (Brockner, Ackerman, and Fairchild, 2001). For example, research has found that people can experience dissatisfaction with a situation despite the receipt of favorable outcomes, due to the use of a process they view as inappropriate (Lind and Tyler, 1988). Conversely, the use of a process viewed as fair and just can make negative outcomes more palatable—an idea that is especially important in the limited resource environment of government.

### State of Knowledge

Employee perceptions of procedural justice can be broadly defined as judgments on the degree to which decisionmaking within an organization is viewed as just and fair (Lind and Tyler, 1988; Cohen-Charash and Spector, 2001; Colquitt, Conlan, Wessen, Porter, and Ng, 2001). These judgments, in turn, impact other attitudes and behaviors of employees such as satisfaction, organizational citizenship behavior, and turnover. Theory on procedural justice has evolved to consider both formal rules and the interpersonal treatment that occurs during decisionmaking, linking objective and subjective elements (Tyler and Balder, 2003; DeCramer and Tyler, 2005). Said in another way, both the rules themselves and the manner in which they are implemented influence procedural justice perceptions (Blader and Tyler, 2003).

It is important to highlight that this theory focuses on *perceptions* of procedural justice, not on objective measures of justice, due to its roots in social psychology scholarship. Procedural justice theory reminds scholars that an agency can be in compliance with procedural requirements, as specified by court decisions, statutes, and regulations, while at the same time exhibiting low levels of procedural justice perceptions. Meeting due process requirements is necessary, but not sufficient for fostering an environment in which employees perceive that decisions are made in a procedurally just manner (Skarlicki and Latham, 1996).

Procedural justice theory has its roots in equity theory, which proposes that individuals invest time and effort into various activities when they believe they will receive benefits that are both equivalent with the effort invested and consistent with the rewards received by others making similar efforts (Adams, 1965). This interest in the fairness of outcomes evolved into distributive justice theory. The concept of distributive justice contends that social behavior is affected by “beliefs that the allocation of benefits and costs within a group should be equitable, that is, that outcomes should be proportional to the contribution of group members” (Lind and Tyler, 1988, p. 10). Procedural justice theory emerged when scholars began to focus on the manner in which people evaluate the process used to accomplish particular outcomes. Early clinical studies illustrated that procedural justice perceptions and distributive justice perceptions have independent, differential effects on various outcomes (Tyler and Lind, 1992). Initially, procedural justice theory was viewed as instrumental, in that processes were evaluated as a means to an end. It later became clear that the actual process had positive psychological value, beyond the relationship between the process and the eventual outcome. This has generally been referred to as relational procedural justice, which views process as a means to social benefits including group identity, self-esteem, and status recognition (Folger and Cropanzano, 2001).

A majority of the research on procedural justice perceptions focuses on how the concept influences other attitudes and behaviors. Common dependent variables include job satisfaction, organizational citizenship behavior and turnover intentions. Specifically, there is a positive relationship between procedural justice perceptions and job satisfaction and organizational citizenship behavior and a negative relationship with turnover intentions (Colquitt et al., 2001; Cohen-Charash and Spector, 2001). Correlations between procedural justice perceptions and job satisfaction range from 0.35 to 0.68, with organizational citizenship behavior ranging from 0.18 to 0.30, and with turnover intentions ranging from -0.02 to -0.46 (Colquitt et al., 2001).

Additionally, scholars consider the relationship between procedural justice perceptions and work-related behaviors, including the filing of various types of complaints. In particular, studies examining the filing of complaints or grievances traditionally examine the structure of the grievance system as the independent variable and the fairness perceptions associated with that particular structure as the dependent variable (Greenberg, 1990). It is only recently that scholars have considered how procedural justice perceptions, as an independent variable, are associated with the filing of grievances. However, research findings on the direction of this relationship are inconsistent. Some studies find that a decrease in procedural justice perceptions is associated with an increase in the filing of complaints (Gordon and Fryxell, 1993), while other studies find a decrease in the filing of complaints (Shapiro and Kirkman, 2001).

### Research Questions

This dissertation will build on earlier research by focusing on three research questions. First, what are the procedural justice perceptions among federal civilian employees? Although largely descriptive in nature, the answer to this question will serve to frame the remainder of the

dissertation. The second research question broadly considers what influences levels of procedural justice perceptions. The analysis will consist of three parts: (a) a replication of earlier research to better understand the operation of employee perceptions of the workplace that are associated with perceptions of procedural justice, (b) an identification of personal and organizational characteristics associated with the determinants of procedural justice, including management status, union membership, and organization of employment, and (c) a development of case studies of the organizational context of employee perceptions associated with procedural justice in selected agencies.

The third research question addressed is: how do indicators of procedural justice perceptions impact other attitudes and behaviors of federal workers? The process of answering this research question is divided in four parts. First, the relationship between determinants of procedural justice perceptions, satisfaction, turnover intentions, and the propensity to engage in citizenship behavior will be considered. This will be a replication of existing research. Second, the added effect of being a manager on the relationship between determinants of procedural justice perceptions and satisfaction, turnover intentions, and the propensity to engage in citizenship behavior will be evaluated. Concerns about fair procedures are likely to be more salient depending on one's role in the organization, for example for those whose roles in the group requires them to enforce or monitor fairness (Leventhal, 1980; Leventhal, Karuza, and Fry, 1980). Likewise, an individual's role in an organization, such as holding a management position, may provide them with additional voice opportunities and additional information on decision consistency, the level of bias suppression, and the quality of information used during decisionmaking. Despite this argument being presented nearly three decades ago, little effort has been made to test this proposition.



Third, the possible added effect of being a member of a bargaining unit on the relationship between procedural justice perceptions and the same dependent variables used in the previous two components will be analyzed. Again, there is no research assessing the differences in the effect of procedural justice perceptions between unionized and non-unionized employees. Differences could emerge for a number of reasons, including the fact that bargaining units are a sub-culture within the larger organization (Rainey, 2003). Research considering procedural justice and unions typically focuses on the impact of procedural justice perceptions on attitudes and behaviors directed towards the union (for example see Fryxell and Gordon, 1989) and not the extent to which unionization may moderate the impact of procedural justice perceptions on employer-directed attitudes and behaviors.

The fourth component of the third research question focuses on the impact of determinants of procedural justice perceptions on employee behavior, specifically the filing of complaints. Unfortunately, theories and research findings describing why individuals file complaints are inconsistent in terms of the impact of procedural justice perceptions. One theory suggests that employees file complaints when they believe justice criteria have been violated (Youngblood, Trevino, and Favia, 1992). Another theory suggests that employees who believe justice rules are being violated will stay silent because of the perception that the complaint receiver will not respond in a just or fair manner (Milliken, Morrison, and Hewlin, 2003). Research findings also conflict. A decrease in procedural justice perceptions has been associated with an increase in filings of lawsuits alleging discrimination (Goldman, 2003). Alternatively, a decrease in procedural justice perceptions has been associated with a decrease in the filing of sexual harassment complaints (Rudman, Borgida, and Robertson, 1995). In addition to conflicting findings in the literature, one could argue that the direction of causality goes in the

opposite direction, specifically, that participation in the complaint process influences perceptions of the determinants of procedural justice. To ameliorate this possibility, perceptions of the determinants of procedural justice perceptions are compared to complaints filed in the succeeding year. Furthermore, whereas the previous models will employ data at the individual level, this analysis will involve using data summarized at the agency level, because the complaint data are only available by agency.

### Data Sources

The primary data used to answer these questions will come from the 2005 Merit Principles Survey, administered by the U.S. Merit Systems Protection Board (MSPB) in the summer and fall of 2005. The 2005 survey asked questions regarding employee perceptions of the work environment, pay and supervision, and fairness in the workplace. Questions selected from the survey are used to develop an index of the determinants of procedural justice perceptions, and measures of turnover intentions, satisfaction levels, and the propensity to engage in citizenship behaviors. A series of demographic variables in the survey are used as additional controls.

The fourth part of Research Question 3 will employ variables that are not present in the survey data. Agencies are required, under the Notification and Federal Antidiscrimination and Retaliation Act of 2002 (No FEAR Act), to report the number and types of formal complaints filed each year.<sup>3</sup> The statute requires that this data be reported quarterly on agency web pages, and that annual summary data be posted going back five previous fiscal years (Congressional Research Service, 2004).<sup>4</sup> Complaint data will be operationalized as complaints filed per 1000

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<sup>3</sup> P.L. 107-174. May 15, 2002.

<sup>4</sup> For example, see [http://www.doi.gov/diversity/FY06\\_5yr\\_NPS.html](http://www.doi.gov/diversity/FY06_5yr_NPS.html).

employees in 2006. The 2006 complaint data will be compared against the 2005 survey data. This sequencing allows an examination of the relationship between perceptions expressed in 2005 and actions taken in 2006.

### Purpose and Significance

This research illustrates the utility of procedural justice theory to public administration and tests procedural justice theory in the context of the public sector. Although public administration and public personnel scholars frequently consider issues of fairness, we do not explicitly use the framework provided by procedural justice theory as a foundation for our research. This is unfortunate and surprising in light of its obvious relevance. A review of contents of *The Review of Public Personnel Administration* between 2000 and 2008 illustrates its appropriateness. During this time, articles broadly addressed issues of fairness and process in sexual harassment policies, performance appraisal, discipline and grievance systems, and whistle-blowing protections. In particular, sexual harassment policies were perceived as more fair when training was provided by the government employer (Reese and Lindenberg, 2003), and employees felt more comfortable filing sexual harassment complaints with formalized and consistent procedures (Mani, 2004). The degree to which performance appraisals are perceived as fair is influenced by voice opportunities, supervisor knowledge of performance (similar to the accuracy principle), and by fair treatment overall (Reinke, 2003; Daley, 2007). Case studies of disciplinary procedures in public organizations in Puerto Rico found variation in the formalization and consistency of policies (Pagan and Franklin, 2003). Studies examining whistle-blowing at both the federal and local level found that the degree to which the organization is characterized by a climate of justice influences the reporting of waste and fraud (Rothwell and

Baldwin, 2006; Near and Miceli, 2008). Finally, only one study explicitly used procedural justice theory to study rates of satisfaction with the outcome of third-party mediation in the U.S. Postal Service (Bingham, et al., 2000).

More broadly, studying the relationship between procedural justice perceptions and other attitudes and behaviors of civil servants is a study of the legitimacy of government action. Procedure is central to the democratic form of government and the legitimacy of American bureaucracy. Recent focus on strategic planning and performance management encourages government managers to focus on outcomes and returns on investment, ignoring how the outcomes are derived. Procedural justice theory explicitly examines the separate effects of process and outcomes on overall satisfaction and behavior.

In addition to public administration scholars overlooking procedural justice theory, social psychologists conducting research on social justice overlook public employees. The application of justice perceptions in the public sector typically focuses on the public's view of government actors. Examining the concept of procedural justice in the public sector highlights the usefulness of government survey data and enables scholars to generalize research findings across different types of organizations. Furthermore, using the easily-available and frequently-conducted governmentwide employee surveys allows researchers to generalize across different types of organizations, whereas procedural justice studies typically focus on one organization at a time.

The research questions considered in this dissertation expand on earlier work and seek to answer previously unexplored topics that can advance both public administration and procedural justice research. If the impact of manager perceptions of procedural justice is different from line employees, this may influence the success of agency change initiatives when employee buy-in is contingent on managers' trust in the new policies. Alternatively, a lack of a differential impact of

manager and line employee perceptions of procedural justice may imply that the two groups have similar information on decisionmaking procedures in the organization. For example, opportunities for voice may be no greater for managers than for employees.

If unionized employee perceptions of procedural justice are different from non-unionized employees, it identifies areas where managers and unions can work together to improve organizational culture. A lack of a differential impact of unionized and non-unionized employee perceptions of procedural justice may imply that the additional procedures required under bargaining agreements equalize procedural justice perceptions across organizations. Alternatively, a lack of a significant difference may indicate that, despite the additional procedures provided in bargaining agreements, unionized environments are no better in terms of procedural justice perceptions.

Finally, studying the relationship between procedural justice perceptions and the filing of complaints can help to resolve the current conflict in theory and research findings as summarized above. We can only test the relationship between procedural justice perceptions and the complaints that are actually filed. The counterfactual—the relationship between procedural justice perceptions and the complaints that people choose not to file—cannot be tested. Although the results here will certainly not put to rest the conflict in existing theory and research findings, it will provide evidence of the relationship in the public sector where rules regarding complaints are largely driven by judicial precedent.

In the opening section of this chapter, recent efforts to reform civil service rules at the federal and state level were briefly summarized. In general, the efforts aim to reduce or change procedures with managers being the purported beneficiaries. During these debates, few, if any, efforts are made to consider how the procedural changes might alter the attitudes and behaviors

of public employees. Procedural justice theory provides scholars with a defined field and measures to examine one way these reforms may change attitudes and behaviors. Using procedural justice theory additionally enables policymakers to shift their discussions from being management-centric bureaucracy-bashing rhetoric to being employee-centered and cognizant of the relationship between employee's attitudes and their contributions to the accomplishment of programmatic goals.

Examining the effect of procedural justice perceptions among federal employees comes at a critical point in federal civil service management. Because federal employees have a property interest in their positions, they are afforded multiple procedural protections. These protections set the expectation that employee concerns will be handled in a fair, balanced, and consistent manner. Changes to these long-held protections can have significant implications for the workforce. Current due process protections are viewed by the courts as legitimate and are relied upon by employees. “The more that a procedural element has been legitimated by culturally or historically-based norms, the more likely people are to believe it will and should be present” (Brockner, Ackerman, and Fairchild, 2001, p. 185). Loss of procedural protections is likely to be keenly felt by employees and their representatives.

The aim of this research is to confirm that process and the perceptions of procedural justice are valuable to a government organization. Although procedural requirements in public organizations are often viewed as burdensome and costly, they can be a “positive force” that contributes to organizational effectiveness and productivity (Rainey, 1997, p. 245). “If employees believe they are treated fairly, they will be more likely to hold positive attitudes about their work, their outcomes, and their supervisors” (Moorman, 1991, p. 845).

The dissertation is organized in the following manner. Chapter 2 provides a detailed review of procedural justice literature, including a detailed examination of measurement schemes and findings from existing research. Based on existing literature, Chapter 3 identifies the research questions and hypothesized relationships. Data sources and specific variables will be described, as well as the limitations of the data. Empirical models and the methods used to assess them are identified. Chapter 4 describes the procedural justice perceptions of federal employees, thus answering Research Question 1. The determinants of procedural justice perceptions are considered in Chapter 5 at the governmentwide level, while Chapter 6 examines the determinants of procedural justice perceptions within two federal agencies in a more in-depth manner, including qualitative analysis. Research Question 3 will be considered in Chapter 7, including: (a) the relationship between procedural justice perceptions and other attitudes and behaviors, (b) the added effects of being a manager, (c) the added effects of being unionized, and (d) the relationship between these perceptions and the filing of formal complaints. The dissertation concludes with a brief summary of findings and a discussion of their implications.

## CHAPTER 2

### A REVIEW OF EARLIER LITERATURE

Herbert Simon identified decision-making as the central act of management, and called our attention to finding ways to improve decision-making processes. In the public sector, these processes are impacted not only by analytical and information constraints, but also by substantial legal constraints. The due process clause of the U.S. Constitution, for example, provides guidance on how management decisions are to be made in the public sector. Especially in the tasks of public personnel management, court-derived procedures, rules imposed by labor contracts, and voluminous policy regulations create the perception that the rules significantly limit management discretion and the ability of managers to reward high performers. All levels of government are evaluating personnel rules and searching for opportunities to reduce the rule burden, but this is happening without consideration of the positive psychological value that rules can have in an organization. The concept of procedural justice is a tool for undertaking such an analysis.

To carry out the research plan outlined in the first chapter, it is important to define the concept of procedural justice and outline its origins in equity theory and legal dispute resolution research. These foundations informed the development of theories that explain how individuals evaluate the fairness of decisionmaking procedures, and how those evaluations influence other attitudes and behaviors directed towards organizations. Research on procedural justice is frequently conducted following the conceptualization of Leventhal (1980), who identified six criteria for fostering procedural justice perceptions: consistency, bias-suppression, accuracy,



correctability, representativeness, and ethicality. These criteria are used as both independent and dependent variables in empirical research.

Over a number of studies, scholars supported the proposition that the determinants of procedural justice include neutrality, trust, and standing—concepts that are highly similar to those of Leventhal (1980) when examined in-depth. Perceptions of procedural justice were employed as an independent variable beginning in the late 1980s when scholars began to evaluate its association with other organizational attitudes and behaviors. This body of research indicates that there is a positive relationship with job satisfaction and organizational citizenship behavior, and a negative relationship with turnover intentions. Research on the relationship between procedural justice and behaviors is limited in both quantity and quality, including in the area of filing complaints and grievances. Results of these studies are mixed, some suggesting a positive relationship and others suggesting a negative relationship.

### Defining Procedural Justice

Procedural justice perceptions can be broadly defined as judgments on the degree to which decisionmaking within an organization is viewed as just and fair (Lind and Tyler, 1988; Cohen-Charash and Spector, 2001; Colquitt, Conlan, Wessen, Porter, and Ng, 2001). These judgments, in turn, impact other attitudes and behaviors of employees such as satisfaction, organizational citizenship behavior, and turnover. Theory on procedural justice has evolved to consider both formal rules and the interpersonal treatment that occurs during decisionmaking, linking objective and subjective elements (Tyler and Balder, 2003; DeCramer and Tyler, 2005). Said in another way, both the rules themselves and the manner in which they are implemented influence procedural justice perceptions (Blader and Tyler, 2003).

Early clinical studies illustrated that procedural justice perceptions and distributive justice perceptions have independent, differential effects on various outcomes (Tyler and Lind, 1992). Initially, procedural justice theory was viewed as instrumental, in that processes were evaluated as a means to an end. It later became clear that the actual process had positive psychological value, beyond the relationship between the process and the eventual outcome. This has generally been referred to as relational procedural justice, viewing process as a means to social benefits including group identity, self-esteem, and status recognition (Folger and Cropanzano, 2001).

It is important to highlight that this theory focuses on *perceptions* of procedural justice, not solely on objective measures of justice, due to its home in social psychology scholarship. Procedural justice theory reminds scholars that an agency can be in compliance with procedural requirements, as specified by court decisions, statutes, and regulations, while at the same time exhibiting low levels of procedural justice perceptions. Meeting due process requirements is necessary, but not sufficient, for fostering an environment in which employees perceive decisions are made in a procedurally just manner (Skarlicki and Latham, 1996).

### Origins of Procedural Justice Scholarship

The early research on procedural justice occurred primarily along two tracks. Although separate, the key scholars of these efforts acknowledged the work of the others. Furthermore, both efforts originally approached procedural justice as instrumental, i.e. a means to a fair allocation of resources. One track, primarily in the works of Gerald Leventhal, came out of the field of equity theory. Leventhal's primary interest centered on perceptions of fairness within organizations and during social interactions. The second track, from the works of John Thibaut, Laurens Walker, and colleagues, came out of research on legal dispute resolution procedures,

centering on fairness in judicial settings. Both tracks of research were pursued in the 1970s and early 1980s.

### *Roots in Equity Theory*

Equity theory proposed that individuals invest time and effort into various activities when they believe they will receive benefits that are both equivalent to the effort invested and consistent with the rewards received by others making similar efforts. Specifically, equity theory contends that perceived inequity in outcomes, either positive or negative, results in psychological and/or behavioral consequences (Adams, 1965). This interest in the fairness of outcomes evolved into distributive justice theory. The concept of distributive justice contends that social behavior is affected by “beliefs that the allocation of benefits and costs within a group should be equitable, that is, that outcomes should be proportional to the contribution of group members” (Lind and Tyler, 1988, p. 10).

A significant component of distributive justice theory centers on comparing outcomes received by Person A to the outcomes received by Person B, with the evaluation of that comparison influencing the degree to which Person A perceives the allocation to be fair (Stouffer, Suchman, DeVinney, Star, and Williams, 1949; Homans, 1961; and Blau, 1964). The orientation of justice perceptions via a referent-other evolved to consider what constituted a fair exchange - both economic and social exchanges (Blau, 1964). Social exchange involves ambiguous obligations, time-frames, and pay-offs for the participants. However, it serves as a foundation for social interaction and cooperative behavior in organizations, and “has become one of the most commonly expressed explanations for the effects of justice on work behavior” (Colquitt, Greenberg, and Zapata-Phelan, 2005, p. 15).

In the late 1970s, scholars within the field of equity theory began to realize that fairness judgments were based on more than outcomes. Leventhal (1980) proposed that in addition to considering the fairness of outcomes, individuals considered the fairness of the process used to obtain the outcome. In doing this, he expanded fairness concerns to social interactions, beyond their exclusive consideration in distributions of resources.

Leventhal (1980) proposed criteria that individuals use to determine if a procedure is fair. At the time, the criteria were speculative and intuitive and not based in any pre-existing research. He argued that: “it is better to have speculative statements about such rules than none at all” (Leventhal, 1980, p. 39). The criteria themselves will be described below in more detail. However, it is worth noting Leventhal’s many ideas about the applications of the criteria. First, he suggested the rules may be applied selectively; that some would be more important in some situations than in others. Second, subgroups within an organization may “have different procedural preferences because their beliefs, goals, and values differ” (Leventhal, Karuza, and Fry, 1980, p. 190). Third, rules that are in place for a longer period of time are viewed as more fair because of the predictability and stability of the process.

Leventhal also provided early suggestions on when individuals would become concerned more about procedural fairness. New membership in an organization or the creation of a new organization will cause individuals to be more concerned about the fairness of rules (Leventhal, Karuza, and Fry, 1980). Instances of organizational change may cause anxiety which prompts individuals to examine procedures for signals about fairness. Finally, Leventhal suggested that influential organizational members who are unsatisfied with the fairness of particular procedures send signals to other organizational members indicating the need to examine the situation.

### *Roots in Legal Dispute Resolution Research*

At the same time that equity theory scholars began to acknowledge that perceptions of process may influence perceptions of fairness, legal justice scholars began to take a more empirical approach to similar questions. These studies were primarily interested in subjective justice, as opposed to objective justice that considers if the convicted individual is actually guilty for example. John Thibaut, Laurens Walker, and colleagues embarked upon a series of laboratory experiments, beginning in 1973, intended to evaluate (a) if people assessed the fairness of process separately or differently from outcomes and (b) which judicial or dispute resolution processes were perceived to be more fair. Many of these studies were summarized in Thibaut and Walker's 1975 book *Procedural Justice: A Psychological Analysis*.

One early experiment attempted to evaluate these issues simultaneously by varying both the procedure used in mock trials and the verdict reached (Walker, LaTour, Lind, Thibaut, 1974). Participants were asked to evaluate the fairness of the procedures before the verdict was rendered; after the verdict participants were prompted to assess their satisfaction with the procedure, the verdict, and the opportunities to present information in their favor. Perceptions of the fairness of the procedures were higher when participants were allowed to present evidence in their favor, when evaluated both before and after the verdict was issued, and regardless of the actual verdict (Walker et al., 1974). This experiment was the first to indicate that both process and outcome matter when people evaluate the fairness of decisions (Lind and Tyler, 1988). Later studies exhibited similar results with similar variations in procedure and measurement before and after a verdict (Walker, Lind, Thibaut, 1979; Lind, Kurtz, Musante, Thibaut, and Walker, 1980).

Experiments conducted between 1973 and 1980 contained multiple variations but the findings were consistent. For example, most of the experiments were conducted using American

undergraduates and/or law students. However, cultural difference did not seem to change perceptions of which procedural aspects were viewed as more fair. Studies comparing perceptions of students in the United States, United Kingdom, France, and West Germany found that, despite differences in the structure of the indigenous legal systems, participants preferred opportunities to both present evidence in their favor and control the content of the evidence presented (LaTour, Houlden, Walker, and Thibaut, 1976; Lind, Ericson, Friedland, and Dickenberger, 1978a). In another variation, perceptions of procedural fairness were evaluated only before a verdict was issued in a mock trial (LaTour et al., 1976; Houlden, LaTour, Walker, Thibaut, 1978), only after a verdict was issued (Walker et al., 1974; LaTour, 1978), or both before and after. A third experimental variation included making participants believe they would win or lose their case (Thibaut, Walker, LaTour, Houlden, 1974), they were guilty or innocent (Walker et al., 1974; LaTour et al., 1976; and Walker et al., 1979), or by explicitly placing a subgroup of participants behind Rawls' veil of ignorance (Thibaut et al., 1974).<sup>5</sup> Again, regardless of the experimental variation, results indicated that individuals care about both process *and* outcomes when evaluating the fairness of decisions.

Some studies included a variation allowing the researchers to assess if fairness perceptions would vary depending on one's role in the experiment. Perceptions of fairness were evaluated from different points of view by assigning experiment participants to play the role of an observer, as opposed to participating in the mock trial itself (Walker et al., 1974; Latour, 1978; and Walker et al., 1979). In other studies, participants in the mock trials participated as

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<sup>5</sup> The veil of ignorance is used by John Rawls (2002) to describe the theoretical conditions under which an ideal set of rules is designed to distribute societal resources in a fair manner. Individuals participating in the design of the distribution rules do not know what their position in society is nor what interest groups or subpopulations they represent in the process, i.e. they are ignorant of their position in the society that will be governed by the rules they develop. Rawls (2003) proposes that when individuals do not know their role in society, self-interest will not influence the design of the rules, and thus the rules will be more just.

either defendants, plaintiffs, or judges (Latour et al., 1976; Houlden, LaTour, Walker, and Thibaut, 1978; and Latour, 1978). Position appeared to influence perceptions of procedural fairness in studies containing both participants and observers. The first study containing both participants and observers found that procedures allowing participants to present evidence in their own favor enhanced procedural fairness perceptions of *both* groups in a *consistent* way (Walker et al., 1974). A later study, intended to probe the initial findings of Walker et al (1974) in a more in-depth manner, found that observers had *different* standards for evaluating procedural fairness of different dispute resolution schemes (LaTour, 1978). To revisit these conflicting results, a third study was conducted with the same treatments and variations (Walker et al., 1979). The findings indicated observers and participants both preferred procedures allowing participants to present evidence in their favor, regardless of the eventual verdict issued. However, evaluations of the fairness of the verdict varied by role of the individual, procedure used, and verdict rendered (Walker et al., 1979). These different findings indicate the importance that role or position can play in one's perceptions of procedural fairness. In fact, Walker and colleagues encouraged the reader to consider the relative importance of a participant's perception of procedural fairness versus the perceptions of observers.

Studies also differed in what perceptions were evaluated. Although none of the questionnaires were provided in any of the studies conducted by Walker, Thibaut and colleagues during this time period, the text of the studies indicated that the following perceptions were captured:

- perceptions of fairness of different procedures *used* versus the procedure *one would prefer* to be subject to (Thibaut et al., 1974; LaTour et al., 1976; Lind et al., 1978; LaTour, 1978; and Houlden et al., 1978);

- *perceived fairness* of procedures versus *satisfaction* with the procedure used (Walker et al., 1974; Houlden et al., 1978; and Walker et al., 1979); and
- fairness of *outcome* versus fairness of *procedure* (Walker et al., 1974; and LaTour, 1978).

By capturing the information in this way, the studies collectively provided evidence that perceptions of procedural fairness could be evaluated differently from distributive fairness, and that fairness and satisfaction are different phenomenon.

Based on this research, Thibaut and Walker presented a generalized theory of procedural justice three years after the publication of their book. Portions of this generalized theory remain salient to procedural justice research conducted today. First, Thibaut and Walker differentiated between process control and decision control as contributors to procedural justice perceptions (Thibaut and Walker, 1978; Houlden et al., 1978). Process control was defined as the ability to influence the presentation of evidence while decision control centered on the ability to influence the final verdict. Control was viewed as the key component because of the perception that control would ensure that outcomes would be relatively predictable.

### Maturation of Theory: Linking Procedural Justice Perceptions To Other

#### Attitudes and Behaviors

After approximately a decade focusing exclusively on the structure of decisionmaking processes, procedural justice theorists expanded their analysis to also consider social interactions, including how procedures are implemented and interpersonal exchanges take place. As a result, multiple theories were developed to reflect the new orientation: the group value model (Lind and Tyler, 1988), the fairness heuristic theories (Lind, Kulik, Ambrose, and deVera Park, 1993; and Lind, 2001), the relational model of authority (Tyler and Lind, 1992), and the group engagement



model (Blader and Tyler, 2003; Tyler and Blader, 2003). Overall, the theories progressively built on each other to explain how individuals evaluate the fairness of decisionmaking procedures, and how those evaluations influence other attitudes and behaviors directed towards organizations.

The central question of each theory is described in table 2.1.

Table 2.1  
Central Questions of Procedural Justice Theories

Theory	Central Question	Proposition	Primary Source
Group Value Model	Why is procedural justice important?	Procedural justice influences cooperation.	Lind and Tyler, 1988
Fairness Heuristic	How do individuals evaluate procedural fairness?	Procedural fairness is evaluated through the use of mental shortcuts and subjective justice rules. <sup>1</sup>	Lind, Kulik, Ambrose, and deVera Park, 1993; Lind, 2001
Relational Model of Authority	How does procedural justice influence cooperation in groups?	Cooperation is fostered when the actions of authorities are viewed as legitimate.	Tyler and Lind, 1992
Group Engagement Model	Why does procedural justice influence cooperation?	Treatment viewed as procedurally just creates and reinforces social identity.	Tyler and Blader, 2003; Blader and Tyler, 2003

<sup>1</sup>The criteria identified by Leventhal (1980) can be considered to be heuristics and the fairness heuristic theory is very consistent with Leventhal's (1980) propositions.

The group value model was the first to consider the link between procedural justice perceptions, group identification, and cooperative behavior. Working from the assumption that the need to belong to some sort of social/organizational structure is a powerful motivator, Lind

and Tyler (1988) began with the assumption that group procedures provide information to individuals on their role and status in the group. Group procedures specify authority relationships and the norms of decisionmaking and treatment afforded to members. These procedures are legitimized by group socialization activities as well as by individual expectations of fair procedures (Lind and Tyler, 1988). If the procedures are viewed as consistent with the ideals of the group and the values of the individual, perceptions of procedural justice will be fostered. Said another way, procedures that reaffirm group values will be viewed as fair (Colquitt, Greenberg, and Zapata-Phelan, 2005). In turn, this assessment influences the evaluation of the leaders of the group and levels of commitment. Finally, the degree of perceived fairness of procedures serves as an indicator of status when individuals are unsure about their role or status in the group. Procedures viewed as unfair lead the individual to question their membership in the group and disengage.

According to fairness heuristic theories, individuals use mental shortcuts to evaluate the fairness of events or actors (Lind, Kulik, Ambrose, and deVera Park, 1993; and Lind, 2001). This evaluation can occur in a hierarchical context in which the individual is determining if requests from authority are legitimate and should be followed (Lind et al., 1993). It can also occur in non-hierarchical contexts, in which an individual is evaluating whether or not to work cooperatively towards group goals (Lind, 2001). In both cases, the dilemma contrasts the likelihood of exploitation against the potential benefits of collective action and the psychological gains associated with group membership. The fairness heuristics themselves are the subjective justice rules individuals use to assess each uncertain situation. As such, the heuristics serve as a surrogate for interpersonal trust (Lind, 2001). If the request is viewed as legitimate or the

authority is viewed as trustworthy, the individual will follow the request or engage with the group.

The relational model revisits the themes of the group value model, but emphasizes the relationship between procedural fairness and the legitimacy of decisions made by people in positions of authority (Tyler and Lind, 1992). As stated in the group value model, the fairness of procedures is seen to symbolize one's standing in the group; highly fair procedures indicate high standing while unfair procedures indicate low standing (Lind and Tyler, 1988). According to the relational model of authority, people in positions of authority in groups serve as symbols or an embodiment of the group, and decisionmaking procedures represent the fairness of the authority (Tyler and Lind, 1992). If the authority is viewed as unfair, through the use of unfair procedures, the individual member infers that she has low status in the group, thus not deserving fair treatment. Because the authority is viewed as both unfair and as having influence over other group members, the individual equates the unfairness of the authority with a lack of respect for her among all group members, and she views the decisions of the authority as illegitimate. This causes an unwillingness to either support or comply with the authority.

Most recently, the group engagement model aimed to shift attention from how procedural justice perceptions influence other attitudes to how it influences behavior, specifically cooperation in groups (Colquitt, Greenberg, and Zapata-Phelan, 2005). The group engagement model theorized that perceptions of procedural justice influence self-identification with the group, which in turn influences cooperative behavior (Tyler and Blader, 2003). The group engagement model continues the contention from both the group value model and the relational model that social identity with a group is an important goal of individuals and a potent driver of motivation. However, it goes one step further by focusing on the interpersonal implications of the

resulting level of motivation. In the first step of the process, procedural justice perceptions influence identity judgments by (a) providing information about the status of the group relative to other groups, (b) indicating the status of the individual within the group (fair procedures indicate high status, via the relational model), and (c) signaling whether the individual should merge her sense of self with the culture and values of the group (Tyler and Blader, 2003). If the identity judgments are positive, the individual is likely to exhibit attitudes and behaviors that are supportive of the group, i.e. she will engage in cooperative behaviors. Identity is the moderating variable to the relationship between procedural justice perceptions and cooperative behavior because group status informs levels of self-esteem; high self-esteem restrains competitive self-interested behavior and motivates collaboration towards a common goal (DeCremer and Tyler, 2005; Tyler and Blader, 2003).

Together, the group value model, the fairness heuristic theory, the relational model of authority, and the group engagement model describe how procedural justice perceptions influence other attitudes and behaviors that are important to organizational performance. Individuals first assess the fairness of decisionmaking events. This is done using subjective justice rules or mental short-cuts like the Leventhal criteria. These subjective rules, termed fairness heuristics, enable the individual to identify her role in the group and the level of respect the group has for that individual. Next, the group value model illustrates that this evaluation of respect within the group influences an individual's overall attitude towards the organization such as long-term commitment and loyalty. The relational model adds that fairness perceptions influence attitudes directed towards the organizational leadership, including the degree to which individuals view the leader as legitimate. Finally, the group engagement model considers the "relational implications of justice evaluations" (Tyler and Balder, 2003, p. 352). Through its

influence on levels of commitment and loyalty, perceptions of procedural justice heighten identity within the group, which in turn fosters an intrinsic motivation to cooperate with group members to accomplish common goals. To summarize, justice rules are used to make procedural justice evaluations; procedural justice evaluations influence levels of group commitment and loyalty; and justice-informed levels of commitment and loyalty motivate people to act jointly in support of the groups to which they belong.

### Determinants of Procedural Justice Perceptions

Scholarship on procedural justice is plagued by a multiplicity of methods identifying the concept (Lind and Tyler, 1988; Greenberg, 1990; Colquitt et al., 2001). One frequently used approach is derived from Leventhal (1980), who proposed six “criteria that define the rules of fair procedure” (1980, p. 39), based purely on speculation. The six criteria are consistency, bias-suppression, accuracy, correctability, representativeness, and ethicality. It appears Leventhal never tested the veracity of these criteria, instead leaving it to future scholars to determine if the six were all appropriate and if they worked together as a group. The subsequent work of other scholars confirmed that the six criteria work together as a group, and explained why each of the six is related to justice perceptions. Scholars using this scheme assume that procedural justice is a latent concept, best identified through the determinants that contribute to the perception. These same scholars frequently use the Leventhal criteria in regressions as an independent variable so they can evaluate how these determinants of procedural justice perceptions influence other attitudes and behaviors, particularly the attitudes and behaviors of employees.

### *Leventhal's Definition of the Six Criteria*

Leventhal's (1980) justice rules broadly consider the neutrality of the decisionmaking process, the decisionmakers, and safeguards that exist to protect individuals. First, individuals assess the consistency with which procedures are implemented across time and across people. Evaluations of consistency can occur during any part of a decisionmaking process. Second, the degree to which decisionmakers allow their personal interests to guide actions or the degree to which their bias is suppressed is considered. When decisionmakers are viewed as biased or working for personal ends, the decisionmaking procedure will be viewed as less fair. Third, evaluations of the fairness of procedure depend on the appropriateness and accuracy of the information used to make decisions. Part of the accuracy assessment includes an evaluation of the competence of the individuals providing the information, such as immediate supervisors commenting on job performance. Again, the use of information viewed as inaccurate or irrelevant will taint the perception of the decisionmaking process.

Fourth, procedural justice perceptions are further improved when opportunities exist to modify decisions, which Leventhal (1980) referred to as correctability. Appeal procedures can be either formal or informal, and individuals consider both the transparency of the rules of the appeal procedure and the ease with which a complaint can be made. Representativeness, also referred to as voice, assesses the degree to which procedures provide individuals the opportunity to communicate their views, evidence, or arguments. Individuals evaluate whether the views and values of the group are represented in decisions and if decisionmaking is conducted in an inclusive, participative manner. This concept of representativeness is described as encompassing the concepts of process control and decision control (Lind and Tyler, 1988). Finally, ethicality of the procedure is evaluated against the individual's own sense of personal ethics. For example,

intrusive or deceptive methods of gathering information may violate an individual's sense of ethics, and thus decrease procedural justice perceptions (Leventhal, 1980).

Although Leventhal provided little detail in describing his six criteria, they were consistent with research being published at the time. Ethical behavior in individuals was described during the decade before Leventhal's criteria as being linked to responsiveness to the expectations of peers and an orientation towards consistent application of social principles (Kohlberg, 1969). The role of accurate and complete information and the impact of heuristics that introduce bias in decisionmaking were also gaining increased attention during this period (Tversky and Kahneman, 1974). In addition to the concepts of process and decision control, voice or representativeness was increasingly seen as important to fostering perceptions of fairness and other important organization-directed attitudes (Hirschman, 1970). Correctability was a growing concern of public policy in the two decades before Leventhal's criteria were introduced, particularly in relation to Supreme Court cases on the procedural due process rights of public employees (for example see *Board of Regents v. Roth*, 1972 and *Arnett v. Kennedy*, 1974). Newly enacted statutes also aimed to increase the consistency of treatment in the workplace, including the Civil Rights Act of 1964, the Equal Pay Act of 1963, the Age Discrimination in Employment Act of 1967, and others.

Leventhal did not empirically test his criteria for their validity. However, two studies did evaluate the appropriateness of the six determinants (Greenberg, 1986; Sheppard and Lewicki, 1987). Both studies used the critical incident method to allow participants to identify what influenced perceptions of the fairness of procedures. One study asked middle managers to reflect on fair and unfair performance appraisals they received over the course of their careers (Greenberg, 1986). Using the Q-sort method with no predetermined number of categories, the

middle managers clearly differentiated between procedural and distributive justice. The procedural justice issues identified were consistent with four of Leventhal's criteria: voice, correctability, accuracy, and consistency (Greenberg, 1986). However, the second study found support for all six of Leventhal's criteria (Sheppard and Lewicki, 1987). After asking samples of graduate students and bankers to describe fair and unfair treatment at work in a number of different decisions, multiple coders were used to organize the various comments into categories. All the Leventhal criteria were present in the categories, with consistency referred to most frequently and ethicality referred to least frequently (Sheppard and Lewicki, 1987).

### *Operationalization of the Leventhal Criteria*

Since the late 1980s three different sets of survey questions have served as standards for operationalizing the Leventhal criteria as determinants of procedural justice perceptions (Folger and Konovsky, 1989; Moorman, 1991; and Colquitt, 2001). The survey items developed in these three studies have since been used by multiple scholars for measuring the concept. Questions from the three sets of survey questions measuring each of the Leventhal criteria are presented in table 2.2.

Folger and Konovsky (1989) and Konovsky and Folger (1991), in their studies of the perceived fairness of pay decisions, explicitly identify Leventhal as a source for variables they utilized. Other scholars have used the Folger and Konovsky (1989) questions to evaluate the relationship between procedural justice determinants and organizational citizenship behavior (Lee, 1995; Konovsky and Pugh, 1994), subordinates' satisfaction with managers (Weslowski and Mossholder, 1997) and workplace retaliatory behavior (Skarlicki and Folger, 1997). Furthermore, training in procedural justice was found to increase union members' perceptions of



union leader fairness through the use of the Folger and Konovsky (1989) measures (Skarlicki and Latham, 1996, 1997).

The next iteration of the Leventhal criteria, developed by Moorman (1991) and duplicated by Niehoff and Moorman (1993), was informed by Folger and Konovsky (1989), but was more explicitly tied to Leventhal's work. Confirmatory factor analysis of the survey items indicated that the items as a group were capturing the determinants of procedural justice. The Moorman measures have been used to link procedural justice determinants and organizational citizenship behaviors (Farh, Earley and Lin, 2001; Burton, Sablinski, and Sekiguchi, 2008), career expectations (Scandura, 1997), union participation (Fuller and Hester, 2001), and helping behaviors (Naumann and Bennett, 2000).

Table 2.2  
Measuring the Leventhal Criteria

Measure	Source
<i>Voice</i>	
Have you been able to express your views and feelings during those procedures?	Colquitt 2001
Have you had influence over the (outcome) arrived at by those procedures?	Colquitt 2001
Procedures are designed to have all sides affected by the decision represented.	Moorman 1991
Your supervisor considered your viewpoint.	Moorman 1991
Your manager gave you an opportunity to express your side.	Folger and Konovsky 1989
Your manager got input from you before a recommendation.	Folger and Konovsky 1989
<i>Consistency</i>	
Have those procedures been applied consistently?	Colquitt 2001
Procedures are designed to generate standards so that decisions could be made with consistency.	Moorman 1991
Your manager used consistent standards in evaluating your performance.	Folger and Konovsky 1989

### *Accuracy*

Have those procedures been based on accurate information?	Colquitt 2001
Procedures are designed to collect accurate information necessary for making decisions.	Moorman 1991
Your manager became thoroughly familiar with your performance.	Folger and Konovsky 1989

### *Correctability*

Have you been able to appeal the (outcome) arrived at by those procedures?	Colquitt 2001
Procedures are designed to provide opportunities to appeal or challenge the decision.	Moorman 1991
You can make an appeal about the size of your raise.	Folger and Konovsky 1989

### *Ethicality*

Have those procedures upheld ethical and moral standards?	Colquitt 2001
Your supervisor showed concern for your rights as an employee.	Moorman 1991
Your supervisor took steps to deal with you in a truthful manner.	Moorman 1991
Your manager was honest and ethical in dealing with you.	Folger and Konovsky 1989

### *Bias Suppression*

Have those procedures been free of bias?	Colquitt 2001
Your supervisor was able to suppress personal biases.	Moorman 1991
You manager allowed personal motives or biases to influence the recommendation.	Folger and Konovsky 1989

Most recently, Colquitt (2001) proposed a broader measure of organizational justice, of which procedural justice was a part. The procedural justice measures in the Colquitt (2001) questions again are explicitly derived from Leventhal (1980) and are found to group together as a factor. Scholars already have used Colquitt's (2001) scheme to assess the relationship between procedural justice determinants and union formation (Blader, 2007), trust in supervisors (Ambrose and Schminke 2003), and organizational citizenship behavior (Choi, 2008). Other studies use Colquitt to understand satisfaction (Mayer, Nishi, Schneider and Goldstein, 2007),

reactions to performance appraisal decisions (Jawahar, 2007), and employee mental health (Spell and Arnold, 2007).

It is important to note that each of the three operationalizations of the Leventhal criteria is a determinant of procedural justice. Each has been used as an independent variable for understanding its relationship to other attitudes and behaviors important to organizations. None of the scholars weighted any one aspect of the Leventhal criteria more heavily than the others.

### Research Findings

To test procedural justice theory and employ its various operationalizations, procedural justice perceptions are used as both independent and dependent variables. The work of Tyler and his colleagues largely focused on the determinants of the concept. Their methods were consistent in using a direct measure of procedural justice instead of the Leventhal criteria. Over a number of studies, Tyler and colleagues supported their proposition that the determinants of procedural justice include neutrality, trust, and standing. An in-depth evaluation of the three concepts as defined by Tyler and colleagues reveals they are consistent with predictors derived from the Leventhal criteria.

Procedural justice perceptions and their determinants were employed as independent variables beginning in the late 1980s when scholars began to evaluate its association with other organizational attitudes and behaviors. The body of research indicates that there is a positive relationship with job satisfaction and organizational citizenship behavior, but a negative relationship with turnover intentions. However, research on the relationship between procedural justice and behaviors is limited in both quantity and quality. A number of studies consider its

impact on the filing of complaints and grievances. Results of these studies are mixed, with some suggesting a positive relationship and others suggesting a negative relationship.

### *What Influences Procedural Justice Perceptions*

The group value model (Lind and Tyler, 1988) and the relational model of authority (Tyler and Lind, 1992), in addition to exploring how procedural justice perceptions influence attitudes directed towards groups, considered what influences procedural justice. When exploring this particular question direct measures of procedural justice were used as dependent variables. See table 2.3 for examples of the direct questions used in these studies. Tyler, Lind, and colleagues proposed that procedural justice is influenced by perceptions of neutrality, trust, and standing. Like the Leventhal criteria, these concepts are poorly defined and inconsistently measured. Neutrality considers if the decisionmaker uses objective information, does not allow prejudice or other forms of bias to influence decisions, and is generally viewed as honest and consistent. Trust in an authority, according to Tyler and colleagues, is granted if the intentions of the decisionmaker are viewed as ethical and fair, and is heightened when opportunities for voice are present (Tyler and Schuller, 1990). Voice opportunities are defined in a manner consistent with the previous research regarding process control, but the idea of ethicality is not expanded upon, nor is the vast scholarship on trust used as a guiding principal for its definition or measurement. Standing serves as a symbol of one's status or reputation within a group, which is a particularly important part of the group value model. According to Tyler and colleagues, an evaluation of standing consists of an assessment of the respect the group has for the individual and the degree to which one is treated with dignity and politeness. A review of table 2.4 reveals

that the components of neutrality, trust, and standing are highly consistent with the Leventhal criteria.

Table 2.3  
Examples of Measures Used by Tyler, Lind and Colleagues

Question	Source
How fair are the procedures by which government benefits are distributed?	Tyler and Cain 1981
How fair are the procedures used by the government to decide the benefits to which each citizen is entitled?	Tyler and Cain 1981
How fair was the dispute resolution procedure in which you participated?	Lind, Lissak, and Conlon 1983; Lind and Lissak 1985
How fair are the procedures by which the government decides who will receive government benefits?	Tyler, Rasinski, and McGraw 1985
How fair is the procedure used to determine which company gets the contract?	Kanfer, Sawyer, Earley and Lind 1987
How fair were the procedures used to handle the problem?	Tyler and Schuller 1990
How fairly were you treated by your supervisor?	Tyler and Schuller 1990
Overall, how fair were the rules and procedures that applied to your case?	Link, Kulik, Ambrose, and deVera Park 1993
All things considered, do you think this is the fairest way to resolve a case like yours?	Link, Kulik, Ambrose, and deVera Park 1993
How often do you feel that decisions are made in fair ways at your job?	Blader and Tyler 2003
Overall, how fair would you say decisions and processes are where you work?	Blader and Tyler 2003

Table 2.4  
What Influences Procedural Justice Perceptions (adapted from Tyler and Lind 1992)

Procedural Justice Perceptions		
Neutrality	Trust	Standing
<ul style="list-style-type: none"> <li>• Consistency</li> <li>• Honesty</li> <li>• Lack of Bias</li> <li>• Accuracy</li> </ul>	<ul style="list-style-type: none"> <li>• Competence</li> <li>• Ethicality</li> <li>• Voice Opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Respect</li> <li>• Dignity and Politeness</li> </ul>

A test of the appropriateness of neutrality, trust and standing was conducted using a phone survey of Chicago residents on their views of recent interactions with government authorities (Tyler, 1989). Neutrality was described as an important determinant of procedural justice perceptions because “in a particular situation people will be concerned with having an unbiased decisionmaker who is honest [over the long-term] and who uses appropriate factual information to make decisions” (Tyler, 1989, p. 831). Trust in authorities was proposed as important to procedural justice perceptions because when individuals believe the intentions of an authority are benevolent, they are more likely to develop a long-term commitment to the group (Tyler, 1989). One’s standing in the group helps to either reinforce self-identity or threaten it. People treated poorly believe they have low standing in the group and vice versa. Furthermore, standing within the group is communicated by the quality of interpersonal treatment (Tyler, 1989). Not surprisingly, neutrality, trust, and standing were all found to be significantly related to perceptions of procedural justice.<sup>6</sup>

<sup>6</sup> The actual questions used in Tyler (1989) were not provided in the journal article. The operationalization of voice, neutrality, trust, and standing used in this study of Chicago residents is similar to later survey-based studies. Specific survey items used in later studies are displayed in table 2.5. One study included measures for correctability, but it

Table 2.5  
Examples of Survey Items Used to Measure Voice, Neutrality, Trust and Standing

Source: Tyler and Schuller 1990

Dependent Variable	Procedural Justice
	How fair were the procedures used to handle the problem?
	How fairly were you treated by your supervisor?
Independent Variables	Voice/Control
	How much opportunity were you given to describe your problem before any decisions were made about how to handle it?
	How much influence did you have over the decision made by your supervisor?
	Neutrality
	Did the methods used by your supervisor favor one person over another or were they equally fair to everyone?
	Was your supervisor honest in what they said to you?
	Did your supervisor do anything that you thought was dishonest or improper?
	Did your supervisor get the information needed to make good decisions?
	Did your supervisor try to bring the issues into the open so that they could be solved?
	Trust
	How much consideration did your supervisor give to your views when decisions were made about how to handle the problem?
	How hard did your supervisor try to be fair to you?
	How hard did your supervisor try to take account of your needs in the situation?
	Standing
	How politely were you treated?
	How much concern was shown for your rights?

Given the similarity of the Leventhal criteria to the components of neutrality, trust, and standing, a meta-analysis considered the relationship between the Leventhal criteria and a direct measure of procedural justice (Colquitt et al., 2001). Essentially, the question considered the

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was found to not relate to procedural justice perceptions in a significant way (Tyler and Schuller, 1990), which explains the absence of this Leventhal item from future Tyler studies.

degree to which the Leventhal criteria influence the direct measure of procedural justice perceptions. First, the two were found to have a correlation of 0.68 across multiple studies. When regressing both process control and the Leventhal criteria against the direct procedural justice measure, process control explained 26% of the variance, while the Leventhal measures explained 21% of the variation (Colquitt et al., 2001).

### *Leventhal Criteria as Predictors of Other Attitudes*

A majority of the research on procedural justice perceptions focuses on how the concept influences other attitudes and behaviors. Common dependent variables include job satisfaction, organizational citizenship behavior and turnover intentions (Colquitt et al., 2001; Cohen-Charash and Spector, 2001). Specifically, there is a positive relationship between indicators of procedural justice perceptions and job satisfaction and organizational citizenship behavior and a negative relationship with turnover intentions. Additionally, scholars consider the relationship between procedural justice indicators and work-related behaviors, including the filing of various types of complaints. However, research findings on the direction of this relationship are inconsistent.

Job satisfaction can be defined as “affective attachment to the job either in its entirety or with regard to particular aspects” (Tett and Meyer, 1993, p. 261). Correlations between job satisfaction and indicators of procedural justice perceptions range from 0.35 to 0.68 (Colquitt et al., 2001). This relationship has been studied in a number of settings, including a multinational corporation (Kim and Mauborgne, 1993), a retail organization (Korsgaard and Roberson, 1995), a university (Masterson et al., 2000), a grocery store chain (Mayer et al., 2007), within unions (Fryxell and Gordon, 1989), and in the private sector in Australia (Scandura, 1997). In addition to broad studies, the link has been examined specifically in the case of a performance appraisal



system (Masterson et al., 2000), a mentoring program (Scandura, 1997), and the filing of grievances (Fryxell and Gordon, 1989).

Three studies examine the linkages between determinants of procedural justice perceptions and job satisfaction in public sector organizations and find consistent results (Alexander and Ruderman, 1987; Fryxel and Gordon, 1989; and Sweeney and McFarlin, 1997). Using survey data from six federal field offices, Alexander and Ruderman (1987) are described as the first to test the relationship between procedural justice indicators and other important workplace attitudes, including satisfaction (Lind and Tyler, 1988). Another study focused specifically on differences in the procedural justice perceptions of men and women, using federal-government-wide survey data from 1980, and found that determinants of procedural justice perceptions have a larger impact on job satisfaction for women than men (Sweeney and McFarlin, 1997).

Organizational citizenship behavior (OCB) is composed of activities that are voluntary, pro-social, and thus are neither dictated by organization structure or job responsibilities nor induced by the threat of sanctions (Smith, Organ, and Near, 1983). It is described as being composed of five components including altruism, courtesy, civic virtue, conscientiousness and sportsmanship (Organ, 1988). Later scholars reorganized these five into the two categories of citizenship behavior directed towards individuals (OCBI) and behavior directed towards the organization (OCBO) (Williams and Anderson, 1991). Correlations between procedural justice indicators and OCBI range from 0.03 to 0.29 and correlations with OCBO range from 0.18 to 0.30 (Colquitt et al., 2001).

In one of the earlier studies, determinants of procedural justice perceptions were found to influence four of the five components of OCB (Moorman, 1991; Colquitt et al., 2001). OCBO is

associated with both perceptions of the fairness of a specific event and global procedural justice perceptions (Choi, 2008). More broadly, the relationship between OCB and procedural justice indicators have been studied in a number of settings, including a hospital (Konovsky and Pugh, 1994), a Canadian union (Skarlicki and Latham, 1996), an international manufacturer (Burton et al., 2008), a grocery store (Ehrhart, 2004), and a university (Masterson et al., 2000). In some studies, managers are asked to provide information on organizational citizenship behavior separately from employee-provided perceptions of procedural justice (Burton et al., 2008; Choi, 2008; and Konovsky and Pugh, 1994).

Some research finds that there is a mediating variable between procedural justice perceptions and OCB. Leader-member exchange, which considers the sum of interactions over time between a manager and an employee, was recently found to mediate the relationship (Burton et al., 2008). Konovsky and Pugh (1994) did not reject their hypothesis that trust mediated the association between procedural justice perceptions and OCB. Perceived organizational support, a measure of the degree to which employees believe they are valued by the organization, was also found to be a mediator (Masterson et al., 2001). However, when testing multiple conceptions of the relationship between procedural justice perceptions, satisfaction, and OCB, findings indicated that procedural justice perceptions and satisfaction are independent predictors of OCB, i.e. one does not mediate the relationship between the other and OCB (Fassina et al., 2008).

Intent to turnover is “a conscious and deliberate willfulness to leave the organization” (Tett and Meyer, 1993). Studies consistently show that turnover intentions are the best predictor of actual turnover rates (Steel and Ovalle, 1984). While turnover intentions are influenced by other attitudes such as satisfaction, levels of organizational commitment, and opportunities available in the labor market, justice scholars have examined the relationship between these

withdrawal behaviors/intent and perceptions of fairness. Correlations between procedural justice indicators and turnover intentions range from -0.02 to -0.46 (Colquitt et al., 2001). Early studies of this relationship first confirmed that the effects of procedural justice were separate and independent from the effects of distributive justice on turnover intentions (Alexander and Ruderman, 1987; Dailey and Kirk, 1992). Another study found that, as with job satisfaction, procedural justice exhibited a larger association with the decision to stay with an organization for women as opposed to men (Sweeney and McFarlin, 1997).

### *Leventhal Criteria as Predictors of Behavior*

Research on the link between procedural justice perceptions (or its determinants) and behavior is limited in both its quantity and quality. In particular, studies examining the filing of complaints or grievances traditionally examine characteristics of the structure of the grievance system as independent variables and the fairness perceptions associated with that particular structure as the dependent variable (Greenberg, 1990; Walker et al., 1974a; and LaTour et al., 1976). In fact, experimental studies like these serve as the foundation for procedural justice research as described earlier in this chapter. It is only recently that scholars have considered how procedural justice perceptions, as an independent variable, are associated with the filing of grievances. One difficulty in measuring complaint rates is that formal complaint statistics do not represent the complete number of complaints within an organization because many are settled informally between individuals (Gordon and Fryxell, 1993) or through alternative dispute resolution procedures which are explicitly designed to reduce the number of issues that become formal complaints.

Generally, when attempting to understand how procedural justice perceptions influence complaint rates, scholarship is long on theory and short on empirical testing. One hypothesis suggests that a justice culture or a culture of silence in the organization influences the rate of grievance filings. Employees with a fear of injustice are less likely to voice their concerns or file grievances (Shapiro and Kirkman, 1999). Likewise, silence can result from peer pressure to not raise various concerns to the attention of management in either a formal or informal manner (Milliken et al., 2003). A second hypothesis suggests that disincentives discourage individuals from filing grievances. Disincentives can range from a general fear of reprisal (Rudman et al., 1995; Morrison and Milliken, 2000) to lower promotion rates and performance appraisals, and higher rates of turnover for both the individual filing the grievances and the manager against whom the grievances are filed (Lewin, 1987).

Empirical results on the relationship between determinants of procedural justice perceptions and the filing of grievances are conflicting. One set of finding suggest as procedural justice indicators decrease, the filing of complaints increases. For example, studies examining only the impact of voice on the rate of grievance filing found a negative relationship: as voice opportunities decreased, the filing of grievances increased (Gordon and Fryxell, 1993). Furthermore, employees filed complaints alleging violations of state workplace safety laws with a state department of labor when procedural justice indicators were violated (Youngblood et al., 1992). Different studies found a decrease in determinants of procedural justice perceptions is associated with a decrease in the filing of complaints. For example, a decrease in perceived voice opportunities was associated with the filing of fewer grievances after the implementation of self-managed work teams (Shapiro and Kirkman, 2001). Likewise, when considering whether to file a

sexual harassment complaint, reporting of the incident was associated with lower procedural justice perceptions (Rudman et al., 1995).

### Conclusion

Although procedural justice theory developed out of the field of social psychology, its concepts are highly consistent with key ideas in public administration including due process requirements, red tape, and the requirements of personnel procedures including merit rules for hiring, promotion, discipline, performance appraisal, and removal. Procedural justice perceptions have been defined here as judgments on the degree to which decisionmaking within an organization is viewed as just and fair. These judgments center on both rules and the manner in which they are implemented. Procedural justice judgments have positive psychological value within an organization by impacting other attitudes and behaviors of employees such as satisfaction, organizational citizenship behavior, and turnover.

## CHAPTER 3

### RESEARCH QUESTIONS, DATA, AND METHODS

In the previous chapter, existing research on procedural justice perceptions was reviewed. In this chapter, testable hypotheses are proposed, based on that research. The data used to test the hypotheses are described in detail, including a measure of indicators of procedural justice perceptions of federal employees. After explaining the empirical methods that are used to test the hypotheses, a discussion of data limitations considers the strengths and weaknesses of the methods and data.

#### Research Questions

As noted earlier, this dissertation will build on earlier research by focusing on three research questions. First, what are the perceptions of procedural justice determinants among federal civilian employees? The second research question broadly considers what influences levels of procedural justice perceptions. The analysis will consist of three parts: (a) a replication of earlier research to understand the association between employee perceptions of the workplace and perceptions of procedural justice, (b) an identification of personal and organizational characteristics associated with the determinants of procedural justice, and (c) case studies of the organizational context of employee perceptions associated with procedural justice determinants.

The third research question addressed is: how do perceptions of procedural justice determinants impact other attitudes and behaviors of federal workers? The task of answering this research question will be divided into four parts. First, the relationship between employee

perceptions of procedural justice determinants and job satisfaction, turnover intentions, and the degree to which individuals exhibit a propensity to engage in organizational citizenship behavior will be considered. This is a replication of existing research.

The second part of Research Question 3 will consider the added effect of being a manager on the relationship between determinants of procedural justice perceptions and job satisfaction, turnover intentions, and the degree to which individuals exhibit a propensity to engage in organizational citizenship behavior. Concerns about fair procedures are likely to be more salient depending on one's role in the organization, for example for those whose roles in the group requires them to enforce or monitor fairness (Leventhal, 1980; Leventhal, Karuza and Fry, 1980). Likewise, an individual's role in an organization, such as holding a management position, may provide them with additional voice opportunities and additional information on decision consistency, the level of bias suppression, and the quality of information used during decisionmaking. Despite this argument being presented nearly three decades ago, little effort has been made to test it; typically, position in the organization is ignored altogether (for example see Ambrose and Schminke, 2003; Moorman, 1991; Alexander and Ruderman, 1987; and Blader and Tyler, 2003), only line employees' procedural justice perceptions are considered (for example see Folger and Konovsky, 1989; Ball, Trevino and Sims, 1993), or studies focus exclusively on managers' procedural justice perceptions (for example see Korsgaard, Schweiger, and Sapienza, 1995; Wade, O'Reilly and Pollock, 2006; and Bagdadli, Roberson and Paoletti, 2006).

The third part of Research Question 3 will address the possible added effect of being a member of a bargaining unit on the relationship between procedural justice determinants and the same dependent variables used in the previous two components of Research Question 3: satisfaction, turnover intention, and the likelihood that one will engage in organization-directed

organizational citizenship behavior. Again, there is no research assessing the differences in the effect of procedural justice determinants between unionized and non-unionized employees.

Differences could emerge for a number of reasons, including the fact that bargaining units are a sub-culture within the larger organization (Rainey, 2003). In an environment where unions do not bargain over pay, which is largely the case in the federal government, the major responsibility of the union is to influence procedures relating to grievance and performance appraisals, and ensuring employees have a voice with management. Research considering procedural justice and unions typically focuses on the impact of procedural justice perceptions on attitudes and behaviors directed towards the union (Skarlicki and Latham, 1996 and 1997; Fryxell and Gordon, 1989; Fuller and Hester, 2001; Mellor, Barnes-Farrell, and Stanton, 1999; Miceli and Mulvey, 2000; Tremblay and Roussel, 2001; and Aryee and Chay, 2001) and not the extent to which unionization may moderate the impact of procedural justice perceptions on employer-directed attitudes and behaviors.

The final component of the third research question focuses on the impact of procedural justice determinants on behavior, specifically the filing of complaints. Before an individual files a complaint, such as an allegation of discriminatory behavior, retaliation, or engage in a prohibited personnel practice, they must first perceive that an unjust event has occurred. Theory on the sociology of disputes suggests that once someone believes an unjust event has happened to them, the event is registered as a complaint or dispute if (a) blame can be placed on someone else for the situation and (b) the individual harmed believes something can be done to correct the situation (Felstiner, Abel, and Sarat, 1980).

Unfortunately, theories describing why this transition happens are inconsistent in terms of the impact of procedural justice perceptions and its determinants. It is suggested that employees



file disputes when they believe justice criteria have been violated (Youngblood, Trevino, and Favia, 1992). Another theory suggests that employees who believe justice rules are being violated will stay silent because of the perception that the complaint receiver will not respond in a just or fair manner (Milliken, Morrison, and Hewlin, 2003). The tendency for silence may increase if the individual who has grounds for the complaint has less power in the organization than the alleged perpetrator (Rudman et al., 1995). Research findings are also conflicting. A decrease in procedural justice perceptions has been associated with an increase in filings of wrongful dismissal complaints (Youngblood et al., 1992). Alternatively, lower procedural justice perceptions have been associated with a lower probability of filing of sexual harassment complaints (Rudman et al., 1995).

### Hypotheses

Research Question 1 is descriptive of one variable and thus does not involve the testing of hypotheses regarding relationships between variables. However, Research Question 2 asks what influences procedural justice perceptions, a question for which hypotheses are appropriate.

### *Research Question 2*

Scholars examine this question in primarily two ways. One method considers the relationship between the Leventhal criteria and a direct measure of procedural justice perceptions overall (Colquitt et al., 1991). Another formulation assesses if individuals are predisposed to exhibit certain levels of perceptions of procedural justice determinants based solely on their personal characteristics. Each requires different hypotheses, informed by the findings of existing scholarship.

Existing research assesses the effects of the Leventhal criteria and individual traits on direct measures of procedural justice perceptions. The group value model (Lind and Tyler, 1988), the relational model of authority (Tyler and Lind, 1992), and the group engagement model (Tyler and Blader, 2003) provide examples of such a formulation. For example, an increase in voice opportunities can increase overall perceptions of fairness; an increase in perceptions that employees are treated ethically increases perceptions of overall fairness, etc. Research on the group value model and other Tyler-developed derivatives support the hypothesis (Tyler, 1989; Tyler and Schuller, 1990; Tyler and Blader, 2003). Additionally, an experiment in which union leaders were trained on the importance of the 6 Leventhal dimensions resulted in an increase in perceptions that union leaders were treating union members in a procedurally just manner 3 months after the training concluded (Skarlicki and Latham, 1996). These results suggest the following hypothesis:

H<sub>2.1</sub>      As perceptions of procedural justice determinants  
                 increase, overall perceptions of fairness will increase.

Procedural justice researchers typically control for various personal traits of respondents, but little effort is made to explain why the characteristics of individuals may influence these perceptions. The assumption behind including these controls is that the various characteristics predispose an individual to perceive certain levels of procedural justice. Accounting for traits such as gender, race or national origin, age, tenure in the organization, or levels of education is consistent with the concepts of self-categorization and social identification theories (Pfeffer, 1983; Williams and O'Reilly, 1998; Wesolowski and Mossholder, 1997; Tsui and O'Reilly, 1992). Broadly, these theories suggest that people use easily accessible information about others to organize people into groups, regardless of the relevance of the particular trait to the task at

hand. This information is used to define and enhance one's identity by making distinctions between one's self and others, making the other less attractive, even if the difference are trivial (Williams and O'Reilley, 1998). Individuals categorized as being similar to the self are viewed more positively, with the assumption being that those in the same group have similar values and attitudes, whereas those in the other group are viewed with suspicion and interactions with others are anxiety-inducing (Wesolowski and Mossholder, 1997; Tsui and O'Reilley, 1992).

Furthermore, individuals seeing themselves as outside of the dominant group, as an "other," view themselves as deficient, often leading to increased anxiety and lower levels of satisfaction and cooperation within the organization. The grouping based on obvious personal traits, and the psychological impact can happen regardless if the individual has direct personal contact with other members in the group or individuals outside the group (Tsui and O'Reilley, 1992).

Importantly, when there is a diversity of groups within an organization, even based on simple personal traits that are not task-relevant, the groups can organize themselves and then establish a sub-culture in an organization in such a way that the fairness of decisionmaking can be perceived differently across groups (James, 1993).

Consistently small, but significant relationships are found to exist between justice perceptions and specific individual characteristics. Gender is important because of studies which indicate that men and women value procedural justice and distributive justice differently, with women being more concerned about procedural justice than men, and men being more concerned about distributive justice than women (Farh, Earley, and Lin, 1997; Sweeney and McFarlin, 1997; Lee and Farh, 1999). Furthermore, women generally exhibit higher perceptions of procedural justice (Cohen-Charash and Spector, 2001). In surveys of federal employees, minority civil servants typically exhibit lower perceptions of fairness and satisfaction than non-minorities

(U.S. Merit Systems Protection Board 2007, 1997). However, across procedural justice studies minorities exhibit higher perceptions of procedural justice (Cohen-Charash and Spector, 2001; Colquitt et al., 2002). This suggests the following hypotheses:

H<sub>2.2</sub>      Women will exhibit higher procedural justice perceptions than men.

H<sub>2.3</sub>      Minorities will exhibit higher procedural justice perceptions than non-minorities.

Other characteristics, like level of education or length of tenure with the organization are not as easily determined by the casual observer. Levels of educational attainment are described as reflecting values and cognitive preferences (Hitt and Tyler, 1991). Further, having different levels and types of education among organizational members influences the information used for decisionmaking and the decisions reached in an organization (Hitt and Tyler, 1991; William and O'Reilley, 1998), both of which relate directly to the perceived fairness of the decisionmaking process. In general, having higher levels of education appears to be associated with lower procedural justice perceptions (Cohen-Charash and Spector, 2001; Truxillo and Bauer, 1999). Organizational tenure is often used in studies of procedural justice perceptions because it is theorized that the longer one is in the organization, the more likely the individual is to view existing procedures as fair (Giles, Findley, and Field, 1997). Furthermore, longer tenure is associated with making different decisions than those with less experience specific to the organization due to the accumulation of tacit knowledge (Hitt and Tyler, 1991). Overall, an increase in tenure is associated with higher perceptions of procedural justice (Cohen-Charash and Spector, 2001; Adams-Roy and Barling, 1998). This suggests the following hypotheses:

H<sub>2.4</sub> Higher educational attainment is associated with lower procedural justice perceptions.

H<sub>2.5</sub> Higher organizational tenure is associated with higher perceptions of procedural justice.

Level of pay is used in only a handful of procedural justice studies (for example see McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1997), and is found to have a small but positive association (Cohen-Charash and Spector, 2001). Pay is included here because it is a frequent topic of discussion among federal employees, by way of questions about a new acquaintance's GS-level or pay band. Such discussions confer hierarchical rank among employees, creating categories consistent with the self-categorization and social identification theories described previously. Likewise, location in a field office as opposed to headquarters is also argued to be an important contributor to procedural justice perceptions, even though it does not appear to have been used previously. The concept of spatial proximity asserts that "simply living or working close to one another increases the likelihood of interaction and thus exposure to social information and others' attitudes" (Rice and Aydin, 1991, p. 224). This suggests the following hypotheses:

H<sub>2.6</sub> Higher pay is associated with higher procedural justice perceptions.

H<sub>2.7</sub> Employees in a field office will have different perceptions of procedural justice than employees in headquarters.

Although previous findings indicate that personal traits of individuals are related to perceptions of procedural justice, the magnitude of the relationships is small. Employing organizations are likely to play a significant role. Organizations define decisionmaking rules and

establish a culture supporting the manner in which the rules are implemented. Although federal agencies generally operate under similar statutes and regulations for personnel management, fiscal management, and contract management, agency-specific rules and the actions of individuals to carry out the rules vary by organization. Existing procedural justice research is either conducted within one organization, negating the need to control for organizational culture (Skarlicki and Latham, 1996 and 1997; Masterson, Lewis, Goldman, and Taylor, 2000; Folger and Konovsky, 1989), or studies across multiple organizations do not appear to control for it (Adams-Roy and Barling, 1998; Sweeney and McFarlin, 1997; Wesolowski and Mossholder, 1997). Given the large impact of agency-specific rules and culture on the justice environment within the organization, the following hypothesis is proposed:

H<sub>2.8</sub>      Agency of the respondent will impact procedural justice perceptions.

Both Leventhal (1980) and Walker and colleagues noted the important role that one's position could play in relation to procedural justice perceptions, as noted in the previous chapter. Similarly, the theory of positional or instrumental proximity stipulates that individuals within the same hierarchical level in the organization exhibit similar attitudes, regardless of the frequency of interpersonal interaction (Brass, Galaskiewicz, Greve, and Tsai, 2004; Rice and Aydin, 1991). This assumes that when an individual is defining her group identity, that the relevant other is someone in a position with equivalent span of control and access to resources (Brass et al., 2004). Transmission of attitude information flows through the structure of the organization (Rice and Aydin, 1991). Likewise, location in the organizational hierarchy is associated with differing levels of control over resources. Those with similar levels of resource control are more likely to exhibit similar attitudes towards the organization (Iberra and Andrews, 1993).

Together this research indicates that managers in an organization are likely to have procedural justice perceptions that are different from line employees. However, the direction of the relationship between management status and procedural justice perceptions could be either positive or negative. Attitude differences due to levels of resource control, consistent with concepts of process and outcome control (Thibaut and Walker, 1978), suggest that managers will exhibit higher perceptions of procedural justice perceptions because of their increased proximity to decisionmakers and resources. On the other hand, the relationship may be negative because managers may have more information on the accuracy and consistency with which decisions are made, which could decrease their faith in decisionmaking procedures (Rice and Aydin, 1991; Ibarra and Andrews, 1993). Although this relationship has not been explored in procedural justice research, scholars have controlled for management status in studies of other workplace attitudes. Managers at different levels of the organization possess different perspectives on the performance of the organization and its strengths and weaknesses, based on the access to information and other resources: “[management] level serves as a proxy for differences in information availability” (Hitt and Tyler, 1999, p. 334). Alternative hypotheses are proposed:

H<sub>2.9a</sub>     Managers will exhibit higher perceptions of procedural  
justice; or

H<sub>2.9b</sub>     Managers will report lower perceptions of procedural  
justice.

Unionized line employees will also exhibit different procedural justice perceptions as compared to non-unionized line employees. Differences could emerge for a number of reasons, including the fact that bargaining units are a sub-culture within the larger organization (Tajfel and Turner, 1979). As noted above, members of the sub-group develop perceptions of the others

that set the other apart from themselves. These perceptions may include ideas that the other does not treat the sub-group fairly, regardless of the actual treatment received, because of the need to set one's sub-group apart from the other. Frequent interpersonal interaction is not required for such effects to occur (Tajfel and Turner, 1979).

As was the case with managers, the direction of the relationship between procedural justice perceptions and unionization could go in either direction. The nature of the labor-relations climate is one reason why the relationship could be positive or negative. In an adversarial environment, individuals may look to the union to meet fairness needs not provided by management; in a cooperative environment, the individual may credit the union with meeting fairness needs (Fuller and Hester, 1998). A related but different concern rests on the need for control in the organization, consistent with the concerns of Thibaut and Walker (1978) in early procedural justice studies. Union members may have higher procedural justice perceptions because they may see the union as a means for controlling the work environment. Conversely, low procedural justice perceptions of union members could reflect the hope that the union will exert control in the future (Barling, Fullager, and Kelloway, 1992). Both Fuller and Hester (1998), and Barling, Fullager, and Kelloway, (1992) focused on the willingness to create a union. The degree to which union members have different perceptions of procedural justice in an organization where unions already exist has not been explored in the literature. Alternative hypotheses are proposed:

- H<sub>2.10a</sub>    Employees paying union dues will report higher  
perceptions of procedural justice; or



- H<sub>2.10b</sub> Employees paying union dues will report lower perceptions of procedural justice.

### *Research Question 3*

As noted earlier, Research Question 3 is divided into four parts. In general, perceptions of procedural justice determinants become the key independent variable of interest. The first part of the third research question replicates previously explored relationships, but does so using public sector data. Previous findings indicate a positive association between determinants of procedural justice perceptions and levels of satisfaction and a willingness to engage in citizenship behavior (Cohen-Charash and Spector, 2001; Colquitt et al., 2001). Likewise, the same scholars found a consistent and negative relationship between turnover intentions and determinants of procedural justice perceptions.

- H<sub>3.1.1</sub> An increase in determinants of procedural justice perceptions will be associated with an increase in levels of job satisfaction.
- H<sub>3.1.2</sub> An increase in determinants of procedural justice perceptions will be associated with an increased willingness to engage in organizational citizenship behavior.
- H<sub>3.1.3</sub> An increase in determinants of procedural justice perceptions will be associated with a decrease in turnover intentions.

The second part of the third research question considers the added effect of being a manager on the relationship between determinants of procedural justice perceptions and the dependent variables. As noted above, managers are either participants in decisionmaking activities or have closer proximity in the hierarchy to those making decisions. As a result, managers may have different evaluations of the fairness of the decisionmaking process than line employees. It is hypothesized that the relationship between indicators of procedural justice and the three dependent variables will be different for managers as compared to non-managers. The added effects of being a manager could be positive because managers have increased opportunities to influence decisionmaking. On the other hand, the added effects could be negative because managers may have more information on the accuracy and consistency with which decisions are made, which could decrease their faith in decisionmaking procedures. This hypothesis tests a relationship previously unexplored in the research. Alternative hypotheses are proposed:

- H<sub>3.2a</sub>      Being a manager has an added positive effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions;
- or
- H<sub>3.2b</sub>      Being a manager has an added negative effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions.

The third part of Research Question 3 will address the possible added effect of being a member of a bargaining unit on the relationship between determinants of procedural justice perceptions and the same dependent variables. It is hypothesized that the relationship between determinants of procedural justice perceptions and the three dependent variables will be different for unionized employees as compared to non-unionized employees. Union agreements provide added procedural requirements which may increase employees' perceptions of the fairness of the system. On the other hand, a unionized organization may have a sub-culture of distrust which socializes employees to believe that systems are unfair, despite the added procedural requirements provided by the union contract. As with the added effects of management status, this hypothesis tests a relationship previously unexplored in the research. Alternative hypotheses are proposed:

- H<sub>3.3a</sub>     Being an employee who pays union dues has an added positive effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions; or
- H<sub>3.3b</sub>     Being an employee who pays union dues has an added negative effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions.

The fourth part of the third research question examines the relationship between determinants of procedural justice perceptions reported in one year and the filing of formal

complaints in the next year. As noted above, research and theory provide conflicting explanations of the direction of these relationships. It is reasonable to expect any of three possible relationships between indicators of procedural justice perceptions and the filing of complaints. First, a decrease in procedural justice determinants is associated with a decrease in complaint filings. Second, a decrease in procedural justice determinants is associated with an increase in complaint filings. A third possible relationship is a curvilinear one – a decrease in procedural justice determinants is first associated with an increase in grievance filings, but then the rate of grievance filing decreases. Alternative hypotheses are proposed:

- H<sub>3.4.1a</sub> As determinants of procedural justice perceptions decrease, the filing of complaints will decrease;
- H<sub>3.4.1b</sub> As determinants of procedural justice perceptions decrease, the filing of complaints will increase; or
- H<sub>3.4.1c</sub> As determinants of procedural justice perceptions decrease, the filing of complaints will initially increase, but then decrease.

Alternative dispute resolution (ADR) procedures are designed to resolve complaints before they become formalized. The use of ADR is intended to resolve conflicts in a way that minimizes the administrative costs associated with traditional grievance systems while at the same time resolving issues in a less adversarial manner. Importantly, the presence and use of ADR opportunities is likely to change the number of complaints that are filed. Specifically, issues that are successfully resolved using ADR will not become formal complaints, leading to the following hypothesis:

H<sub>3.4.2</sub> As the use of ADR increases, the filing of complaints will decrease.

Organizational stability has proven to play an important role in organizational performance (O'Toole and Meier, 2003; Meier and O'Toole, 2006). Stability can be viewed from a number of perspectives, including the tenure of top management, turnover rates in general, or in terms of procedural stability. Leventhal (1980) noted the importance of fair procedures during times of organizational change. In federal agencies, many have implemented significant changes in their personnel systems, including changes to classification and pay systems, performance appraisal methods, and hiring methods in the last decade. These changes create significant organizational turmoil, requiring a significant investment in training for managers and human resources staff, and in some instances resulting in legal challenges or new collective bargaining efforts. Despite the turmoil, changes to personnel systems are often proposed with the promise that they will ultimately improve management and performance. Alternative hypotheses are proposed:

H<sub>3.4.3a</sub> The presence of alternative personnel systems will be associated with increased complaint filings; or

H<sub>3.4.3b</sub> The presence of alternative personnel systems will be associated with lower complaint filings.

### Data and Variables

To test the hypotheses, data from a number of sources are used. The primary data used to answer the research questions come from the 2005 Merit Principles Survey, administered by the U.S. Merit Systems Protection Board (MSPB) in the summer and fall of 2005. In addition to the

MSPB survey, information on the number of formal complaints filed by agency employees, the use of alternative dispute resolution techniques, and the presence of an alternative personnel system is employed. These data will permit an assessment of the determinants of procedural justice perceptions and the degree to which determinants of procedural justice perceptions may influence behavior. This section begins with an overview of the Merit Principles Survey and then describes how determinants of procedural justice perceptions are operationalized. This measure is composed entirely of items from the Merit Principles Survey. Next, attention is focused on the dependent variables measuring other attitudes and behaviors. Three of the dependent variables originate from the survey, but complaint rates, ADR rates, and information on the presence of alternative personnel systems come from sources other than the survey.

### *Design of the MSPB Survey*

The 2005 MSPB survey, like previous surveys, asked questions regarding employee perceptions of the work environment, pay and supervision, and fairness in the workplace. In total, the survey contained 69 multi-part questions, including 11 questions seeking demographic information and 10 questions to be answered exclusively by managers. Before administering the survey, MSPB reports that questions were reviewed by federal human capital executives and the entire survey was pilot tested and revised as needed. Most surveys were disseminated and collected electronically, while those federal employees without regular email access were sent hard-copies of the survey. MSPB has administered similar surveys since the agency's creation as fulfillment of its statutory responsibilities to monitor both the performance of the Office of Personnel Management (OPM) (for example, see U.S. Merit Systems Protection Board, 2001) and the state of the merit system (for example, see U.S. Merit Systems Protection Board, 1997).

MSPB used a stratified random sample design to select survey participants, stratified according to sub-agency and management status. In the report summarizing the survey findings, MSPB noted that the stratification according to agency and management status was due to the long-standing findings of multiple government surveys “that non-supervisory and supervisory employees’ job experiences, perceptions, and views of their roles in government service often differ significantly” (U.S. Merit Systems Protection Board 2007, p. 2). Agencies included in the survey are listed in table 3.1.

Table 3.1  
Federal Agencies Included in the 2005 Merit Principles Survey

Agriculture – Food Safety and Inspection Service	General Services Administration – Public Building Service	Justice – Bureau of Prisons
Agriculture – Forest Service	General Services Administration – Other	Justice – Drug Enforcement Administration
Agriculture – Natural Resources Conservation Service	Health and Human Services – Centers for Disease Control and Prevention	Justice – Executive Office of the U.S. Attorney
Agriculture – Other	Health and Human Services – Indian Health Service	Justice – Other
Air Force	Health and Human Services – National Institutes of Health	Labor
Army – U.S. Army Corps of Engineers	Health and Human Services – Other	National Aeronautics and Space Administration
Army – Other	Homeland Security – Customs and Border Protection	Navy – Marine Corps
Commerce – National Institute of Standards and Technology	Homeland Security – Immigration and Customs Enforcement	Navy – Other
Commerce – National Oceanic and Atmospheric Administration	Homeland Security – Federal Emergency Management Agency	Office of Personnel Management
Commerce – Patent and Trademark Office	Homeland Security – Transportation Security Administration	Social Security Administration

Commerce – Other	Homeland Security – U.S. Coast Guard	State Department
Defense – Defense Contract Management Agency	Homeland Security –U.S. Secret Service	Transportation – Federal Aviation Administration
Defense – Defense Finance and Accounting Service	Homeland Security – Other	Transportation – Other
Defense – Defense Logistics Agency	Housing and Urban Development	Treasury – Internal Revenue Service
Defense – Other	Interior – Bureau of Land Management	Treasury – Office of the Comptroller of the Currency
Education	Interior – Indian Affairs	Treasury – Other
Energy	Interior – National Parks Service	Veterans Affairs – Veterans Benefits Administration
Environmental Protection Agency	Interior – Other	Veterans Affairs – Veterans Health Administration
Federal Deposit Insurance Corporation	Justice – Alcohol, Tobacco, Firearms, and Explosives	Veterans Affairs - Other

By stratifying according to both sub-agency and management status, it allows government officials and scholars to reach statistically-supported conclusions about perceptions at the agency level, as well as among managers within each agency. This is accomplished by over-sampling managers, relative to their presence in the federal government and within each agency, and the over-sampling of small organizations, relative to their presence in the federal population. MSPB did not select the same proportion of individuals from each strata population. This approach is consistent with their practices in past surveys and the practices used for the OPM Federal Human Capital Survey, administered in 2002, 2004, and 2006. Selection probabilities ranged from 93% of managers at the Centers for Disease Control and Prevention to 7% of managers in the Executive Office of the U.S. Attorney, for example.

Empirically, this type of design has a number of implications. First, when there are large differences in strata population sizes, between the Army and NASA for example, a stratified



sample with unequal probabilities of selection decreases variance (Lohr, 1999).<sup>7</sup> Given MSPB's assumption that results will vary by agency and management status, the different probabilities of selection need to be accounted for in the empirical models. At a fundamental level, stratification and different probabilities of selection imply that our total sample is not representative of the federal employee population. Statistics derived from a simple random sample of the federal employee population are likely to result in different findings than a stratified selection procedure would produce. Accounting for the different selection probabilities through the use of design weights means that we can otherwise ignore charges of selection bias (Pffefferman, 1993).

The goal of design weights is to ensure that the results of the drawn sample are representative of the population. Design weights represent the number of individuals in the strata population that each individual selected for the sample is to signify. This implies that weighting values will be equal to or greater than one. Likewise, respondents belonging to an under-represented group will have a higher weight than those belonging to an over-represented group, i.e., individuals in the Army sample will have a larger design weight value than those selected to be in the NASA sample (Dorofeev and Grant, 2006). Many texts suggest design weights should equal the inverse of the selection of probability by strata (Groves et al., 2004; Lohr, 1999; Kalton and Cervantes, 2003).

A brief example illustrates the challenge. Assume we are working with a population that we divide into two strata. Strata 1 has a population of 100 and strata 2 has a population of 500 (Table 3.2). We select different size samples to ensure we have enough members to say something interesting about each strata (e.g. 50 from strata 1 and 100 from strata 2), resulting in different probabilities of selection (i.e. strata sample size/strata population). In our resulting

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<sup>7</sup> Variance is a measure of spread in the distribution of a random variable, or the distance of a specific observation from its mean (Wooldridge, 2003).

sample, members of strata 1 are overrepresented, relative to their presence in the total population. Analyzing the data without accounting for the selection scheme would produce biased results—the effects of being in strata 1 would be exaggerated. The design weight is calculated by the inverse of the selection probability (strata population/strata sample size). Each sample member in strata 1 represents two individuals in the population; each sample member in strata 2 represents 5 individuals in the population.

Table 3.2  
Illustration of Stratified Sample Design and Weighting Scheme

	Strata 1	Strata 2
Population	100	500
Sample Size	50	100
Probability of Selection	0.5	0.2
Design Weight	2	5

MSPB provided weights in the public data set. Each strata is assigned a different weight in their scheme. However, upon examination of the weights, significant concerns arise. First, many of the weights have a value less than 1. Using the inverse of the selection probability, such a result would be impossible. Again, design weights represent the number of individuals in the strata population that each individual selected for the sample is to signify. The formula used to derive the MSPB weights is obviously different than the inverse of the selection probability. Specifically, the formula MSPB used to calculate the weights is:

$$(\text{strata population/governmentwide population}) * (\text{total respondents/strata respondents}).$$

This formula does not account for the different probabilities of selection. It may be an attempt at combining the design weight and a weight to adjust for non-response—but an incorrect attempt. The first part of the equation is inconsistent with the literature and example discussed above.

As a result, design weights were calculated by the author, as specified above and applied in lieu of the MSPB-provided weights. The population of each strata (N) and the sample selected from each strata (n) were provided by the MSPB. The probability of selection is thus calculated by  $n/N$ . The inverse of the selection probability is calculated by  $N/n$  and represents the design weight applied in the analysis in the remainder of this dissertation.

### *Operationalizing the Leventhal Criteria*

The Leventhal criteria are considered determinants of procedural justice perceptions. That is, when the Leventhal criteria are higher, we expect procedural justice perceptions to be higher. Individual survey items were selected to correspond with each of the Leventhal criteria. Specifically, 3 survey items are chosen to represent voice, three to represent consistency, three to represent accuracy, etc. A total of 18 survey items comprise the additive index (6 Leventhal criteria x 3 survey items each). The selected survey items are reported in Table 3.3 and will be referred to as the Leventhal Index in the remainder of the text. This structure ensures that each Leventhal determinant is equally weighted since the index is constructed by summing responses across all selected items. Furthermore, this balance is deliberate. Procedural justice research indicates that the importance of one Leventhal determinant over another will vary by individual and by situation (Ambrose and Schminke, 2003). Thus, across the large sample, it is not reasonable to consistently weigh one determinant more or less than another.

It is important to stress that the Leventhal Index is a measure of the *determinants* of procedural justice, not a direct measure of procedural justice perceptions. The Leventhal criteria are specific and more narrow than the global concept of procedural justice. Generally, higher perceptions of the Leventhal criteria must be present for individuals to have high levels of procedural justice perceptions. As a result, the research questions stated in Chapter 1 can be better specified. As operationalized here, the first research question focuses on summarizing federal employee perceptions captured by the Leventhal Index. The second research question analyzes: (a) a replication of earlier research by linking the Leventhal Index to a single-item measure of procedural justice perceptions, (b) an identification of personal and organizational characteristics associated with the Leventhal Index, and (c) a development of case studies, selecting agencies based on their Leventhal Index values. The third research question now becomes: (a) how does the Leventhal Index influence satisfaction, turnover intentions, and the likelihood of engaging in organizational citizenship behavior; (b) what is the added effect of being a manager on the association between the Leventhal Index and the variables of interest; (c) what is the added effect of being a dues-paying union member on the association between the Leventhal Index and the variables of interest; and (d) what is the association between the Leventhal Index and the filing of complaints.

Table 3.3  
Survey Items Used for the Leventhal Index

Leventhal Index Cronbach's $\alpha = 0.887$	
Voice	
Q2b	I am able to openly express concerns at work.
Q33c	I trust my supervisor to listen fairly to my concerns.
Q35j	I am comfortable discussing workplace conflicts with my supervisor.

All responses: 5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree	
Consistency	<p>Q22b In the past two years, to what extent do you believe you have been treated fairly regarding awards?</p> <p>Q22d In the past two years, to what extent do you believe you have been treated fairly regarding performance appraisals?</p> <p>Q22g In the past two years, to what extent do you believe you have been treated fairly regarding pay?</p>
All responses: 5 great extent, 4 moderate extent, 3 don't know, 2 minimal extent, 1 no extent	
Accuracy	<p>Q5g In my work unit, performance ratings accurately reflect job performance.</p> <p>Q5h Recognition and rewards are based on performance in my work unit.</p> <p>Q13 Objective measures are used to evaluate my performance.</p>
All responses: 5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree	
Correctability	<p>Q31a I trust third party investigative or adjudicatory agencies (such as the OSC, EEOC, FLRA, MSPB) to respond appropriately to complaints.</p> <p>Q31b I believe that the current employment grievance system, if I had occasion to use it, would be fair.</p> <p>Q31c I believe that the current employment appeals system, if I had occasion to use it, would be fair.</p>
All responses: 5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree	
Ethicality	<p>Q2a I am treated with respect at work.</p> <p>Q33f I trust my supervisor to act with integrity.</p> <p>Q34e I trust managers above my immediate supervisor to act with integrity.</p>
All responses: 5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree	
Bias Suppression	<p>Q33g I trust my supervisor to refrain from favoritism.</p> <p>Q34f I trust managers above my immediate supervisor to refrain from favoritism.</p>
5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree	

- Bias     A summation of Q25, Q26, and Q27, which asked respondents to indicate if they perceived they were discriminated against, if they experienced a prohibited personnel action, or if they perceived retaliation.
- 5: no bias perceived
  - 4: one type of bias perceived
  - 3: two types of bias perceived
  - 2: three types of bias perceived
  - 1: four or more types of bias perceived

Survey questions included in the additive Leventhal Index were selected for each determinant based on their consistency with measures used by other scholars. Until 2001, when Colquitt proposed and validated a set of standard survey items, scholars operationalized the Leventhal criteria in a myriad of ways. In the previous chapter, Table 2.2 provided examples of the Leventhal criteria as survey items, using examples from Colquitt (2001), Moorman (1991), and Folger and Konovsky (1989). For example, other scholars measure voice by asking individuals if they have opportunities to express opinions and if supervisors consider those opinions. Three items in the MSPB asked about opportunities to express opinions and the degree to which managers consider those opinions in decisionmaking.

Measures of consistency developed by other scholars usually employ the word “consistency.” Often they do not capture the complexity proposed by Leventhal, who suggested it was important to consider consistency across time and across individuals. Unfortunately, no questions in the MSPB survey explicitly use the word “consistency.” Additionally, no MSPB survey questions ask respondents if they feel they were treated fairly as compared to treatment received by their peers or some referent other. In lieu of items meeting either or both of these standards, questions were selected which captured the idea of consistency across time.

Accuracy is frequently measured by other scholars with questions that assess the quality of information used make decisions, the source of the information, and the familiarity of the

decisionmaker with actual performance. Leventhal (1980) noted the importance of the source and the objectivity of the information used to make decisions. Items were selected from the survey which asked about the perceived objectivity of performance measures and the degree to which performance ratings and awards are distributed based on performance.

Questions regarding the correctability and ethicality of decisions and decisionmakers often use the words appeal, ethical, and honest to capture the concepts. Recall that Leventhal (1980), when discussing correctability, intended that opportunities to appeal decisions could be either formal or informal processes. Questions in the MSBP survey asked directly about the perceived fairness of formal avenues for hearing grievances and appeals, both within and outside an individual's employing agency. When measuring ethicality, scholars consider a respect for individual rights, truthfulness, and honesty, attempting to overcome Leventhal's "vagueness" of the term ethicality (Ambrose and Schminke, 2001, p. 238). Although no MSPB survey items explicitly use the terms ethics, honesty, or truthfulness, items asking about respect and integrity were deemed appropriate proxies.

Bias suppression, the last of the determinants, is often measured with overly-simplistic, single-item measures with use the word "bias." This is overly simplistic because of the multiple forms of bias and the different manners in which it can manifest itself in an organization. A key goal of the MSPB survey is to assess the presence, or lack thereof, of bias in the federal workforce which would constitute a threat to the merit principles. As a result, there are multiple items in the survey which can be used to measure this concept. First, two questions were selected because they explicitly ask about the presence of favoritism in the workplace. The third item in the bias suppression measure is a combination of a series of questions which ask respondents if they experienced in the last two years any number of potential forms of biased treatment.

Responses to these questions (1 if it was perceived that the unfair treatment was experienced, otherwise 0) were added together and then developed into a 5-point scale to ensure consistency with the other questions in the bias suppression measure and the rest of the Leventhal Index. As detailed in Table 3.3, a score of 5 indicates no bias was perceived, similar to other questions in which a high score indicate a high level of fairness.

#### *Use of an Additive Index*

The 18 survey items (3 for each of the 6 Leventhal criteria) are combined into an additive index for the purposes of analysis in the body of the dissertation. As a result, a respondent's score on the Leventhal Index can range from 0 to 72, with a 72 indicating high perceptions of procedural justice determinants. Overall, the purpose of the index is to measure the determinants of procedural justice. Additive indices are preferred to the use of single survey items in this analysis. Responses to individual survey items contain a certain level of error. The error can be attributed to poor question wording, misinterpretation, and error due to sampling and non-response issues (to be discussed in detail below). A major benefit of an additive index over a single survey item is that the errors across the multiple survey items included in the index are assumed to cancel each other out and thus equal zero (Spector, 2002). Measurement error decreases the reliability of the item, and an additive index is a method for reducing that error.

An additive index is also preferred to factor analysis. Factor analysis is typically used to identify patterns in relationships among variables and to “reduce a large number of variables to a smaller number of statistically uncorrelated variables (Agresti and Finlay, 1997, p. 630). This data reduction is useful for the sake of simplifying interpretation and for reducing multicollinearity between independent variables. The identification of factors, whether done in a



confirmatory or exploratory manner, assumes that the individual variables exhibit a normal distribution and that the relationship between the items is linear (Agresti and Finlay, 1997). Both of these assumptions are violated by the survey data in this study. Neither the variables making up the Leventhal Index, nor the items used as dependent variables are normally distributed (Table 3.4). Additionally, relationships between survey items which use ordinal response options can not be assumed to be linear. We can not assume that the distance between each answer option is equal because they are not continuous variables (Long, 1997).

Table 3.4  
Skewness of Key Survey Items

Survey Item	Skewness	Survey Item	Skewness
Bias Suppression		Accuracy	
Q33g	-1.656	Q5g	-0.578
Q34f	-0.678	Q5h	-0.554
Bias	-0.271	Q13	-0.503
Correctability		Ethicality	
Q31a	-0.495	Q2a	-1.155
Q31b	-0.533	Q33f	-1.122
Q31c	-0.541	Q34e	-0.707
Voice		Satisfaction	
Q2b	-0.891	Q2m	-0.995
Q33c	-0.834	Q35n	-0.896
Q35j	-1.038	Q35o	-0.428
Consistency		Org. Citizenship Behavior	
Q22b	-0.273	Q1j	-0.879
Q22d	-0.645	Q1k	-0.987
Q22g	-0.559	Intent to Turnover	
		Q40	0.849

A number of other characteristics of factor analysis make it less preferable to using an additive index. First, measurement error remains when factor analysis is used, although the amount of error is less than when using a single item (Kim and Mueller, 1978). Second, factor

analysis is highly sensitive to sample selection and response rates. Responses from one set of individuals could suggest one factor structure, while responses from a different set of individuals may yield a completely different factor solution (Kim and Mueller, 1978). Essentially, factor structure is unreliable in a test-retest sense. Third, factor analysis assumes that the correlation between items is due to a common factor (a and b are caused by f). However, proving that this is indeed the relationship is impossible, making factor analysis indeterminate (DeVellis, 2003). The correlation may instead be due to a causal relationship (a causes b or vice versa). Kim and Mueller indicate this weakness: “implies that [the] appropriateness of the factor analytic interpretation can never be proved” (1978, p. 43).

#### *Reliability of the Leventhal Index*

Reliability broadly represents “the lack of distortion or precision of a measure” (Kerlinger and Lee, 2000, p. 643). The reliability of the Leventhal Index, in part, depends on the proportion of variance attributable to the true score of the indicators, exhibited by high intercorrelation. This is calculated with Cronbach’s alpha which evaluates internal consistency by examining the mean inter-item correlation (Kerlinger and Lee, 2000). As reported in table 3.3, the Cronbach’s alpha across the 18 items in the Leventhal Index is 0.887. As an additional check on the reliability of the index, the Cronbach’s alpha was also calculated for the Leventhal Index and its components in a random sample of 10% of the strata (11 of 114 strata) (Table 3.5). Across the Cronbach’s alpha scores for individual strata, a small number of items exhibit values between 0.60 and 0.70, amounts slightly lower than the traditional rule of thumb. This can be attributed to the use of questions that are consistent with, but not exact copies of, previously validated measures of the Leventhal criteria such as Colquitt (2001). Most importantly, the Cronbach’s alpha scores for the

Leventhal Index across all eleven strata were within the range of 0.85 to 0.90. The consistent level of the Cronbach's alpha across multiple individual strata is a further indication of the measure's reliability.

Table 3.5  
Reliability of the Leventhal Index (Cronbach's Alpha Scores)

	Leventhal Index	Voice	Consistency	Accuracy	Correctability	Ethicality	Bias Suppression
Governmentwide	0.887	0.836	0.780	0.806	0.891	0.772	0.744
Forest Service, nonsupervisors	0.854	0.822	0.732	0.755	0.872	0.682	0.663
Air Force, supervisors	0.888	0.856	0.819	0.738	0.884	0.768	0.762
Justice-Other, nonsupervisors	0.903	0.841	0.745	0.853	0.908	0.793	0.733
Commerce-Other, supervisors	0.861	0.799	0.772	0.763	0.942	0.753	0.741
Energy, nonsupervisors	0.892	0.858	0.728	0.848	0.883	0.788	0.713
Labor, nonsupervisors	0.861	0.855	0.798	0.835	0.877	0.745	0.717
National Parks Service, supervisors	0.863	0.805	0.752	0.704	0.833	0.705	0.603
Social Security, nonsupervisors	0.894	0.844	0.765	0.811	0.887	0.824	0.703
Homeland Security-Other, supervisors	0.865	0.828	0.748	0.821	0.844	0.653	0.733
Centers for Disease Control and Prevention, nonsupervisors	0.903	0.840	0.810	0.822	0.907	0.778	0.782
Defense Finance and Accounting Service, supervisors	0.886	0.812	0.813	0.698	0.880	0.739	0.746

As noted in the previous chapter, Colquitt (2001) proposed, tested and validated a set of survey items for the concept of procedural justice. These survey items were designed to be consistent with the Leventhal criteria. The Merit Principles Survey does not contain these exact

questions, nor was it designed specifically for a study of procedural justice perceptions. To manage this challenge, the additive index structure was chosen for the data to minimize the error introduced by using approximate, instead of exact, measures. Additionally, the overall mission of the MSPB is consistent with the study of procedural justice. As an organization, it is tasked with protecting the rights of individuals employed within the federal personnel system, through the adjudication of individual cases, research, and oversight of OPM.

*Operationalizing Turnover Intentions, Job Satisfaction,  
and Organizational Citizenship Behavior*

Levels of job satisfaction, the propensity to engage in organizational citizenship behavior, and turnover intentions are dependent variables in the first three parts of the third research question. Data for these variables are taken from the MSPB survey. The survey items used for all of the dependent variables are identified in Table 3.6.

One question in the survey accounts for turnover intentions. Specifically it asks respondents how likely they are to leave their organization in the next 12 months. More than half of federal employees indicated it was very unlikely they would leave their organization in the next 12 months. Three survey items asked questions about job satisfaction overall, with the respondent's supervisor, and with managers above the respondent's supervisors. As was done with the Leventhal Index, the three job satisfaction items were combined into an additive index (Cronbach's  $\alpha = 0.744$ ). This is consistent with the formulation of Park and Rainey (2007) who used the 2000 MSPB survey. The job satisfaction scores have a possible range from 0 to 12, with a mean of 7.94, and a standard deviation of 2.69.

Table 3.6  
Dependent Variables from Survey

Satisfaction Cronbach's $\alpha = 0.744$		
	Q2m	In general I am satisfied with my job.
	Q35n	Overall I am satisfied with my supervisor.
	Q35o	Overall I am satisfied with managers above my immediate supervisor. All responses: 5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree
Organizational Citizenship Behavior Cronbach's $\alpha = 0.731$		
	Q1k	I would recommend the government as a place to work.
	Q1j	I would recommend my agency as a place to work. All responses: 5 strongly agree, 4 agree, 3 neither, 2 disagree, 1 strongly disagree
Turnover Intentions	Q40	How likely is it that you will leave your agency in the next 12 months? 5 very likely, 4 somewhat likely, 3 neither likely nor unlikely, 2 somewhat unlikely, 1 very unlikely

Organizational citizenship behavior is composed of activities that are voluntary, pro-social, and thus are neither dictated by organization structure or job responsibilities nor induced by the threat of sanctions (Smith, Organ, and Near, 1983). Measures of actual extra-role behaviors taking place within organizations are not easily available, especially for a governmentwide sample. However, the MSPB survey does contain questions which probe the respondent's willingness or likelihood to engage in activities consistent with organization-directed organizational citizenship behavior. Specifically, the survey asks employees to indicate how likely they are to recommend the government as a place to work, or recommend their agency as a place to work. Employees are neither required nor rewarded for promoting the government as a place of employment; it is a purely voluntary activity that is beneficial to the organization.

The two questions are combined through the used of an additive index (Cronbach's alpha = 0.731). Because they measure a willingness to engage in organizational citizenship behavior, and not an actual behavior, this will be referred to as the propensity to engage in citizenship behavior or citizenship propensity. The scores for the propensity to engage in organizational citizenship behavior range from 0 to 8, with a mean of 5.79, and a standard deviation of 1.79. Admittedly, this measure of organizational citizenship behavior is less than ideal; measures of the concept often contain a combination of more than 20 individual survey items (Organ, Padsakoff, and MacKenzie, 2005). However, two frequently used measurement schemes for organizational citizenship behavior include items relating to recruitment and promoting the organization as a good place to work, which are the extra-role behaviors captured in the survey items selected here (Padsakoff and MacKenzie, 1994; VanDyne, Graham, and Dienesch, 1994).

### *Complaint Data*

The fourth part of Research Question 3 will employ a dependent variable that is not present in the survey data. Agencies are required, under the Notification and Federal Antidiscrimination and Retaliation Act of 2002 (No FEAR Act), to report the number and types of formal complaints filed each year.<sup>8</sup> The statute requires that these data be reported quarterly on agency web pages, and that annual summary data are posted going back five previous fiscal years (Congressional Research Service, 2004).<sup>9</sup> The intent of this and other requirements of the statute is to hold agencies more accountable for engaging in prohibited personnel practices. As a result, these reports represent a unique and rich data source useful for answering questions relevant to this research. Specifically how do perceptions of procedural justice determinants reported in the

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<sup>8</sup> P.L. 107-174. May 15, 2002.

<sup>9</sup> For example, see [http://www.doi.gov/diversity/FY06\\_5yr\\_NPS.html](http://www.doi.gov/diversity/FY06_5yr_NPS.html).

2005 survey relate to the actual grievances filed in 2006? Grievance data will be operationalized as complaints filed per 1,000 employees.

The challenge presented by using the actual complaint data is that it is reported at the agency level, whereas the perceptions of procedural justice determinants captured by the survey are at the individual level. This requires the perceptions to be aggregated up to the agency level. Another complicating factor is that complaint data are not available for 6 out of the 57 organizational units specified in the survey data (Table 3.7). For example, the Centers for Disease Control and Prevention (CDCP) did not posted cumulative 2006 data; complaint data are only available for the first two quarters of 2006. The Department of Health and Human Services (HHS) reports departmentwide complaint activity. Using this report and complete No FEAR Act reports from other HHS components, complaint data from the HHS-Other unit includes CDCP complaints. CDCP data from the survey were combined with the HHS-Other survey data for the purposes of analysis.

Table 3.7  
Agencies Included in Complaint Analysis Only

Agriculture – Food Safety and Inspection Service	General Services Administration (includes Public Building Service)	Justice – Drug Enforcement Administration
Agriculture – Forest Service	Health and Human Services – Indian Health Service	Justice – Executive Office of the US Attorney
Agriculture – Natural Resources Conservation Service	Health and Human Services – National Institutes of Health	Justice – Other
Agriculture – Other	Health and Human Services – Other (includes Centers for Disease Control and Protection)	Labor
Air Force	Homeland Security – Immigration and Customs Enforcement	National Aeronautics and Space Administration
Army (includes Army Corps of Engineers)	Homeland Security – Federal Emergency Management Agency	Navy (includes Marine Corps)

Commerce – National Institute of Standards and Technology	Homeland Security –U.S. Secret Service	Office of Personnel Management
Commerce – National Oceanic and Atmospheric Administration	Homeland Security – U.S. Coast Guard	Social Security Administration
Commerce – Patent and Trademark Office	Homeland Security – Transportation Security Administration	State Department
Commerce – Other	Homeland Security – Other (includes Customs and Border Protection)	Transportation – Federal Aviation Administration
Defense – Defense Contract Management Agency	Housing and Urban Development	Transportation – Other
Defense – Defense Finance and Accounting Service	Interior – Bureau of Land Management	Treasury – Internal Revenue Service
Defense – Defense Logistics Agency	Interior – Indian Affairs	Treasury – Office of the Comptroller of the Currency
Education	Interior – National Parks Service	Treasury – Other
Energy	Interior – Other	Veterans Affairs – Veterans Benefits Administration
Environmental Protection Agency	Justice – Alcohol, Tobacco, Firearms, and Explosives	Veterans Affairs – Veterans Health Administration
Federal Deposit Insurance Corporation	Justice – Bureau of Prisons	Veterans Affairs - Other

At the Department of Defense (DOD), complaint data are not reported separately for either the Army Corps of Engineers or the Marine Corps. Complaint data for the Army include the complaints filed by the Core of Engineers and Navy complaint data include complaints from Marine Corp employees. Therefore, data for the Marine Corps are merged with Navy data; data for the Core of Engineers are merged with the Army data. Likewise, DOD does not produce a departmentwide report, making it impossible to identify the number of complaints to assign to the DOD-Other organizational unit. Therefore, this unit is dropped from the complaints analysis.

Customs and Border Protection at the Department of Homeland Security (DHS) is also missing cumulative 2006 complaint reports. However, DHS does report cumulative 2006 complaints at the department level. Using this report and complete No Fear Act reports from other DHS components, complaint data from the DHS-Other unit include complaints from



Customs and Border Protection. Survey data from this sub-unit were combined with the DHS-Other survey data for the purposes of analysis.

### *Data on the Use of Alternative Dispute Resolution*

In addition to the dependent variable for the complaint models coming from a source outside the MSPB survey, an independent variable from outside the survey is also included in the complaints models. In 1996, the Administrative Dispute Resolution (ADR) Act was passed to provide alternative means for resolving disputes among federal employees that would increase efficiency and reduce the use of the litigious formal complaint process.<sup>10</sup> Each agency is required to have in place ADR policies for resolving various types of complaints, but a significant amount of flexibility is provided. Opportunities for using ADR can be made available either before or after a formal complaint is filed, but employees can not be forced to use it. Both the types of ADR used in each agency vary and the types of complaints that an agency deems eligible for ADR varies. For example, an agency can decide that cases alleging discrimination based on race or national origin can be heard in ADR setting, but that age discrimination cases can not. Supporting regulations require departments to file reports with the Equal Employment Opportunity Commission on the use of ADR.<sup>11</sup>

Agencies are required to report the ADR data at the department level, although some choose to report at the agency level. For example, HHS reports ADR usage at the department level, while DOD reports the use of ADR for the Army, Navy, Air Force, etc. Importantly, data are available for all the components for which there is complaint data. ADR data reported in 2006 at the department level were assigned to agencies according to the proportion of the

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<sup>10</sup> P.L. 104-320. Oct. 19, 1996.

<sup>11</sup> For example, see <http://www.eeoc.gov/federal/adr/datatables/index.html>.

department's staff located in the particular agency. For example, in 2006 HHS reported a total ADR usage of 134. Employees in the Indian Health Service make up 21% of the department's employees. Therefore, 21% of the 134 ADR uses were allocated to the Indian Health Service. Like the complaint data, this amount was then used to determine the use of ADR per 1,000 employees in 2006 in each agency, for the ease of interpretation.

### *Data on Alternative Personnel Systems*

A second independent variable from outside the Merit Principles survey identifies the presence of an alternative personnel system. For the purposes of this research, an agency is designated as having an alternative personnel system if it was granted the authority to redesign pay and classification systems and/or has implemented the alternative system (Table 3.8).

Table 3.8  
Sources of Alternative Personnel System Indicators

Alternative Personnel System Implemented in 2006	Alternative Personnel System Authorized in 2006	Agency	Source
X		Air Force	Congressional Research Service (2005, 2008)
X		Army (includes Army Corps of Engineers)	Congressional Research Service (2005, 2008)
X		Commerce – National Institutes of Standards and Technology	U.S. Office of Personnel Management (2007)
X		Commerce – National Oceanic and Atmospheric Administration	U.S. Office of Personnel Management (2005)
X		Commerce – Other	U.S. Office of Personnel Management (2005)

Alternative Personnel System Implemented in 2006	Alternative Personnel System Authorized in 2006	Agency	Source
X		Defense – Defense Contract Management Agency	U.S. Office of Personnel Management (2007)
	X	Defense – Defense Finance and Accounting Service	Congressional Research Service (2005, 2008)
	X	Defense – Defense Logistics Agency	Congressional Research Service (2005, 2008)
X		Federal Deposit Insurance Corporation	U.S. Office of Personnel Management (2007)
	X	Homeland Security – Other (includes Customs and Border Protection)	U.S. Office of Personnel Management (2007a)
X		Homeland Security – Transportation Security Administration	U.S. Office of Personnel Management (2007)
	X	Homeland Security – U.S. Coast Guard	U.S. Office of Personnel Management (2007a)
	X	Homeland Security –U.S. Secret Service	U.S. Office of Personnel Management (2007a)
X		Navy (includes Marine Corps)	Congressional Research Service (2005, 2008)
X		Transportation – Federal Aviation Administration	U.S. Office of Personnel Management (2007)
X		Treasury – Internal Revenue Service	U.S. Office of Personnel Management (2007)
X		Veterans Affairs – Veterans Health Administration	Congressional Budget Office (2004)

### Empirical Models and Methods

The appropriateness of the hypotheses will be assessed using a number of different research methods, but the survey design weights are applied for all analyses. For example, the different dependent variables require different types of regression models. The selection and

execution of the case studies requires other analytical tools. This section explains the methods that will be used for each of the research questions.

### *Research Question 1*

The purpose of Research Question 1 is largely descriptive in nature to establish an understanding of the perceptions of procedural justice determinants in the federal government at the time of the survey. This will be accomplished by examining the Leventhal Index and its components. Where appropriate, survey responses are analyzed according to different demographic groups and different agencies. Differences between managers and non-managers, and unionized and non-unionized employees will be highlighted due to their relevance to analyses later in the dissertation. Data will be analyzed using the design weights. Finally, hypotheses indicating a specific direction for the relationships between procedural justice determinants and gender, minorities, managers, and union membership will be evaluated using one-tailed tests.

### *Research Question 2*

This research question is considered using both quantitative and qualitative methods. The quantitative analysis is conducted with a number of empirical models. Under Research Question 1, details on the extent to which federal employees hold the perceptions that are indicative of procedural justice are provided. In this second research question, models are presented that aim to predict the extent to which employees hold those perceptions.

Following the lead of the group value model (Lind and Tyler, 1988), the relational model of authority (Tyler and Lind, 1992), and the group engagement model (Tyler and Blader, 2003), the first step in the quantitative analysis for Research Question 2 employs a single-item, direct

measure of procedural justice as the dependent variable. The selected survey item is Q31d, which asks respondent to indicate if they agree or disagree with the statement: “I believe my agency treats me fairly in matters related to my employment.” The model will use ordered logit to assess the relationship between the Leventhal Index, which measures the determinants of procedural justice perceptions, and the direct measure of procedural justice perceptions. Included in this model are demographic and agency controls. As noted previously, hypotheses indicating a specific direction for the relationships between procedural justice determinants and various demographics will be evaluated using one-tailed tests. The agencies included in this analysis were previously listed in Table 3.1 and the demographic variables are detailed in Tables 3.9 and 3.10. To assess the relationship between each of the Leventhal criteria and the single-item procedural justice measure, a second model will include the six separate determinants instead of presenting them grouped together.

Table 3.9  
Variables Detailing Management and Union Status

Management Status:

Coded 1= management 0=non-management

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Q44	0	Non Supervisor – You do not supervise other employees.*
	0	Team Leader – You do not have official supervisory responsibilities or conduct performance appraisals, but you do provide employees with day-to-day guidance in work projects.
	1	Supervisor – You are responsible for employee performance appraisals and approval of their leave, but you do not supervise other supervisors.
	1	Manager – You are in a management position and you supervise one or more supervisors.
	1	Executive – SES or equivalent.

Bargaining Unit Status: Are you a dues-paying member of a union?

Coded 1= unionized 0=non-unionized

Q62	1	Yes
	0	No, but my position is covered by a bargaining agreement.
	0	No, I am not sure if my position is covered by a bargaining agreement.
	0	No. My position is either not covered by a bargaining agreement or I am otherwise not eligible to be a member of a union.

Table 3.10  
Demographic Variables

Variable Name	Survey Item	Description
Women	Q63	1 = female, 0 = male
Age	Q64	What is your current age
Minorities	Q66	1 = minority, 0 = non-minority
Completed Education	Q65	Current education level: 1 = high school or equivalent, 2 = associates degree, 3 = bachelors degree, 4 = masters degree, 5 = doctorate or equivalent
Federal Tenure	Q57	Years employed as a federal civilian employee
Agency Tenure	Q58	Years employed by your current agency
Salary in 1000s	Q61	Current annual salary, in thousands of dollars
Field Office	Q56	1 = located in a field office, 0 = located in headquarters

Table 3.11  
Summary of Empirical Models for Research Question 2

Dependent Variable	Independent Variables	Regression Method
Single-item procedural justice measure	Leventhal Index, demographic traits, employing agency	Ordered Logit
Single-item procedural justice measure	Individual Leventhal criteria, demographic traits, employing agency	Ordered Logit
Leventhal Index (ln)	Demographic traits, employing agency	OLS
Individual Leventhal criteria (6 separate models)	Demographic traits, employing agency	Ordered Logit

The next empirical model examines the extent to which personal and organizational characteristics influence the determinants of procedural justice perceptions, through the use of the Leventhal Index as the dependent variable. As noted above, a respondent's score on the Leventhal Index can range from 0 to 72. Because of the large ranges of potential values, the index will be treated as a continuous variable and ordinary least squares (OLS) regression will be used. This same model is then used to assess the relationship between demographic traits, employing agency, and each of the individual Leventhal criteria. Specifically, the model will be presented with bias suppression as a dependent variable, voice as a dependent variable, ethicality as a dependent variable, etc. This allows us to assess in more details whether certain individuals are predisposed to perceive the presence of particular determinants, due to either a particular demographic trait or their employing agency. The empirical models for the second research question are summarized in Table 3.11.

#### *Methods for Conducting Case Studies*

Two agencies are selected for case studies to gain a better understanding of how the unique organizational environment influences the determinants of procedural justice perceptions. For the purposes of this research, the case studies accomplish a number of goals. First, they can illustrate the validity, or lack thereof, for the quantitative findings. Second, they provide more detail than can be obtained from the survey data, such as information on particular rules, how employees view the implementation of the rules, and how employees are treated by management. In addition to checking the veracity of the quantitative findings, they can also serve as a check on the relevance of the indicators of procedural justice perceptions, by enabling practitioners to indicate their level of agreement with the importance of various issues. Overall, case studies

provide information that is context-dependent (Flyvbjerg, 2001). Generalizability is not the goal of the case studies in this research, nor is theory development, although both can be achieved with case studies (Miles and Huberman, 1994). Despite this, Flyvbjerg (2001) contends that cases can still be useful because of the nuanced information that is gathered.

Selection of the cases was driven by a number of factors. Due to resource constraints, only two agencies are selected for further study. As a result, selection was purposive and criteria-based, not random (Maxwell, 2005; Miles and Huberman, 1994). The maximum variation method was used to select cases. Under this rubric, the cases are not intended to be representative of the general population. Instead, cases are selected based on their variation on a particular variable to enable the collection of the broadest scope of information (Guba and Lincoln, 1989). Said another way, the cases are selected to be as different as possible on one characteristic that is important to the study to represent the diversity of the population (Guba and Lincoln, 1989; Maxwell, 2005). In this research, agencies are selected based on their average scores on the Leventhal Index.

Data were collected at agencies using elite interviews and, to a much lesser extent, document analysis. The quality, content and depth of information collected during interviews is dependent on the relationship between the interviewer and the interviewee; a better, more trusting relationship results in gathering more data in terms of both quantity and quality (Maxwell, 2005). Other scholars have noted that elites control and protect information that researchers seek and that elites may skew information to protect their own reputations or the reputations of their agencies (Marshall, 1984; Dexter, 1970). This is a particular problem if negative professional implications for the interviewee may result from providing critical information, or if colleagues of the elite are sitting in on the interview (Marshall, 1984; Dexter,



1970). The difficulties posed by elite interviews can be anticipated and managed. Perceptions of elites can be anticipated, based on both their position and thorough research on the organization (Marshall, 1984). Due to resource constraints, it was possible to interact with interviewees only while scheduling the session and during the single conversation itself. Multiple interactions were not feasible. This serves to minimize the time required of the elites (and increasing their willingness to participate) and also minimized the impact of the researcher on the operations of the organization. However, this also limits the building of a relationship between the researcher and the interviewee which might yield more detailed and critical information.

Before the interview can take place, the researcher must identify the appropriate individuals and get past the “gate keepers.” Getting past the “gate keepers” and convincing the officials to meet with the researcher requires the building of trust (Marshall, 1984; Dexter, 1970). For the case studies in this research, interviewees were contacted in different ways, through different channels, but the content of the contact was similar. The request included information about the credentials of the researcher, the topic of the research, a request for an interview, and an explanation of why their views would be important to the success of the research. Interviewees were told that their name would not be revealed in the study. Additionally, they were sent a one-page document describing procedural justice theory and a brief summary of the topics to be discussed during the interview. Examples of a typical introductory email (with the names removed) and the one-page description are provided in Appendix A.

Within each agency, elites from two groups were selected. First, agency officials in the Human Capital office were selected to represent the views of senior management. It was assumed that, as agency officials, they would be likely to present a more positive view on procedural justice perceptions in the agency than employees might. Second, union representatives were

interviewed to balance the information provided agency officials and to provide examples of fair or unfair treatment. Third, analysts at the U.S. Government Accountability Office (GAO) who are familiar with human capital management issues at the two agencies were interviewed for their perspective. GAO analysts are useful resources of information because they are trained to be politically neutral in their analysis and are required to have their work well-documented, increasing the accuracy of their assessments. Their contact with line employees in agencies is infrequent, however. Questions asked of union officials were the same as those questions asked of human capital executives, and the same asked of GAO analysts. Likewise the same topics were discussed at both agencies so that the findings could be compared and contrasted.

Interviews were semi-structured and open-ended. This format was selected to give the interviewee the opportunity to provide both factual information and opinions and to give them a chance to talk about themselves (Aberbach and Rockman, 2002; Marshall, 1984; Dexter, 1970). Before contacting potential interviewees, an interview guide was developed. The guide was edited by the researcher's advisor and edited in light of his comments. The interview protocols are provided in Appendix A. Based on analysis of the data, interviewees were asked questions about the consistency with which decisions are made in their agency, the degree to which bias influences decisionmaking, and the opportunities to correct inappropriate or inaccurate decisions. They were further asked to reflect on the possible reasons for results obtained from the model supporting Research Question 2, and to provide some general information about their background, position, and tenure with the agency. The other Leventhal criteria were not discussed in order to minimize the length of the interviews. Interviews ranged from 30 to 90 minutes in length, depending on how much detail the interviewee provided.

The interviews were conducted in-person and recorded with six individuals in their offices in Washington D.C.. Phone interviews were conducted with 13 individuals and were documented in field notes. The interviews occurred between March and May 2008. Details on the interviewees are provided in Appendix A. Of those interviewed, eight were identified by other interviewees as individuals who would have relevant experience and helpful assessments of procedural justice perceptions in the agencies. This is typically referred to as the snowball method. During interviews, supporting documents were requested such as results of internal surveys, copies of departmental policies, or summaries of relevant human capital management efforts.

Field notes from phone interviews and the recorded interviews were summarized and analyzed using contact summary memos. This format allows the researcher to organize the data according to specific topics so that themes can be identified across interviewees (Miles and Huberman, 1994). The specific topics to be covered were pre-structured around perceptions of correctability, consistency, and bias-suppression—the specific topics covered during the interviews.

Maxwell (2005) notes the importance of researchers reflecting on the bias they bring to qualitative research, including their expectations for findings. The researcher in this instance has prior knowledge of human capital management practices at both agencies under study. As a former analyst at GAO, the researcher was often asked to consult with teams conducting human capital audits at the two agencies, comment on report drafts, and/or to summarize information about these agencies in her own reports. In addition to interacting with other GAO auditors in their work on the agencies, the researcher had personal interactions with agency officials at both agencies during her tenure as a GAO analyst. During the summer of 2005, the researcher sought

and was offered a paid internship with one of the agencies' Human Capital offices. The offer was not accepted so that the researcher could instead intern with the Merit Systems Protection Board, the agency responsible for designing and administering the survey data used in the quantitative analysis. Finally, the researcher has co-authored papers with another academic who has provided consulting services to both agencies included in the analysis. No information included in the case studies was provided by this other academic.

### *Research Question 3*

For the third research question, the Leventhal Index becomes the key independent variable of interest. The dependent variables for the first three parts of the third research question are levels of satisfaction, turnover intentions, and the degree to which individuals are likely to engage in organization-directed organizational citizenship behavior. Survey questions regarding personal and work-related demographic information are also included as independent variables, as well as the agency controls. Design weights are included in the analysis. As noted previously, hypotheses indicating a specific direction for the relationships between procedural justice determinants and various demographics will be evaluated using one-tailed tests.

The second part of Research Question 3 requires the interaction of the dummy variable for management status with the Leventhal Index ( $X_{LI} * X_m$ ). Probing the third part of Research Question 3 will require using data only for only non-supervisors. In this instance, union status will be interacted with the Leventhal Index ( $X_{LI} * X_u$ ). This analysis will include responses only from those who self-identify as non-supervisors because only they are allowed to unionize in the federal government. The variables indicating management and bargaining unit status were previously described in Table 3.10.

Each of the three dependent variables for the first, second, and third part of Research Question 3 are questions from the survey instrument. Response options are ordinal. To account for this, the analysis will use ordered logit, which accounts for the varying distances between each point. The results of the ordered logit will be interpreted using standardized coefficients and marginal effects. Standardized coefficients are particularly useful because they allow the researcher to determine which independent variable has the largest association with the dependent variable when the independent variables employ different units of measurement (Long, 1997).

The fourth part of Research Question 3 will use the same independent variables as the first three parts: the Leventhal Index and personal and work-related demographics, plus two external variables. The use of ADR in 2006 is included for each agency. It is assumed that the use of ADR acts as a selection mechanism for the complaint filing process. Those who utilize ADR and have their disputes resolved will not need to file a formal complaint. Explicit time frames for the filing of complaints make the use of 2006 ADR data more appropriate than 2005 data.

As noted above, the dependent variable, complaints per 1000 employees in 2006, is provided at the agency level in reports required by the No FEAR Act. This requires aggregating the individual level data up to the agency level. As a result, each record in the data set for this analysis represents one agency and agency control variables are no longer required. To accomplish the aggregation, the average Leventhal Index score was calculated for each agency. Demographic variables were converted into averages for pay and tenure, and proportions of the agency that are women, minorities, college educated, etc. Because agency controls are not needed in this model due to the aggregation, a second variable external to the survey is included to

account for the presence of alternative personnel systems in agencies. For the purposes of this research, an agency is designated as having an alternative personnel system if they have the authority to redesign pay and classification systems.

Importantly, comparing 2006 complaint data against perceptions reported in 2005 provides added explanatory power to this model. The dependent variable, complaints per 1,000 employees, is neither a continuous variable nor a categorical variable. By transforming the complaints total relative to agency population, it is also no longer a traditional count variable. An OLS model will be used to assess the relationship between the filing of complaints and procedural justice perceptions.

#### Data Limitations

Given the available data and the analytical models that will be used, it is important to acknowledge and explore the shortcomings of the research presented here. Difficulties posed by survey non-response are considered first, including the manner in which non-response is addressed in this research. The general inability to specify causality and broader challenges to validity and reliability are then considered.

#### *Response Rate*

Response rates for surveys are composed of two components. Unit non-response focuses on the probability of an individual responding to the survey. Causes of unit non-response include inability to contact the individual, the inability of the individual to respond to the survey (due to ill health for example), or a simple refusal to participate (Dorofeev and Grant, 2006). Second, item non-response considers the degree to which respondents choose to not answer particular questions within the survey. The reasons for item non-response are more difficult to clearly

understand at the individual level, but range from unintentional overlooking of a question, deliberate refusal to provide particular information, inability to answer the question, lack of understanding of the question, or poor questionnaire design more generally (Dorofeev and Grant, 2006; Groves et al., 2004). A concern arising from both unit and item non-response is the degree to which the non-response is random.

Non-response is important to understand because it can result in biased estimates for both descriptive and analytic statistics. Bias occurs when the statistic of interest is different for the non-respondents as opposed to the entire sample (Groves et al., 2004). Another potential consequence of non-response is underestimated variance, leading to confidence intervals that are too narrow and overstatement of statistical significance (Dillman, Eltinge, Groves, and Little, 2002). Overall, errors introduced by non-response are the largest contributor to survey error (Mason, Lesser, and Traugott, 2002).

### *Unit Non-Response*

MSPB achieved a 45% response rate across the entire sample. Specifically, of the 82,044 individuals sampled, 36,926 individuals responded across the federal government.<sup>12</sup> This response rate is consistent with previous surveys of this population. For example, the 2000 Merit Principles Survey reported a response rate of 43% and the 2004 OPM Federal Human Capital Survey had a response rate of 54%. Response rates at the strata level varied from 83% of managers in the Commerce-Other unit to 11% of line employees in the Executive Office of the U.S. Attorney in the Department of Justice.

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<sup>12</sup> The response rate and individuals sampled is different in this report compared to what MSPB reported in 2007 (U.S. Merit Systems Protection Board, 2007). The number of individuals sampled was calculated by the author using data provided by MSPB on the sample size of each strata. The response rate was then calculated by the author by dividing the number of respondents by the number of those sampled. MSPB reported “a response rate of approximately 50% ” (U.S. Merit Systems Protect Board, 2007, p. 2).

When considering response rates, we must first consider if the probability that unit non-response is random or dependent on some other factor which is likely unobservable. MSPB did not report the proportion of individuals who were selected for the sample that they were not able to contact. For individuals they actually contacted, refusal to participate may be due to management status within the organization, levels of satisfaction, or other items of interest within the survey. Alternatively, unit non-response could occur completely at random, in a manner unrelated to any subject within the survey. MSPB did not conduct follow-up analysis with non-respondents to assess if they differed in any systematic way from respondents. However, an MSPB official reported that OPM conducted such an analysis for the 2004 Federal Human Capital Survey and found no systematic differences between respondents and non-respondents. Given the two surveys focus on the same population, cover similar topics, and were conducted within a year of each other, it is an informed assumption that unit non-responses occur at random within the MSPB survey.

#### *Item Non-Response*

One-third of the respondents did not answer one or more of the survey items used in the analysis. Given the size of item non-response, it is important to analyze if item non-response is either systematic or random. Stated in empirical terms, is the probability of a respondent answering a particular question dependent on certain perceptions or attributes or is it random? When considering the degree of randomness of missing items, researchers consider three different levels of missing-ness. Items are missing completely at random if “the probability of missing data on X is unrelated to the value of X or to the values of any other variables in the data set” (Allison, 2001, p. 3). Alternatively, items are missing at random when the probability of



responding to question X depends on the value of X, but not on the dependent variable (Lohr, 1999). This is frequently called ignorable non-response. Third, non-ignorable non-response is present when the probability of answering a question depends on both the value of X and the dependent variable of interest (Lohr, 1999).

To assess the presence of patterns in the missing data, a dummy variable was created. A value of 1 indicates that data are missing for the variable of interest. This allows the researcher to conduct a logistic regression to understand if the probability of an individual skipping a question is systematically related to another variable of interest.

*Patterns of missing variables: Dependent variables.* The dependent variable measuring job satisfaction is an additive index measure comprised of three items from the survey. A respondent does not have a job satisfaction score if s/he skipped one or more of the three individual survey items. Respondents without a job satisfaction score comprised 11.1% of the sample. An examination of the skip patterns reveals that individuals are most likely to be missing both Q35n and Q35o (6.2% of the sample), or all three items (3.4% of the sample). Less than 200 respondents answered Q35n but then skipped Q35o and vice versa. The logistic regression indicates women are more likely to mask their level of satisfaction, as are minorities.

The dependent variable measuring the propensity to engage in organizational citizenship behavior is an additive index measure composed of two items from the survey. A respondent does not have a citizenship score if s/he skipped one or both of the individual survey items. Respondents missing citizenship propensity scores comprise 4.1% of the sample. Most individuals missing citizenship scores are missing answers for both survey items, Q1k and Q1j (3% of the sample). The logistic regression indicates that minorities and women are more likely to not report their propensity to engage in citizenship behavior. Interestingly, respondents in the

following agencies are more likely to not identify their intentions to engage in citizenship behavior: Food Safety and Inspection Service, the Forest Service, Federal Emergency Management Administration, Homeland Security-Other, the Bureau of Land Management, and Treasury-Other.

Finally, the dependent variable measuring turnover intentions is composed of one question from the survey. Nearly 13% of the sample is missing a turnover intention score. The logistic regression indicates that the probability of skipping the turnover intention question decreases as the Leventhal Index increases. Additionally, not answering the turnover intention question increases with levels of satisfaction and whether the respondent is a manager.

*Patterns of missing variables: Leventhal Index.* The Leventhal Index is composed of a total of 18 items from the survey, three for each of the six Leventhal criteria. A respondent does not have a Leventhal Index score if s/he skipped any one of the 18 survey questions. When examining the missing patterns, individuals missing scores for all six of the Leventhal criteria is the largest group (5.5%), while those missing only the bias suppression score are the next largest group (5.3%). Across the variables used in the models to answer the research questions, the most frequently missing single item is the Leventhal Index. The logistic regression indicates that an increase in levels of satisfaction and a willingness to engage in citizenship behavior is associated with a decrease in the likelihood of missing a Leventhal Index score. Likewise, women and minorities are more likely to be missing a Leventhal Index score, as are individuals from the following agencies: the Indian Health Service, Customs and Border Protection, Homeland Security-Other, Justice-Other, and the Social Security Administration.

*Patterns of missing variables: Demographic data.* In general, respondents are either answering all of the demographic questions or none of them. Specifically, 10% of the sample is

missing data for all of the demographic variables. The logistic regressions indicate that turnover intentions are positively associated with missing responses on age, years working for the agency, and location in a field office. Additionally an increase in the Leventhal Index score is associated with a decrease in the probability of not reporting one's age.

*Patterns of missing variables: Summary.* Reviewing the missing data patterns, there are a number of trends worth highlighting. First, gender and minority status influence the degree to which data are missing for levels of job satisfaction, the propensity to engage in citizenship behavior, and the Leventhal Index. Individuals are consistently identifying or not identifying their demographic information. The finding of most concern centers on the missing data within the Leventhal Index. Specifically, the absence of a Leventhal Index score is associated with two key dependent variables: satisfaction and propensity to engage in citizenship behavior. Similarly, missing of the variables age, years working with the agency, and working in a field office are associated with dependent variables. As a result, we can not conclude that data for these four variables is either missing completely at random or missing at random.<sup>13</sup> In fact, these relationships exhibit non-ignorable non-response patterns. The following section describes methods of handling the missing data, their strengths and weaknesses, and which method is employed for the analysis.

#### *Approaches to Address Item Non-Response*

Literature on survey methods suggests multiple options for handling item non-response in survey data. The most commonly used method is list-wise or case-wise deletion, where the

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<sup>13</sup> As defined above, items are missing completely at random if “the probability of missing data on X is unrelated to the value of X or to the values of any other variables in the data set” (Allison, 2001, p. 3). Alternatively, items are missing at random when the probability of responding to question X depends on the value of X, but not on the dependent variable (Lohr, 1999).

researcher drops cases from analysis that do not have data on any of the variables of interest.

Inherently, this assumes that individuals who skipped questions are similar to those who answered all questions. Statistically, the dropping of cases uses less information to derive coefficients and standard errors, and thus results in the inflation of standard errors.

Instead of deleting cases with missing data, other methods provide various tools for imputing the missing data. The bluntest of these tools, marginal mean imputation, simply substitutes the mean response for the missing data, results in highly biased coefficients; scholars are advised to avoid using this when possible (Allison, 2001). Only slightly better is conditional mean imputation which uses a regression equation to generate predicted values which are substituted for the missing data. While not viewed as negatively as marginal mean imputation, conditional mean imputation generally produces underestimated standard errors and variance (Groves et al., 2004).

Maximum likelihood imputation is more sophisticated than conditional mean imputation on two counts. Like conditional mean imputation, it uses linear regressions to develop predicted values. However, it introduces a random component to the data generating process and repeats the data generating process multiple times to arrive at statistics that converge. The method requires that the user specify the mean and covariance of the data—which would be challenging to do when data are missing, the very problem it is designed to solve. As a result it is sensitive to misspecification. On the other hand, it uses all the available data, not just complete cases, in the linear regressions and results in less biased standard errors and lower  $p$ -values (Allison, 2001).

Multiple imputation uses a still more complex Bayesian method to fill in missing data. It is more appropriate for non-linear models than maximum likelihood imputation. The method adds a second random component to the data generation process and produces multiple data sets

in which missing values are imputed according to models specified by the researcher. Models used to produce the filled-in data sets are intended to describe the missing data mechanism. However, these mechanisms are not often known to researchers, and the produced data sets are very sensitive to model misspecification (Marker, Judkins, and Winglee, 2002). Additionally problematic are variables with non-normal distributions and categorical variables. A third problem is that multiple imputation is efficient only when data are missing at random, which is not the case for these data, and is generally not effective when interaction effects are considered (Allison, 2001).

For the purposes of the analysis here, list-wise deletion will be used. Clearly, this is not as ideal as having complete records for all respondents. However, “list-wise deletion is more robust than sophisticated methods to violations of the [missing at random] assumption” (Allison, 2001, p. 7). Using this method will inflate the standard errors and introduce a certain amount of bias. It is expected that the bias will inflate the coefficients—that the coefficients will overestimate the size of the relationships explored in this study. Practically, this assumes that respondents skip individual questions because they exhibit lower perceptions of procedural justice indicators, lower levels of satisfaction, less interest in engaging in citizenship behavior, and higher turnover intentions. Such an assumption is consistent with the finding above that items are missing in a pattern that is non-ignorable. As scholars, we are then compelled to consider the lower bounds of the confidence intervals in the analysis. For the purposes of the analysis conducted here, 24,749 responses, or 67% are usable.

### *Causality and Generalizability*

Causality can not be shown definitively in the models designed to probe Research Question 2 or the first three parts of Research Question 3. Because the data are derived from the

same source and administered at the same point in time, the coefficients are indicators of association. By controlling for demographic characteristics of the respondents and organization, the relationship between indicators of procedural justice perceptions and other attitudes becomes more clear than a simple correlation would provide. Models that would enable the present study to derive causality would require, at a minimum, a panel data set and the use of lagged dependent variables. Unfortunately such a construction is not possible given the available data and structure of the survey instrument at this time. This limitation of the data is not applicable to the complaints model, where perceptions in 2005 are compared to complaints filed in 2006. Because the complaints data covers a time period after the perceptions are reported, we can more confidently consider the results from this particular model as causal.

As noted above, the quasi-experimental nature of the analysis limits our ability to explicitly assert causality, posing a threat to internal validity. This is due to the non-random selection of “treatment” and “control” groups, the lack of a pre-test, and the lack of a researcher-controlled treatment applied to the groups. In particular, although sample selection was random, we can not assume that any of the following were random processes: (a) the process for selecting or choosing to become a manager, (b) the decision to choose to pay union dues or to unionize more generally, or (c) the decision to become an employee of a particular agency or a federal employee more generally. The discussion above regarding non-response adds to the difficulties posed by self-selection bias. However, a number of steps taken by the researcher and MSPB help to minimize the effect of this potential source of bias. The large size of the sample and the application of design weights ensures that, when looking governmentwide, the sample is large enough to be able to say something with a high degree of certainty. Additionally, controlling for a

respondent's employing agency and other demographic traits, allows us to partial out some of the effects of self-selection.

External validity across the models is on more solid footing. Using data from multiple agencies in a similar time period improves the generalizability of the results. Admittedly, one threat to external validity is present. The 2005 MSPB survey was the third survey in four years of the federal employee population to ask questions about perceptions of satisfaction and fairness.<sup>14</sup> It is possible that respondents have generated automatic responses to these sorts of questions or that they suffer from survey fatigue. However, responses to the frequent survey efforts could be positive or negative. On one hand, the increased attention may lead to a Hawthorne effect, whereby increased attention on the part of management to perceptions of satisfaction and fairness could lead employees to feel more positive about the work environment. On the other hand, if employees perceive that management ignores the feedback, the increased survey efforts may cause higher demoralization. Given the reported levels of governmentwide satisfaction rates from the three surveys, this later scenario does not seem to be the case when looking across government, but it may be a concern at individual agencies.

## Conclusions

As informed by the literature, the questions this research seeks to answer are the following: what are the perceptions of procedural justice determinants among federal employees, what influences those perceptions, and how do those perceptions influence other attitudes and behaviors. Information from the 2005 Merit Principles Survey, reports required under the No Fear Act and the ADR Act, and case studies at two agencies will be used to answer these questions. The primary variable of interest is the Leventhal Index, which is an additive index of

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<sup>14</sup> The Office of Personnel Management conducted the Federal Human Capital Survey in 2002 and 2004.

survey questions that are consistent with the Leventhal criteria. Descriptive statistics will be used to answer the first research question, while ordered logit, OLS, and case studies will be used to answer the second research question. Hypotheses for the third question will be tested with a combination of ordered logit and OLS models. Threats to validity and reliability have been managed as much as possible given the available data. The dissertation will now turn to exploring the first research question.



## CHAPTER 4

### DETERMINANTS OF PROCEDURAL JUSTICE PERCEPTIONS IN THE FEDERAL GOVERNMENT

Based on the 2005 Merit Principles Survey, more federal employees exhibit higher Leventhal Index scores than exhibit low scores. This skewed distribution is good news for the federal government. Employees are more likely than not to believe that the determinants of procedural fairness in decisionmaking are in place. When examining the data more closely, however, a number of interesting patterns emerge. First, managers exhibit higher perceptions than employees on both the Leventhal Index overall, and among the individual Leventhal criteria. Second, line employees who choose to pay union dues consistently exhibit lower Leventhal Index scores than non-dues-paying employees. When analyzing the data at the agency level, comparing managers and employees, and comparing dues-paying employees to non-dues-paying employees, the National Aeronautics and Space Administration and the Office of the Comptroller of the Currency (OCC) civil servants consistently exhibit high perceptions, while civil servants in multiple Homeland Security agencies and the Bureau of Prisons are consistently skeptical that decisions are made in a just manner.

#### Governmentwide Perceptions

Across the federal government, the weighted mean score on the Leventhal Index is 45.20 from a possible range of 0 to 72, with 0 indicating individual perceive an absence of the criteria necessary for perceptions of procedural justice. The distribution of the Leventhal Index and a

median greater than the mean indicates that federal employees have more positive perceptions than negative (see Figure 4.1 and Table 4.1). This positive skew is a good sign that federal government employees generally view procedures and their implementation as fair. Just over 11% of respondents report scores higher than 62, but 17 individuals reported a score of 0, and approximately 1% reported scores less than 10. The agency with the highest average Leventhal Index score was the Army Corps of Engineers (49.793), while the second highest average Leventhal Index score is present among National Aeronautics and Space Administration employees (49.273) (see Table 4.2). The lowest average is present among employees in the Transportation Security Administration (36.640), and the second lowest score is exhibited in the Homeland Security Bureau of Customs and Border Protection (39.819). The agency with the Leventhal Index score closest to the governmentwide mean is the Department of Labor (45.295).

Some differences in average Leventhal Index scores exist between various demographic groups in the federal government. First, there is a gap between perceptions of procedural justice determinants of minority employees (43.960) and non-minority employees (45.620) ( $t$  value = 3.91). However, women and men do not exhibit different scores on the Leventhal Index (45.226 and 45.155 respectively,  $t$  value = -0.19). Individuals working in field offices (45.032) exhibit slightly lower Leventhal Index scores than their counter-parts in headquarters (45.910) ( $t$  value = -2.14). An increase in salary is associated with higher perceptions of procedural justice determinants ( $r = 0.110$ ,  $p = 0.001$ ). As tenure with the agency increases, so do determinants of procedural justice perceptions ( $r = 0.046$ ,  $p = 0.001$ ). Finally, those with higher levels of education exhibit higher Leventhal Index scores ( $r = 0.045$ ,  $p = 0.001$ ).

Table 4.1  
Governmentwide Perceptions of Determinants of Procedural Justice

Variable	Obsv.	Median	Weighted Mean	Std. Er.	Confidence Interval	
Leventhal Index	24357	49	45.195	0.186	44.830	45.560
Bias Suppression	24357	12	10.952	0.041	10.872	11.032
Correctability	24357	10	9.762	0.033	9.698	9.827
Voice	24357	12	11.158	0.039	11.080	11.235
Accuracy	24357	11	9.871	0.041	9.791	9.952
Ethicality	24357	12	11.463	0.035	11.394	11.533
Consistency	24357	10	9.989	0.038	9.915	10.063

Table 4.2  
Average Leventhal Index Score, Highest to Lowest, by Agency

Agency	Leventhal Index
Corps of Engineers	49.793
Ntnl. Aeronautics & Space Admin.	49.273
Ofc. of the Comptroller of the Currency	48.275
Commerce Other	47.897
Exec. Ofc. of the U.S. Attorney	47.629
State	47.595
Secret Service	47.525
Coast Guard	47.472
Ntnl. Oceanic & Atmospheric Admin.	47.404
Natural Resources Conservation Srv.	47.207

Bureau of Alcohol, Tobacco, Firearms & Explosives	46.824
Transportation Other	46.632
Ntnl. Institutes of Health	46.431
Justice Other	46.421
Drug Enforcement Admin.	46.376
Army Other	46.350
Interior Other	46.216
Ofc. of Personnel Management	46.114
Air Force	46.050
Defense Other	45.971
Veterans Other	45.662
Navy Other	45.572
Internal Revenue Srv.	45.483
Def. Logistics Agy.	45.429
Environmental Protection Agy.	45.330
Food Safety & Inspection Srv.	45.311
Labor	45.295
Ntnl. Inst. of Standards & Technology	45.178
Veterans Benefits Admin.	45.123
Homeland Security Other	45.036
Agriculture Other	44.864
Forest Srv.	44.656
Public Building Srv.	44.652
Patent & Trademark Ofc.	44.649
Def. Finance and Accounting Srv.	44.631

General Services Admin. Other	44.585
Marine Corps.	44.555
Treasury Other	44.453
Social Security Admin.	44.387
Veterans Health Admin.	44.246
Health & Human Srv. Other	44.217
Ctr. for Disease Control & Prevention	44.085
Def. Contract Management Agy.	44.079
Indian Health Srv.	43.953
Housing and Urban Dvlpmt.	43.881
Energy	43.396
Ntnl. Parks Srv.	43.340
Bureau of Land Management	43.096
Fed. Emergency Management Agy.	42.628
Fed. Aviation Admin.	42.132
Education	42.015
Fed. Deposit Insurance Corp.	41.882
Immigration & Customs Enforcement	41.505
Indian Affairs	40.656
Bureau of Prisons	40.625
Customs & Border Protection	39.819
Transportation Security Admin.	36.640

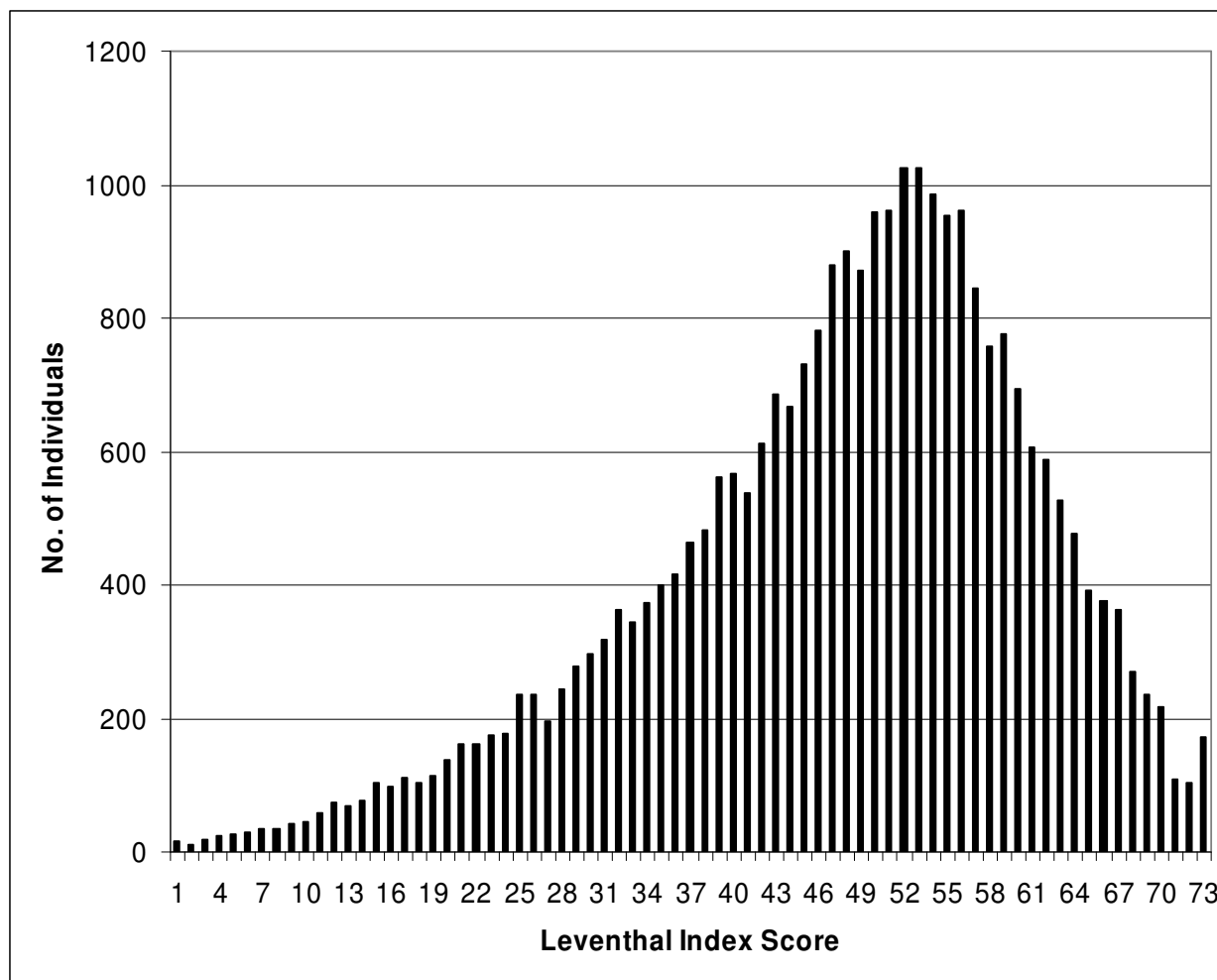


Figure 4.1. Histogram of Leventhal Index

It is important to note areas where improvements can be made. When examining the individual Leventhal criteria, the item with the lowest mean of the six is correctability (9.762 with a possible range of 3 to 15). Employees have less positive perceptions that decisions can be appealed either formally or informally, as compared to the other criteria. Approximately 6% of employees report correctability scores equal to or less than 5, while 7% report scores equal to or greater than 13. The agency with the highest average correctability score is the Office of the Comptroller of the Currency (10.407), while the lowest is the Patent and Trademark Office (8.967) (see Table 4.3). The agency closest to the mean correctability score is the Food Safety

Inspection Service of the U.S. Department of Agriculture (9.757). An examination of the individual questions that compose the correctability index provides more information explaining why this area is an opportunity for improvement in the federal government. Less than half believe their agency's grievance systems would be fair, the appeals system would be fair, or that third-party adjudicatory agencies would respond appropriately to complaints.

Table 4.3  
Highest and Lowest Correctability Index Average by Agency

	Agency	Average
1st	Ofc. of the Comptroller of the Currency	10.407
2nd	Ofc. of Personnel Management	10.176
3rd	Exec. Ofc. of the U.S. Attorney	10.151
55th	Transportation Security Admin.	9.166
56th	Fed. Aviation Admin.	9.120
57th	Patent & Trademark Ofc.	8.967

Although this finding is consistent with previous federal surveys (for example see U.S. Merit Systems Protection Board, 2007 and 1997), it is troublesome. Federal employees, and public employees in general, are provided added procedural protections to ensure that inappropriate decisions can be appealed and/or reversed through administrative hearings, union-negotiated procedures, or court review. The data do not allow us to know if the perceptions are low because these avenues are inadequate, because they are viewed as too rigid and thus not responsive to employee concerns, or because of agency-specific challenges such as erecting barriers to access.

Compared to the other Leventhal criteria, the area with the highest average score is ethicality (11.463, with a possible range from 3 to 15). Within the agencies, employees sense they are being treated in a manner consistent with their own sense of ethics. Approximately 4% of employees report ethicality index scores equal to or less than 5, while 38% report scores equal to or greater than 13. The agency with the highest average ethicality index score is the Corps of Engineers (12.229), while the lowest is the Transportation Security Administration (10.010) (see Table 4.3). The agency closest to the governmentwide mean ethicality index score is the Environmental Protection Agency (11.454). Responses to individual questions that compose the ethicality index reveal why this has the highest average of the various Leventhal criteria. For example, 78% of federal employees agree or strongly agree that they are treated with respect at work; 74% agree or strongly agree that their supervisors act with integrity. Responses on the third item are not as positive as the first two, but are still well above 50% positive. In particular, 60% agree or strongly agree that managers above their immediate supervisors act with integrity.

Table 4.4  
Highest and Lowest Ethicality Index Average by Agency

	Agency	Average
1st	Corps of Engineers	12.229
2nd	Ntnl. Aeronautics & Space Admin.	12.197
3rd	Ofc. of the Comptroller of the Currency	12.119
55th	Customs & Border Protection	10.717
56th	Indian Affairs	10.430
57th	Transportation Security Admin.	10.010



Agencies additionally are performing relatively well in the area of ensuring their employees can voice concerns or provide input to decisionmaking, with a governmentwide average of 11.158 (range from 3 to 15). Approximately 5% of employees report voice index scores equal to or less than 5, while 39% report scores equal to or greater than 13. The agency with the highest average voice index score is the National Aeronautics and Space Administration (11.986) while the lowest is the Transportation Security Administration (9.917). The agency closest to the governmentwide mean voice index score is the Public Building Service (11.136). More than 63% agree or strongly agree that they can openly express concerns at work, trust their supervisor to listen to concerns, and discuss workplace conflicts with their supervisors. The high score at the National Aeronautics and Space Administration is especially positive given the claims after the Challenger disaster that suggested concerns and conflicts were not openly discussed.

Table 4.5  
Highest and Lowest Voice Index Average by Agency

	Agency	Average
1st	Ntnl. Aeronautics & Space Admin.	11.986
2nd	Corps of Engineers	11.973
3rd	Natural Resources Conservation Srv.	11.625
55th	Indian Affairs	10.428
56th	Customs & Border Protection	10.147
57th	Transportation Security Admin.	9.917

Bias suppression assesses the degree to which decisionmakers allow their personal interests or prejudices to influence choices in the workplace. Respondents indicated an average bias suppression index score of 11.19 (possible range from 3 to 15). The agency with the average score closest to the governmentwide mean is the Air Force (10.963), while the highest agency average is held by the Corps of Engineers (11.783), and the lowest is attributable to the Transportation Security Administration (8.939) (see table 4.5). Across federal employees, 8% have a bias suppression score of five points or lower; these employees have little confidence that bias is suppressed during decisionmaking. Alternatively, 39% report bias suppression scores equal to or greater than 13.

Table 4.6  
Highest and Lowest Bias Suppression Index Average by Agency

	Agency	Average
1st	Corps of Engineers	11.783
2nd	Ntnl. Aeronautics & Space Admin.	11.656
3rd	Coast Guard	11.642
55th	Customs & Border Protection	10.087
56th	Bureau of Prisons	10.015
57th	Transportation Security Admin.	8.939

An examination of the components that make up the bias suppression index reveals that 34% perceive they experienced one or more instance of discrimination in the two years prior to the survey. The most frequently reported form of discrimination was the prohibited personnel

practice of giving an unfair advantage to another person for an employment or promotion opportunity. Despite this, 60% agree or strongly agree that their supervisors refrain from favoritism, while less than half agree or strongly agree that managers above their supervisors refrain from favoritism. The low perceptions of bias suppression at the Transportation Security Administration may reflect the nascent state of its alternative personnel system at the time of the survey combined with a large collection of managers with lower than average federal tenure. This combination suggests that managers may not be as aware of federal merit principles regarding prohibited personnel practices as managers in the rest of the federal government.

Consistency considers the degree to which decisionmaking is similar across individuals and across time. The governmentwide average perception of consistency is 9.989 out of a potential range of 3 to 15. The agency with the average consistency score closest to the governmentwide average is the Office of Personnel Management (9.997). The highest performing agency in terms of making decisions in a consistent manner is the Corps of Engineers (10.977), while the lowest performer is the Transportation Security Administration (8.307) (see Table 4.6). This is the third criterion in which the Corps of Engineers reports the highest index average, despite the criticism the agency received after the destruction due to Hurricane Katrina and despite it being in the midst of changing its personnel systems as part of the larger Defense reforms. Across individuals, 7% have consistency scores equal to or less than 5, while 17% indicate high perceptions of consistency with scores equal to or above 13. When reviewing the individual questions that compose the consistency score, it is revealed that more than half think they were treated fairly regarding performance appraisal in the previous two years, while less than half perceive they were treated fairly in terms of awards and pay.

Table 4.7  
Highest and Lowest Consistency Index Average by Agency

	Agency	Average
1st	Corps of Engineers	10.977
2nd	Ntnl. Aeronautics & Space Admin.	10.845
3rd	Commerce Other	10.807
55th	Immigration & Customs Enforcement	8.945
56th	Indian Affairs	8.592
57th	Transportation Security Admin.	8.307

The final Leventhal criterion, accuracy, exhibits a governmentwide average of 9.871 (range from 3 to 15). The agency with a mean score closest to the governmentwide average is Treasury Other (9.884). The Transportation Security Administration again reported the lowest agency average in the area of accuracy (8.301), while employees at the Corps of Engineers reported the highest average accuracy index score (10.830). Interestingly, 10% of respondents have accuracy index scores equal to or less than five, with more than 700 respondents reporting the lowest accuracy perceptions. However, 18% indicate high perceptions of accuracy in decisionmaking, exhibited by scores equal to or greater than 13. Just over half of employees agree or strongly agree that performance ratings reflect performance and that objective measures are used to evaluate performance. Slightly less than half agree that recognition is based on performance. Accuracy is the second Leventhal criterion in which the Executive Office of the U.S. Attorney is ranked among the top agencies. It is important to note that the survey was administered before allegations of politically-driven personnel decisions appeared in the media.

Table 4.8  
Highest and Lowest Accuracy Index Average by Agency

	Agency	Average
1st	Corps of Engineers	10.830
2nd	Exec. Ofc. of the U.S. Attorney	10.557
3rd	Ntnl. Aeronautics & Space Admin.	10.551
55th	Bureau of Prisons	8.567
56th	Customs & Border Protection	8.448
57th	Transportation Security Admin.	8.301

In addition to summarizing the governmentwide statistics, it is instructive to look across the Leventhal criteria to identify patterns of agency placement. Specifically, National Aeronautics and Space Administration employees reported the highest index average responses for voice, and ranked either second or third in the areas of bias suppression, accuracy, ethicality, and consistency. Likewise, the Corps of Engineers exhibited the highest index averages on the areas of bias suppression, accuracy, ethicality, and consistency, and the second highest average for voice. Unexpectedly, the Executive Office of the U.S. Attorney ranked highly in the areas of correctability and accuracy, while the Comptroller of the Currency exhibited high perceptions of ethicality and correctability. At the bottom end of the scale, Transportation Security Administration employees exhibited the lowest agency average in 5 of the 6 criteria. An additional Homeland Security agency, Customs and Border Protection, ranked among low performers in four of six criteria: voice, accuracy, ethicality, and bias suppression. Employees at

Indian Affairs reported low perceptions compared to the rest of the federal government on voice opportunities, ethical treatment, and the consistency of decisionmaking.

There is a small group of federal respondents who report the lowest possible perceptions of procedural justice determinants, with a Leventhal Index score of 0. Who are these 17 individuals and are there any patterns that emerge from their information? Although this group constitutes less than 1% of the entire sample, patterns may indicate problems in particular agencies or among a specific group of employees. Overall, the individuals the Leventhal Index scores equal to 0 are not very different from the larger federal population. First, they come from a range of agencies; no one agency has more than two individuals with a Leventhal Index score of 0. Even at the department level they are randomly distributed across government. For example, they are not concentrated in Homeland Security or Defense agencies. Fourteen are line employees while 3 are supervisors; none identify as managers or executives. Five are minorities, 3 are female, and 11 are non-minority men. Union dues are paid by 6 individuals and 14 work in field offices. This groups is also well-educated, as 12 have bachelors degrees or higher. Average tenure with the federal government is 19 years, ranging from 5 to 35 years, while agency tenure averages 15 years, ranging from 3 to 28 years. Compensation for these low justice perceivers is an average of \$67,000 per year, ranging from \$35,000 to \$94,000. Age of these individuals is also not skewed in any one obvious direction, with two individuals in their 30s, 10 individuals in their 40s, four individuals in their 50s, and one individual in the 60s. This description makes it difficult issue blanket statements such as assuming minorities are unhappy, or the less educated or lower paid are likely to have lower perceptions of justice.

It can also be instructive to examine those at the other end of the Leventhal Index, namely, those respondents that exhibit the highest possible score. Fortunately for the federal

government, this is a larger group of individuals, numbering 142, but still represents less than 1% of the sample. More than half of these individuals self-identify as supervisors, managers, or executives (38, 33, and 7 respectively). Non-minority men are less than half the group, 54 are women, and 40 are minorities. Just 11 choose to pay union dues, while two-thirds work in field offices. Like the other group, 83 out of 142, or 58%, have a bachelors degree or higher, but a sizeable group of 35 have only high school-level education. Average age and pay per year are also the same as the previous group. Finally, employees with high perceptions of procedural justice indicators are scattered across the federal government. No agency has more than 8 individuals with a high Leventhal Index score. Defense components employ 36 of those with high Leventhal Index perceptions, the National Aeronautics and Space Administration employs 7, and 17 work in Veterans Affairs components.

### Comparing Manager and Employee Perceptions

Managers consistently exhibit more positive perceptions of procedural justice determinants as compared to line employees. This is true both for the Leventhal Index and each individual Leventhal criterion (see Table 4.8). The differences in the means are highly significant (see Table 4.9). Figure 4.2 represents the difference between employee and manager scores on the Leventhal Index in a box plot. Specifically, the median for managers is greater than the governmentwide median, while the median for employees is lower than both managers and the governmentwide median. This is due to the larger first quartile, representing lower perceptions of procedural justice indicators among employees as compared to managers. Among the individual Leventhal criterion, most of the medians are also higher for managers than for employees, the exceptions being voice and ethicality for which managers and employees have the same median.

It is reasonable to question whether these difference are meaningful, and not simply due to the large sample size of each group. However, these differences suggest that the hypotheses proposed earlier will bear fruit.

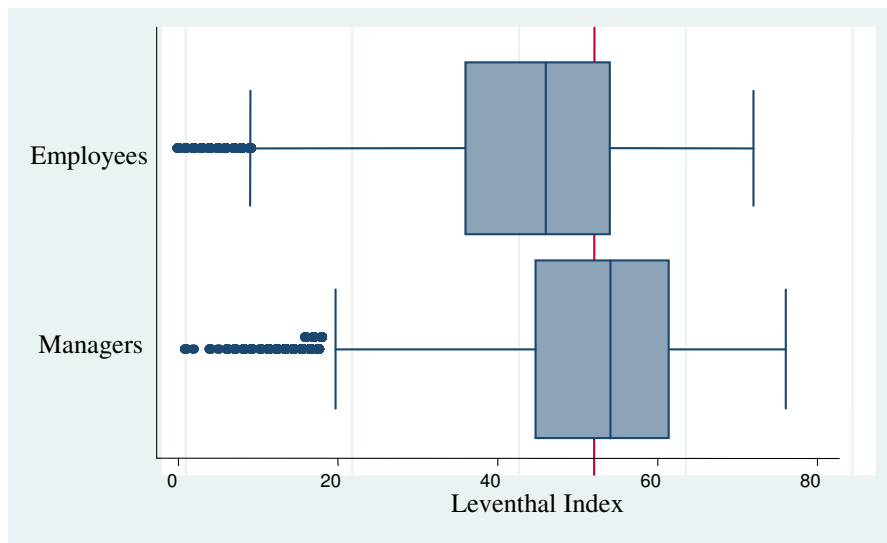
Table 4.9  
Manager and Employee Perceptions of Determinants of Procedural Justice

Employee Perceptions						
Variable	Obsv.	Median	Weighted Mean	Std. Er.	Confidence Interval	
Leventhal Index	12800	46	44.364	0.220	43.932	44.795
Bias Suppression	12800	11	10.810	0.048	10.715	10.904
Correctability	12800	9	9.693	0.039	9.617	9.769
Voice	12800	12	10.999	0.046	10.908	11.090
Consistency	12800	10	9.851	0.045	9.764	9.939
Accuracy	12800	10	9.676	0.049	9.581	9.772
Ethicality	12800	12	11.335	0.042	11.253	11.417
Manager Perceptions						
Variable	Obsv.	Median	Weighted Mean	Std. Er.	Confidence Interval	
Leventhal Index	11386	51	49.365	0.189	48.994	49.736
Bias Suppression	11386	12	11.666	0.044	11.579	11.752
Correctability	11386	10	10.111	0.039	10.034	10.188
Voice	11386	12	11.951	0.041	11.870	12.031
Consistency	11386	11	10.680	0.042	10.598	10.763
Accuracy	11386	11	10.849	0.040	10.770	10.928
Ethicality	11386	12	12.108	0.037	12.034	12.181



Table 4.10  
Manager and Employee Difference of Means

Variable	Weighted Employee Mean	Weighted Manager Mean	$t$ [ $\mu \neq \mu$ ]
Leventhal Index	44.364	49.365	-17.23
Bias Suppression	10.810	11.666	-13.08
Correctability	9.693	10.111	-7.59
Voice	10.999	11.951	-15.33
Accuracy	9.851	10.680	-18.55
Ethicality	9.676	10.849	-13.76
Consistency	11.335	12.108	-13.54



Note: Vertical line through figure represents the governmentwide median.  
*Figure 4.2.* Box plot of manager and employee perceptions of procedural justice determinants

An analysis of the Leventhal Index and the individual Leventhal criteria reveal what is driving the differences in the determinants of procedural justice perception between employees and managers. Two percent of employees have Leventhal Index scores of 10 or less (possible range 0 to 72), while less than 1% of managers exhibit similar scores. At the other end of the scale, 13% of managers report scores ranging from 62 to 72, while just 7% of employees have similar positive perceptions.

The biggest area of difference between managers and employees is in regard to perceptions of accuracy in decisionmaking. Managers are more likely to believe they are treated in an ethical manner during decisionmaking than employees. In particular, 25% of managers exhibit the accuracy scores of 13 or higher (of a range from 3 to 15), while 15% of employees provide similar responses. At the bottom end of the scale, twice as many employees as managers exhibit ethicality index scores of 5 or lower. Perceptions for the two groups are the most different when examining the levels of agreement that awards reflect performance, with 44% of employees agreeing or strongly agreeing this to be the case, versus 70% of managers who think similarly. However, managers and employees exhibit virtually the same perceptions when asked if they agree or strongly agree that performance measures are objective (56% and 52%, respectively).

Managers and employees exhibit the smallest differences in the area of correctability. For example, 4% of managers exhibit correctability scores of 5 or lower (with a possible range from 3 to 15), while 6% of employees express similar concerns. Alternatively, index scores of 13 or higher are reported by 6% of employees and 8% of managers. When asked if they trust third parties to fairly resolve disputes, 15% of both managers and employees are skeptical, while 43% of employees and 50% of managers agree or strongly agree. However, differences emerge when considering perception of the fairness of grievance systems. Managers agree or strongly agree

that grievance systems will be fair at a rate of 49% , while 37% of employees hold similar perceptions.

Significant gaps between manager and employee perceptions also exist in the voice and ethicality indices. As a group, managers exhibit higher perceptions of opportunities to exercise voice than do employees. When assessing the distribution of voice scores, 47% of managers believe they have high opportunities for voice, whereas 33% of employees have similar perceptions. Differences in voice perceptions can be attributed to the comfort levels associated with discussing workplace conflicts with supervisors; 60% of employees agree or strongly agree that they feel comfortable doing so, compared to 76% of managers. Additionally, a 11-point gap separates employee and manager perceptions that they agree or strongly agree that they can openly express their concerns at work (67% and 78% respectively). In the area of ethicality, 48% of managers exhibit the highest levels of ethicality perceptions, while 35% of employees provide similar responses. Perceptions for the two groups are the most different when examining the levels of agreement that managers above their immediate supervisors act with integrity, with 58% of employees agreeing or strongly agreeing this to be the case, versus 69% of managers who think similarly. Additionally, 85% of managers agree or strongly agree that they are treated with respect at work, with 77% of employees claiming likewise.

Differences in perceptions that decisionmaking is consistent and absent of bias are not as great. Particularly, 24% of managers and 16% of employees exhibit the highest levels of consistency perceptions. A 12-point gap exists between manager and employee perceptions that they were treated fairly in the previous two years regarding awards, but that gap closes slightly to 10-points when asked about pay, with manager perceptions higher in both cases. The same pattern is present in the area of bias suppression. More managers than employees feel strongly

that bias is minimized in decisionmaking (50% and 37% respectively). One reason for the difference is that 72% of managers report they did not perceive any instances of discriminatory action taken against them, whereas 64% of employees answered similarly. Another area of difference in the bias suppression score results from perceptions of favoritism, where 41% of employees agree that managers above their supervisors refrain from favoritism, while 55% of managers exhibit similar perceptions.

Table 4.11  
Highest and Lowest Leventhal Index Average by Management Status

<i>Employees</i>		
	<u>Agency</u>	<u>Average</u>
1st	Ntnl. Aeronautics & Space Admin.	48.780
2nd	Ofc. of the Comptroller of the Currency	47.576
3rd	State	47.377
55th	Indian Affairs	39.429
56th	Customs & Border Protection	38.811
57th	Transportation Security Admin.	35.976
<i>Managers</i>		
	<u>Agency</u>	<u>Average</u>
1st	Ofc. of the Comptroller of the Currency	55.867
2nd	Ntnl. Aeronautics & Space Admin.	54.369
3rd	Secret Service	52.982
55th	Customs & Border Protection	44.123
56th	Immigration & Customs Enforcement	43.806
57th	Transportation Security Admin.	39.104

Interesting patterns are revealed when the employee and manager perceptions are analyzed at the agency level. First, the Leventhal Index score is high in similar agencies for both managers and employees, and the same is true for low averages (see Table 4.11). The largest gap

between the high average and the low average is present for managers, exhibiting a 16.673 point difference in the Leventhal Index average. When examining by management status, three of the four agencies with the lowest Leventhal Index average are part of Homeland Security, but another Homeland Security component, the Secret Service, exhibits high manager perceptions.

In some agencies there is a large difference between the average Leventhal Index score for managers and that for employees. For example, the Customs and Border Protection manager average is 10 points higher than employees (48.953 and 38.811 respectively), and the same gap is present between Homeland Security Other managers and employees (52.982 and 42.723 respectively). The greatest manager-employee gap is in the Transportation Security Administration, where 13 points separate the two groups (employees = 35.976 and managers = 49.429). Interestingly, in a fourth Homeland Security component, the U.S. Coast Guard, the average *employee* Leventhal Index score is greater than the *manager* average (46.500 and 39.104 respectively). The smallest differences between employee and manager perceptions are found in the State Department (47.377 and 48.071 respectively), the Drug Enforcement Administration (45.556 and 46.651 respectively), and the Natural Resources Conservation Service (46.968 and 49.259 respectively).

Among employees only, the National Aeronautics and Space Administration exhibits the highest index average in the areas of bias suppression (11.610), voice (11.902), ethicality (12.136), and consistency (10.753) and is third highest for accuracy of decisionmaking (10.427). Office of the Comptroller of the Currency employees report the highest perceptions of correctability (10.371), and the second highest perceptions of ethicality (12.023). Another agency with high employee perceptions is the Natural Resource Conservation Service, in which perceptions of bias suppression (11.597) and voice (11.577) were ranked second relative to other

federal organizations. Unfortunately, employees at the Transportation Security Administration exhibit the lowest perception for 5 of 6 criteria. Similarly, Customs and Border Protection employees reported the second lowest average perceptions on the bias suppression (9.854), voice (9.963), and accuracy indices (8.165). Outside of Homeland Security, the Bureau of Indian Affairs exhibited the second lowest averages in the areas of ethicality (10.245) and consistency (8.449) and the third lowest average for voice (10.153). Interestingly, although the Corps of Engineers exhibit the highest Leventhal Index score when looking at all employees, its line employees did not exhibit averages in the top three for any of the individual criteria.

Among managers only, the highest index scores for 5 of 6 criteria are exhibited by managers in the Office of the Comptroller of the Currency: bias suppression (12.723), voice (13.084), accuracy (12.253), ethicality (13.157), and consistency (11.855). Once again, managers in National Aeronautics and Space Administration perform well, with a top average for correctability (10.921), and the second highest average for voice (12.861), accuracy (11.825), and consistency (11.802). Secret Service managers report the highest scores of any Homeland Security agency, ranking second for ethicality (12.933), and third for bias suppression (12.201), voice (12.496), and consistency (11.607). However, managers at the Transportation Security Administration constitute the lowest averages again in 5 of the 6 criteria. Additional low performing Homeland Security agencies include Customs and Border Protection and Immigration and Customs Enforcement. In particular, Immigration and Customs Enforcement managers reported the lowest average for correctability (9.259), the second lowest average for bias suppression (10.563) and ethicality (11.212), and the third lowest average for consistency (9.324).

In addition to the consistently high and low scores, two agencies make minor, but interesting appearances in the top and bottom ranked agencies. First, managers *and* employees in the Office of Personnel Management have averages among the top three agencies in the area of correctability (employee average of 10.113 and manager average of 10.877). The Office of Personnel Management appears in neither the top nor the bottom three for any other criterion. Second, the Patent and Trademark Office is the only agency to exhibit both high and low employee index averages. Specifically, employees at the Patent and Trademark Office exhibit high perceptions of accuracy in decisionmaking (10.489), but low perceptions of correctability (8.857).

#### Perceptions of Unionized and Non-Unionized Employees

For the purposes of this analysis, line employees who indicate they pay union dues will be compared to those who do not report paying union dues. Approximately 20% of federal line employees choose to pay union dues. Of those who choose to pay union dues, half possess a Bachelors degree or higher levels of education, 34% identify as minorities and 48% are women. They average 18 years of experience with the federal government and a tenure of 15 years with their current agency. Dues-paying employees are similar in age to other federal staff, with an average age of 48. Likewise, 89% work in field offices. However, the average pay of dues-paying employees is slightly lower than the governmentwide average, at \$63,000 per year.

Dues-paying union members constitute 20% or more of employees at 20 of the 57 agencies considered in this research. Eight agencies have 20% to 29% of employees paying union dues, 3 agencies have 30% to 39% of employees paying union dues, while another 6 agencies have 40% to 49% of their line employees paying dues. Additionally, 50% or more of employees

in the Food Safety Inspection Service, Customs and Border Protection, and the Bureau of Prisons pay union dues. Another 19 agencies have 10% to 19% of employees who pay union dues.

There are significant differences in Leventhal Index scores between dues-paying employees and non-dues-paying employees (see Tables 4.12 and 4.13). For example, dues-paying employees have an average Leventhal Index score of 41.267 while other line employees have an average Leventhal Index of 45.127. The same pattern is continued in the median score of the two groups (see Figure 4.3). The box plot represents the difference between dues-paying employees and non-dues-paying employee scores on the Leventhal Index. Specifically, the median for non-dues paying employees is greater than the governmentwide median, while the median for dues paying employees is lower than both managers and the governmentwide median. This is due to the larger first quartile, representing lower perceptions of procedural justice determinants among dues paying employees as compared to those not paying dues. Individuals scoring a 10 or less on the Leventhal Index (possible range 0 to 72) make up 3% of dues-paying employees, and just 2% of other employees. At the other end of the scale, 5% of dues-paying employees score 62 or higher, while more than 8% of other employees have similar values.

An examination of the individual Leventhal criteria provides information explaining the differences between the two groups. The biggest area of difference is in perceptions of bias suppression, with dues-paying employees exhibiting perceptions averaging to 10.026 and other employees averaging 11.003. Likewise, 29% of dues-paying employees score between 13 and 15 on the bias suppression score, while 39% of other employees exhibit similar perceptions (range 3 to 15). Differences in perceptions are due in large part to gaps in perceptions that supervisors and managers refrain from favoritism—a 10-point gap is present in each instance. Additionally, 15%



of dues-paying employees perceived they experienced 4 or more acts of discrimination in the years prior to the survey, while 9% of non-dues-paying employees felt similarly.

Table 4.12  
Perceptions of Procedural Justice Determinants of Employees Who Do and Do Not Pay Union Dues

<i>Dues-Paying Employees</i>				Std.	Confidence	
Variable	Obsv.	Median	Weighted Mean	Er.	Interval	
Leventhal Index	2386	42.5	41.276	0.515	40.266	42.287
Bias Suppression	2386	11	10.026	0.116	9.799	10.254
Correctability	2386	9	9.497	0.090	9.321	9.674
Voice	2386	11	10.470	0.111	10.253	10.687
Consistency	2386	9	9.944	0.051	9.844	10.043
Accuracy	2386	9	9.136	0.116	8.908	9.364
Ethicality	2386	11	10.669	0.100	10.474	10.865

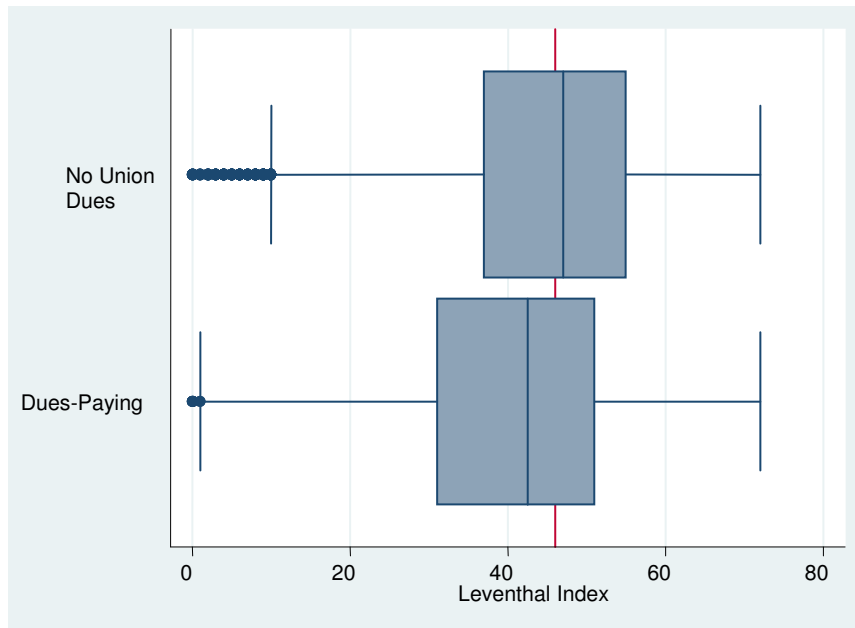
  

<i>Non-Dues-Paying Employees</i>				Std.	Confidence	
Variable	Obsv.	Median	Weighted Mean	Er.	Interval	
Leventhal Index	10414	47	45.127	0.242	44.652	45.601
Bias Suppression	10414	12	11.003	0.053	10.900	11.106
Correctability	10414	9	9.741	0.043	9.657	9.825
Voice	10414	12	11.130	0.051	11.031	11.230
Consistency	10414	10	9.477	0.095	9.291	9.662
Accuracy	10414	10	9.810	0.053	9.705	9.915
Ethicality	10414	12	11.499	0.045	11.410	11.588

Table 4.13  
Difference of Means of Dues-Paying and Non-Dues-Paying Employees

Variable	Dues-Paying	Non-Dues-Paying	$t$ [ $\mu \neq \mu$ ]
Leventhal Index	41.276	45.127	6.76
Bias Suppression	10.026	11.003	7.68

Variable	Dues-Paying	Non-Dues Paying	$t$ [ $\mu \neq \mu$ ]
Correctability	9.497	9.741	2.44
Voice	10.470	11.130	5.42
Accuracy	9.944	9.477	5.26
Ethicality	9.136	9.810	7.57
Consistency	10.669	11.499	4.33



Note: vertical line through figure represents the governmentwide median.

*Figure 4.3* Box plot of employee perceptions of procedural justice determinants by union status

The smallest difference between dues-paying and other employees is in perceptions of the correctability of decisionmaking procedures. An examination of the individual items making up the measure indicates why differences on correctability are small. There is a 2-point difference between the groups for those who agree or strongly agree that (a) they trust third-party agencies

to respond fairly to complaints and (b) that the grievance system would be fair. An equal percentage, although less than a majority, agree or strongly agree that the appeals systems would be fair. This is not entirely surprising considering unions are a key mechanism for airing employee issues with management. Union contracts provide additional procedures for resolving disputes above and beyond the normal rules. Given the limited scope of bargaining in the vast majority of the federal government, grievance and appeal procedures is the one area where unions can have a significant impact. Alternatively, and more pessimistically, it also indicates that the union-negotiated systems are not necessarily an improvement.

In terms of voice perceptions, non-dues-paying employees have higher average scores as compared to dues-paying employees. Twenty-eight percent of dues-paying employees perceive high opportunities for voice, but 35% of other line employees feel similarly. The biggest area of disagreement between the groups centers on the degree to which they trust managers to listen to concerns; 64% of dues-paying employees agree or strongly agree they trust their managers to listen, while 73% of other employees feel similarly. Additionally, 60% of dues-paying employees agree or strongly agree they can openly express concerns at work, while 69% of other employees have the same perceptions.

Perceptions regarding the consistency of decisionmaking are again higher for non-dues-paying employees than for dues-paying employees. Less than half of both groups feel that they have been treated fairly in terms of awards (32% of dues-paying employees and 40% of the others) and in terms of pay (44% of dues-paying employees and 49% of the others). Just over half of both groups think they are treated fairly regarding performance appraisals (52% of dues-paying employees and 58% of the others).

Dues paying employees are more likely to perceive that decisionmaking procedures are accurate than non-dues-paying employees, the only Leventhal criteria for which this is the case. Less than half of both groups of employees think that awards reflect levels of performance. Specifically, 39% of dues-paying employees agree or strongly agree this to be the case, while 46% of other employees feel similarly. Perceptions are similarly low that performance ratings accurately reflect performance. A bare majority of non-dues-paying employees agree or strongly agree this is the case, while 46% of union members feel the same way.

In the final Leventhal criterion, ethicality, union members exhibit lower perceptions as compared to other line employees. At the top end of the scale, 28% of union members have scores ranging from 13 to 15, while 37% of the other employees have similar scores on the ethicality measure. Perceptions that managers above the immediate supervisor act with integrity is a major area of difference between the two groups. Specifically, 61% of non-dues-paying employees agree or strongly agree that managers act with integrity, but less than half of union members feel the same (48%). This represents the biggest gap in all of the individual survey questions between union members and non-dues-paying employees. Further differences exist when asking about the integrity of immediate supervisors. Sixty-five percent of union members agree or strongly agree that their supervisors act with integrity, while 74% of employees in the other group have similar perceptions.

Further analysis was conducted at the agency level for the 27 agencies where 15% or more of employees reported they were union members. This ensures a critical mass of dues-paying and non-dues-paying employees in each agency for comparison. When the sample is restricted in this way, there are big differences between dues-paying and non-dues paying employees at the agency level, similar to the manager and employee analysis. For example, large

gaps between union members and non-dues-paying employees in the Leventhal Index score are present in the Department of Education (33.592 and 43.031 respectively), the Federal Aviation Administration (35.712 and 43.635 respectively), and in the Indian Health Service (38.108 and 45.810 respectively). A total of 12 agencies have averages with a 5-point difference or greater between dues-paying and non-dues-paying employees on the Leventhal Index. Differences of less than 1 point are found in the Veterans Health Administration, and the Food Safety Inspection Service. Like the manager and employee comparison, there is one agency in which dues-paying employees have a slightly higher average Leventhal Index score compared to other line employees: the Environmental Protection Agency (EPA) (45.750 and 44.837 respectively).

Among dues-paying employees only, agencies with the highest Leventhal Index score are the State Department, Environmental Protection Agency, and the Food Safety Inspection Service (see Table 4.13). These three agencies exhibit consistently high perceptions across the individual Leventhal criteria. Interestingly, State is also the only one of these three agencies that also ranked highly in the manager and employee comparison. The Environmental Protection Agency and the Food Safety Inspection Service did not appear in the top ranked agencies in the previous analysis.

There is a significant difference in average Leventhal Index scores among dues-paying employees between the highest and lowest ranked agencies. Dues-paying employees at the State Department, at the top of the agencies, has a Leventhal Index score of 46.163, while the agency with the lowest Leventhal Index average for dues-payers is the Department of Education at 33.592—a difference of more than 12 points. Across the individual Leventhal criteria, the State Department and the Food Safety Inspection Service are consistently high performers. In particular, State employees who pay union dues exhibit high index averages in 5 of the 6 criteria:

bias suppression (11.265), voice (11.184), accuracy (9.980), ethicality (11.816), and consistency (10.143).

Table 4.14  
Highest and Lowest Leventhal Index Average by Union Status

<i>Dues-Paying Employees</i>		
	<u>Agency</u>	<u>Average</u>
1st	State	46.163
2nd	Environmental Protection Agy.	45.750
3rd	Food Safety & Inspection Srv.	45.357
25th	Immigration & Customs Enforcement	35.550
26th	Fed. Emergency Management Agy.	35.150
27th	Education	33.592
<i>Non-Dues-Paying Employees</i>		
	<u>Agency</u>	<u>Average</u>
1st	Ofc. of the Comptroller of the Currency	49.119
2nd	State	48.292
3rd	Internal Revenue Srv.	46.934
25th	Immigration & Customs Enforcement	42.357
26th	Bureau of Prisons	42.284
27th	Customs & Border Protection	40.728

Note: Only agencies with 15% or more of employees paying union dues were included in the analysis.

Dues-paying employees with low Leventhal Index scores work in the Department of Education (33.592), the Federal Emergency Management Administration (35.150), and Immigration and Customs Enforcement (42.357). Like those with high Leventhal Index scores, union members at these agencies consistently exhibit the lowest averages across the Leventhal criteria. Union members in the Department of Education appear to be particularly troubled, ranking in the bottom three agencies in five of the six criteria: bias suppression (8.408),

correctability (8.571), voice (9.408), accuracy (7.265), and ethicality (9.245). Federal Emergency Management Administration union members reported poor perceptions in 4 of the 6 criteria: bias suppression (8.725), voice (9.300), accuracy (7.575), and ethicality (9.350). Both Education and FEMA exhibited similar poor ranking in the manager and employee comparisons.

Non-dues-paying employees in agencies exhibit similar patterns. The State Department is again in the top three agencies for procedural justice indicators of non-dues-paying employees, along with Office of the Comptroller of the Currency. Not surprisingly, employees in these two agencies exhibit consistently high perceptions of the six Leventhal criteria. For example, non-dues-paying employees at the Office of the Comptroller of the Currency exhibit high perceptions in the areas of bias suppression (11.628), correctability (10.412), voice (11.748), accuracy (10.544), and ethicality (12.243). These high perceptions are consistent with the manager and employee comparison in which Office of the Comptroller of the Currency employees were found to have consistently high perceptions of procedural justice indicators.

Low perceptions of procedural justice determinants are exhibited among non-dues-paying employees in the Bureau of Prisons and Customs and Border Protection. Employees in the Bureau of Prisons exhibit low perceptions in the areas of bias suppression(10.337), accuracy (8.937), ethicality (11.032), and consistency (9.021). Non-dues-paying line employees in Customs and Border Protections are likewise frustrated in the areas of voice (10.22), accuracy (8.457), and ethicality (10.753). Again, comparing those agencies with low perceptions in this analysis to the manager and employee comparison, Bureau of Prisons and Customs and Border Protection are low in both sets.

There are three agencies in this comparison that appear among both the high and low performers in the union member analysis. First, employees in the Patent and Trademark Office,

*both* dues-paying and non-dues-paying, exhibit high perceptions of bias suppression and accuracy, but low perceptions of correctability. Second, non-dues-paying employees in the Bureau of Prisons exhibit high perceptions of correctability, but low perceptions in the four criteria noted in the previous paragraph. When examining the difference between the high and low averages for each group, the largest gap occurs for the consistency index scores of dues-paying employees; the gap is almost 4 points between Homeland Security Other (11.571) and Immigration and Customs Enforcement (7.675). In all cases, the gaps are larger between the dues-paying employees than they are for non-dues-paying employees.

### Summary

The analysis presented in this chapter provides initial evidence for a number of stated hypotheses of this research (see Table 4.14). First, the data presented here suggest that higher levels of education, organizational tenure, and pay are associated with higher procedural justice determinants. The bivariate association between education and the Leventhal Index is contrary to existing research that suggests a negative relationship (Cohen-Charash and Spector, 2001; Truxillo and Bauer, 1999). However, the association with tenure reflects the expectation that the longer one is in the organization, the more likely the individual is to view existing procedures as fair (Giles, Findley, and Field, 1997). Pay has a larger association with the Leventhal Index as compared to both education and tenure, supporting the argument that individuals do use pay to organize themselves into different sub-cultures in the federal government. Likewise, evidence suggests that employees in the field may exhibit different Leventhal Index scores than those in headquarters. However, initial support was not provided for the hypothesized relationships between gender, minority status, and procedural justice determinants. In fact, the analysis



presented here suggests that minority perceptions of procedural justice indicators will be lower than non-minorities, consistent with other federal employee surveys (U.S. Merit Systems Protection Board, 1997), but inconsistent with existing procedural justice research which supports a positive relationship (Cohen-Charash and Spector, 2001; Colquitt et al., 2002). Gender difference did not emerge using either a one- or two-tailed significance test, which contradicts both meta-analysis findings (Cohen-Charash and Spector, 2001) and findings from other procedural justice studies using government employee survey data (McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1997).

Table 4.15  
Status of Hypotheses

		Rejection	Can Not Reject
H <sub>2.2</sub>	Women will exhibit higher procedural justice perceptions than men.	X	
H <sub>2.3</sub>	Minorities will exhibit higher procedural justice perceptions than non-minorities.	X	
H <sub>2.4</sub>	Higher educational attainment is associated with lower procedural justice perceptions.	X	
H <sub>2.5</sub>	Higher organizational tenure is associated with higher perceptions of procedural justice.		X
H <sub>2.6</sub>	Higher pay is associated with higher procedural justice perceptions.		X
H <sub>2.7</sub>	Employees in a field office will have different perceptions of procedural justice than employees in headquarters.		X
H <sub>2.9a</sub>	Managers will exhibit higher perceptions of procedural justice; or		X

		Rejection	Can Not Reject
H <sub>2.9b</sub>	Managers will report lower perceptions of procedural justice.	X	
H <sub>2.10a</sub>	Employees paying union dues will report higher perceptions of procedural justice; or	X	
H <sub>2.10b</sub>	Employees paying union dues will report lower perceptions of procedural justice.		X

Initial support was also provided for two parts of the third research question. Managers do appear to have higher perceptions of procedural justice determinants than employees. Similarly, perceptions of procedural justice determinants of union members are lower than non-dues-paying employees. Differences are consistent across all Leventhal criteria. Variations in procedural justice determinants increase the likelihood that modeling managers and employees separately, and union members and non-dues-paying employees separately, will prove to be informative and fruitful. Together, the manager and union differences provide initial support for the previously un-tested argument that subgroups within an organization may “have different procedural preferences because their beliefs, goals, and values differ” (Leventhal, Karuza, and Fry, 1980, p. 190). In terms of the management analysis, this is consistent with the idea that managers will exhibit higher perceptions because of their increased proximity to decisionmakers and resources. Likewise, those paying union dues are uniquely different from those who do not pay union dues, despite the presence of the union-negotiated procedures for grievances and other personnel actions.

## CHAPTER 5

### EXAMINING DETERMINANTS OF EMPLOYEE PERCEPTIONS OF PROCEDURAL JUSTICE

The second research question aims to consider what influences procedural justice perceptions. As noted in Chapter 2, the research of Tyler and colleagues largely sought to answer this question, and did so using a direct measure of procedural justice as the dependent variable and items consistent with the Leventhal criteria as the key independent variables. In fact, a key goal of the group value model (Lind and Tyler, 1988) and the relational model of authority (Tyler and Lind, 1992) was to identify the determinants of procedural justice perceptions.

Unfortunately, this research, like the development of the Leventhal criteria, is poorly defined and inconsistently operationalized. The research presented in the current chapter will both replicate existing scholarship by modeling the relationship between a direct measure of procedural justice perceptions and the Leventhal Index (Colquitt et al., 2001), and consider new models examining the degree to which individual demographic traits and employing agency influence the Leventhal Index scores.

#### Linking the Leventhal Index to Procedural Justice Perceptions

Scholars led by Tyler assess the relationship between the Leventhal determinants and a direct measure of overall procedural justice perceptions. This is a major reason for referring to the six Leventhal criteria as determinants. It is expected that increases in any or all of the Leventhal determinants will be associated with an increase in overall procedural justice

perceptions. As noted in Chapter 3, the direct measure of procedural justice is one survey item which asks respondents to identify the degree to which their agency treats them fairly in matters related to their employment (Q31D). In addition to the personal and work-related demographics, dummy variables are included for each agency to control for organization-specific variables that are not otherwise captured. These unknown variables could be organizational culture, degree of hierarchy, the presence of alternative personnel rules, a public scandal during the time of survey administration, etc. The base agency is the Department of Labor, which was selected because the average Leventhal Index score for the agency is closest to the governmentwide weighted mean.

The empirical model is presented in Table 5.1, and the results are consistent with Hypothesis 2.1 which suggested that as perceptions of the Leventhal Index increase, overall perceptions of procedural fairness will increase. Furthermore, the Leventhal Index exhibits the largest association with the procedural justice item, when examining the fully standardized coefficients, as compared to all the other independent variables. A one standard deviation increase in the Leventhal Index is accompanied by a 0.756 standard deviation increase in procedural justice perceptions.

Table 5.1  
Determinants of Procedural Justice Perceptions I  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Leventhal Index	0.155**	0.000	0.055	0.756
Minorities	-0.300**	0.000	-0.106	-0.046
Women	-0.119*	0.041	-0.042	-0.021
Completed Education	-0.042	0.078	-0.015	-0.019
Supervisors, Managers, Executives	0.173**	0.001	0.061	0.023
Union Dues	-0.193*	0.018	-0.068	-0.026

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Field Office	-0.002	0.981	-0.001	0.000
Agency Tenure	-0.012**	0.000	-0.004	-0.040
Salary in 1000s	0.001	0.441	0.000	0.009
Food Safety & Inspection Srv.	-0.266	0.101	-0.094	-0.008
Forest Srv.	-0.244	0.146	-0.086	-0.012
Natural Resources Conservation Srv.	-0.618**	0.000	-0.218	-0.022
Agriculture Other	-0.194	0.229	-0.068	-0.012
Air Force	-0.147	0.385	-0.052	-0.014
Corps of Engineers	-0.079	0.614	-0.028	-0.005
Army Other	-0.267	0.133	-0.094	-0.026
Ntnl. Inst. of Standards & Technology	-0.010	0.951	-0.004	0.000
Ntnl. Oceanic & Atmospheric Admin.	-0.382*	0.014	-0.134	-0.015
Patent & Trademark Ofc.	-0.922**	0.000	-0.325	-0.025
Commerce Other	-0.427**	0.005	-0.150	-0.020
Def. Contract Management Agy.	-0.270	0.095	-0.095	-0.008
Def. Finance and Accounting Srv.	-0.224	0.140	-0.079	-0.008
Def. Logistics Agy.	-0.359*	0.021	-0.127	-0.015
Defense Other	-0.240	0.090	-0.085	-0.014
Education	-0.178	0.282	-0.063	-0.004
Energy	-0.176	0.286	-0.062	-0.007
Environmental Protection Agy.	-0.268	0.125	-0.094	-0.010
Fed. Deposit Insurance Corp.	-0.330*	0.031	-0.116	-0.008
Public Building Srv.	-0.117	0.523	-0.041	-0.002
General Services Admin. Other	-0.063	0.721	-0.022	-0.001
Ctr. for Disease Control & Prevention	-0.347	0.051	-0.122	-0.008
Indian Health Srv.	0.035	0.863	0.012	0.001
Ntnl. Institutes of Health	-0.420*	0.023	-0.148	-0.012
Health & Human Srv. Other	-0.123	0.466	-0.043	-0.005
Customs & Border Protection	-0.300	0.086	-0.106	-0.014
Immigration & Customs Enforcement	-0.591**	0.001	-0.208	-0.017
Fed. Emergency Management Agy.	-0.306	0.058	-0.108	-0.004
Transportation Security Admin.	-0.272	0.203	-0.096	-0.012
Coast Guard	-0.194	0.265	-0.068	-0.004
Secret Service	-0.192	0.231	-0.067	-0.003
Homeland Security Other	-0.189	0.447	-0.067	-0.003
Housing and Urban Dvlpmt.	-0.365	0.060	-0.128	-0.009
Bureau of Land Management	-0.132	0.399	-0.047	-0.004
Indian Affairs	-0.156	0.493	-0.055	-0.002

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Ntnl. Parks Srv.	-0.192	0.226	-0.068	-0.007
Interior Other	-0.363*	0.026	-0.128	-0.019
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.578**	0.000	-0.203	-0.012
Bureau of Prisons	0.138	0.411	0.048	0.005
Drug Enforcement Admin.	-0.754**	0.000	-0.266	-0.018
Exec. Ofc. of the U.S. Attorney	0.076	0.785	0.027	0.001
Justice Other	-0.287	0.052	-0.101	-0.019
Ntnl. Aeronautics & Space Admin.	-0.299	0.065	-0.105	-0.014
Social Security Admin.	0.048	0.768	0.017	0.004
Marine Corps.	-0.384*	0.020	-0.135	-0.011
Navy Other	-0.291	0.108	-0.102	-0.026
Ofc. of Personnel Management	-0.427**	0.008	-0.150	-0.009
State	-0.446*	0.020	-0.157	-0.014
Fed. Aviation Admin.	-0.818**	0.000	-0.288	-0.045
Transportation Other	-0.242	0.151	-0.085	-0.007
Internal Revenue Srv.	-0.495**	0.003	-0.174	-0.042
Ofc. of the Comptroller of the Currency	0.075	0.626	0.026	0.001
Treasury Other	-0.109	0.523	-0.039	-0.004
Veterans Benefits Admin.	-0.051	0.760	-0.018	-0.002
Veterans Health Admin.	-0.173	0.300	-0.061	-0.020
Veterans Other	-0.161	0.339	-0.057	-0.004
Observations	24357		Pseudo R sq	0.962

\* significant at 5%; \*\* significant at 1%

*Note 1:* In this table and all the remaining empirical models, the un-standardized coefficient is presented along with the p-value and two different standardized coefficients. As noted in Chapter 3, standardized coefficients allow the researcher to determine which independent variable has the largest association with the dependent variable when the independent variables employ different units of measurement (Long, 1997). The Y-standardized coefficient is interpreted in the following manner: “having a characteristic x results in an expected change in y of  $\beta$  standard deviations” (Long and Freese, 2006, p. 97). It is appropriate to use Y-standardized coefficients for the dichotomous demographic variables. The fully standardized coefficient is interpreted in the following manner: “for a standard deviation increase in x, y is expected to change by  $\beta$  standard deviations” (Long and Freese, 2006, p. 97).

*Note 2:* The pseudo R-squares displayed in the remaining tables are the McKelvey and Zavonia R squared. It represents the proportion of the variance accounted for in the model.

An examination of the demographic traits reveals interesting patterns. First, when controlling for the Leventhal Index score and other variables, the variable for women is now significant and negative; this sign is not consistent with Hypothesis 2.2 which suggested the sign

would be positive. Being a minority has the largest association with procedural justice perceptions of all the demographic variables. In particular, minorities report procedural justice perceptions that are 0.106 standard deviations lower than non-minorities. Like the sign on the coefficient for women, the direction of the relationship is contrary to Hypothesis 2.3.

Management status and paying union dues were both significant, but exhibited the smallest relationship with procedural justice perceptions of all the demographic variables. Education became significant at the  $p > 0.05$  level when using a one-tailed test and its negative association with procedural justice perceptions is consistent with the hypothesis.

A majority of the agency controls were not significant in this model, and those achieving significance were negative, indicating they exhibit procedural justice perceptions that are below employees at the Department of Labor, the base agency, when holding all other variables equal. Employment at the Federal Aviation Administration and the Internal Revenue Service exhibits a larger negative association with procedural justice perceptions than being a minority. Neither coefficients indicating employment at the Transportation Security Administration or the National Aeronautics and Space Administration were significantly different from the Department of Labor, despite their consistent appearance as low and high performers, respectively, in the analyses presented in Chapter 4.

The marginal effects of the Leventhal Index on procedural justice perceptions provide additional insight (Table 5.2). For all potential values of procedural justice perceptions, the effect of the Leventhal Index is significant. A one unit change in the Leventhal Index results in a 0.1% decrease in the probability that a federal employee indicates they strongly disagree that they are treated fairly in matters related to their employment. Likewise, a one unit change in the Leventhal

Index results in a 2.9% increase in the probability that a federal employee indicates they agree that they are treated fairly in matters related to their employment.

Table 5.2  
Marginal Effects of the Leventhal Index on Procedural Justice Perceptions

	Marginal Effects	Confidence Interval	
Strongly Disagree	-0.001	-0.001	-0.001
Disagree	-0.005	-0.006	-0.005
Neither	-0.028	-0.030	-0.027
Agree	0.029	0.027	0.030
Strongly Agree	0.006	0.005	0.006

The next model separates the individual Leventhal criteria for more in-depth analysis of the components of the Leventhal Index. Generally, the Leventhal criteria exhibit a larger association with procedural justice perceptions than the demographic or agency variables (Table 5.3). In particular a one standard deviation increase in perceptions that decisions can be corrected is associated with a 0.308 standard deviation increase in agreement that the agency treats you fairly in matters related to your employment—the largest association in the model. Likewise, a one standard deviation increase in perceptions that employees are treated ethically is reflected in a 0.230 standard deviation increase in overall procedural fairness perceptions. A one standard deviation increase in perceptions that decisions are made using accurate information is associated with a 0.069 standard deviation increase in overall procedural fairness perceptions, which is the smallest relationship among the Leventhal determinants. Surprisingly, voice is not significant in this model. This is contrary to the group-value model (Lind and Tyler 1988) and published



research findings, but may be attributable to the use of survey items that are not exact replicas of previous survey instruments.

Table 5.3  
Determinants of Procedural Justice Perceptions II  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Bias Suppression	0.168**	0.000	0.057	0.176
Correctability	0.365**	0.000	0.123	0.308
Voice	0.016	0.399	0.005	0.016
Consistency	0.185**	0.000	0.062	0.179
Accuracy	0.066**	0.000	0.022	0.069
Ethicality	0.257**	0.000	0.087	0.230
Minorities	-0.261**	0.000	-0.088	-0.039
Women	-0.135*	0.025	-0.045	-0.023
Completed Education	-0.039	0.113	-0.013	-0.017
Supervisors, Managers, Executives	0.220**	0.000	0.074	0.028
Union Dues	-0.208*	0.011	-0.070	-0.026
Field Office	-0.021	0.783	-0.007	-0.003
Agency Tenure	-0.010**	0.001	-0.003	-0.033
Salary in 1000s	0.001	0.239	0.000	0.014
Food Safety & Inspection Srv.	-0.310	0.064	-0.105	-0.009
Forest Srv.	-0.287	0.097	-0.097	-0.013
Natural Resources Conservation Srv.	-0.669**	0.000	-0.226	-0.023
Agriculture Other	-0.210	0.205	-0.071	-0.012
Air Force	-0.138	0.436	-0.047	-0.013
Corps of Engineers	-0.087	0.593	-0.029	-0.005
Army Other	-0.342	0.060	-0.116	-0.033
Ntnl. Inst. of Standards & Technology	-0.046	0.787	-0.015	-0.001
Ntnl. Oceanic & Atmospheric Admin.	-0.391*	0.013	-0.132	-0.015
Patent & Trademark Ofc.	-0.827**	0.000	-0.279	-0.021
Commerce Other	-0.462**	0.003	-0.156	-0.021
Def. Contract Management Agy.	-0.385*	0.021	-0.130	-0.011
Def. Finance and Accounting Srv.	-0.261	0.093	-0.088	-0.009
Def. Logistics Agy.	-0.398*	0.013	-0.134	-0.016
Defense Other	-0.300*	0.041	-0.101	-0.017
Education	-0.262	0.118	-0.089	-0.006
Energy	-0.240	0.145	-0.081	-0.009

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Environmental Protection Agy.	-0.233	0.190	-0.079	-0.008
Fed. Deposit Insurance Corp.	-0.450**	0.004	-0.152	-0.010
Public Building Srv.	-0.253	0.174	-0.085	-0.005
General Services Admin. Other	-0.179	0.326	-0.060	-0.004
Ctr. for Disease Control & Prevention	-0.337	0.063	-0.114	-0.008
Indian Health Srv.	-0.019	0.925	-0.006	-0.001
Ntnl. Institutes of Health	-0.496**	0.009	-0.167	-0.013
Health & Human Srv. Other	-0.216	0.217	-0.073	-0.009
Customs & Border Protection	-0.456*	0.011	-0.154	-0.020
Immigration & Customs Enforcement	-0.676**	0.000	-0.228	-0.019
Fed. Emergency Management Agy.	-0.381*	0.021	-0.129	-0.005
Transportation Security Admin.	-0.278	0.199	-0.094	-0.012
Coast Guard	-0.274	0.129	-0.093	-0.005
Secret Service	-0.248	0.133	-0.084	-0.004
Homeland Security Other	-0.285	0.264	-0.096	-0.005
Housing and Urban Dvlpmt.	-0.413*	0.035	-0.140	-0.009
Bureau of Land Management	-0.147	0.361	-0.050	-0.004
Indian Affairs	-0.150	0.514	-0.051	-0.002
Ntnl. Parks Srv.	-0.185	0.251	-0.063	-0.006
Interior Other	-0.359*	0.032	-0.121	-0.018
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.540**	0.001	-0.182	-0.011
Bureau of Prisons	-0.023	0.893	-0.008	-0.001
Drug Enforcement Admin.	-0.761**	0.000	-0.257	-0.018
Exec. Ofc. of the U.S. Attorney	0.018	0.950	0.006	0.000
Justice Other	-0.361*	0.018	-0.122	-0.023
Ntnl. Aeronautics & Space Admin.	-0.328*	0.046	-0.111	-0.014
Social Security Admin.	-0.087	0.605	-0.029	-0.006
Marine Corps.	-0.430*	0.011	-0.145	-0.012
Navy Other	-0.399*	0.032	-0.135	-0.034
Ofc. of Personnel Management	-0.562**	0.001	-0.190	-0.011
State	-0.475*	0.014	-0.160	-0.014
Fed. Aviation Admin.	-0.786**	0.000	-0.265	-0.042
Transportation Other	-0.335	0.051	-0.113	-0.010
Internal Revenue Srv.	-0.493**	0.004	-0.167	-0.040
Ofc. of the Comptroller of the Currency	-0.084	0.590	-0.029	-0.001
Treasury Other	-0.151	0.388	-0.051	-0.005
Veterans Benefits Admin.	-0.084	0.623	-0.029	-0.003
Veterans Health Admin.	-0.269	0.115	-0.091	-0.030

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Veterans Other	-0.200	0.250	-0.068	-0.004
Observations	24357		Pesudo R sq	0.967

\* significant at 5%; \*\* significant at 1%

Individuals who are managers and individuals choosing to pay union dues have different perceptions than non-managers and those not paying union dues. In particular, managers exhibit overall procedural justice perceptions that are higher than non-managers, by 0.074 standard deviations, providing support for Hypothesis 2.9a. Employees paying union dues report lower overall perceptions of procedural justice than those who do not pay union dues, by 0.070 standard deviations, providing support for Hypothesis 2.10b. Both of these results are consistent with findings in Chapter 4. When examining the fully standardized coefficients, it is revealed that being a minority and organizational tenure have a larger association with the direct justice measure than either being a manager or choosing to pay union dues. Like in the previous model, gender is significant and negative. In this model, being a female respondent decreases overall fairness perceptions by 0.045 standard deviations. When using a one-tailed test, education is significant at the  $p > 0.10$  level, but negative.

Again, being employed by the Federal Aviation Administration or the Internal Revenue Service exhibits a larger association with the overall justice measure than any of the demographic traits. Federal Aviation Administration employees exhibit fairness perceptions that are 0.265 standard deviations below those of Labor employees. Internal Revenue Service employee perceptions of fairness are 0.167 standard deviations below their Labor colleagues.

Correctability and ethicality have the largest association with the likelihood of someone indicating they either agree or disagree that their agency treats them fairly in matters related to

their employment (Table 5.4). Specifically, a one unit change in the Ethicality index is associated with a 0.8% decrease in the probability of someone indicating low procedural justice perceptions. Likewise, a one unit change in the correctability index is associated with a 6.9% increase in the probably of someone indicating high procedural justice perceptions. Again, the marginal effects for voice are not significant.

Table 5.4  
Marginal Effects of Individual Leventhal Criteria on Procedural Justice Perceptions

	Unstandardized Coefficient	Disagree			Agree		
		Marginal Effect	Confidence Interval		Marginal Effect	Confidence Interval	
Bias Suppression	0.168**	-0.005	-0.006	-0.004	0.032	0.025	0.039
Correctability	0.365**	-0.011	-0.013	-0.010	0.069	0.062	0.076
Voice	0.016	0.000	-0.002	0.001	0.003	-0.004	0.010
Consistency	0.185**	-0.006	-0.007	-0.005	0.035	0.029	0.040
Accuracy	0.066**	-0.002	-0.003	-0.001	0.012	0.007	0.018
Ethicality	0.257**	-0.008	-0.010	-0.006	0.048	0.039	0.057

#### Determining the Leventhal Index

The next empirical models explore the extent to which personal and organizational characteristics influence the determinants of procedural justice perceptions, through the use of the Leventhal Index as the dependent variable. As noted previously, a respondent's score on the Leventhal Index can range from 0 to 72. Because of the large ranges of potential values, the index will be treated as a continuous variable and ordinary least squares (OLS) regression will be

used. As part of the first research question, the skewed nature of the Leventhal Index was described. To correct this distribution, and to be consistent with the assumptions of OLS, the natural log of the Leventhal Index is used. This same model is then used to assess the relationship between demographic traits, employing agency, and each of the individual Leventhal criteria.

Individual traits and agency of the respondent have a small overall relationship to perceptions of procedural justice indicators among federal employees (Table 5.5). Four of the demographic characteristics are significantly related to the procedural justice determinants and all have a standardized coefficient less than positive or negative 0.12. Minorities exhibit Leventhal Index scores that are 9% higher than non-minorities, all else being equal. This is the first result consistent with Hypothesis 2.3 which proposed a positive relationship.

Table 5.5  
Predicting the Leventhal Index  
(OLS regression)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	0.024**	0.004	0.090	0.039
Women	-0.012	0.121	-0.045	-0.022
Completed Education	0.006	0.060	0.023	0.029
Supervisors, Managers, Executives	-0.085**	0.000	-0.316	-0.118
Union Dues	0.066**	0.000	0.244	0.092
Field Office	0.006	0.475	0.023	0.009
Agency Tenure	0.000	0.586	-0.001	-0.013
Salary in 1000s	-0.000**	0.000	-0.002	-0.070
Food Safety & Inspection Srv.	-0.012	0.531	-0.045	-0.004
Forest Srv.	0.034	0.065	0.127	0.018
Natural Resources Conservation Srv.	-0.023	0.219	-0.087	-0.009
Agriculture Other	0.022	0.257	0.082	0.014
Air Force	-0.009	0.662	-0.034	-0.009

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Corps of Engineers	-0.039*	0.034	-0.145	-0.027
Army Other	-0.013	0.524	-0.050	-0.014
Ntnl. Inst. of Standards & Technology	0.029	0.160	0.107	0.005
Ntnl. Oceanic & Atmospheric Admin.	-0.029	0.105	-0.109	-0.012
Patent & Trademark Ofc.	0.012	0.564	0.043	0.003
Commerce Other	-0.027	0.124	-0.100	-0.014
Def. Contract Management Agy.	0.020	0.304	0.073	0.006
Def. Finance and Accounting Srv.	0.010	0.604	0.037	0.004
Def. Logistics Agy.	-0.011	0.589	-0.039	-0.005
Defense Other	0.005	0.769	0.019	0.003
Education	0.065**	0.001	0.242	0.015
Energy	0.044*	0.030	0.164	0.017
Environmental Protection Agy.	0.003	0.892	0.011	0.001
Fed. Deposit Insurance Corp.	0.073**	0.000	0.271	0.018
Public Building Srv.	0.014	0.556	0.051	0.003
General Services Admin. Other	0.019	0.386	0.073	0.005
Ctr. for Disease Control & Prevention	0.032	0.147	0.121	0.008
Indian Health Srv.	0.021	0.358	0.080	0.006
Ntnl. Institutes of Health	-0.004	0.865	-0.015	-0.001
Health & Human Srv. Other	0.023	0.266	0.086	0.011
Customs & Border Protection	0.104**	0.000	0.387	0.050
Immigration & Customs Enforcement	0.089**	0.000	0.331	0.027
Fed. Emergency Management Agy.	0.067**	0.001	0.250	0.010
Transportation Security Admin.	0.189**	0.000	0.703	0.091
Coast Guard	-0.014	0.492	-0.053	-0.003
Secret Service	-0.009	0.652	-0.033	-0.002
Homeland Security Other	0.033	0.313	0.122	0.006
Housing and Urban Dvlpmt.	0.020	0.428	0.074	0.005
Bureau of Land Management	0.058**	0.002	0.216	0.018
Indian Affairs	0.092**	0.000	0.344	0.014
Ntnl. Parks Srv.	0.061**	0.001	0.227	0.023
Interior Other	-0.002	0.924	-0.007	-0.001
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.007	0.694	-0.028	-0.002
Bureau of Prisons	0.073**	0.001	0.271	0.025
Drug Enforcement Admin.	0.000	0.994	-0.001	0.000
Exec. Ofc. of the U.S. Attorney	-0.033	0.389	-0.121	-0.005
Justice Other	0.007	0.710	0.025	0.005
Ntnl. Aeronautics & Space Admin.	-0.070**	0.000	-0.260	-0.034

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Social Security Admin.	0.002	0.938	0.006	0.001
Marine Corps.	0.027	0.158	0.101	0.008
Navy Other	0.011	0.601	0.041	0.010
Ofc. of Personnel Management	-0.014	0.469	-0.051	-0.003
State	-0.038	0.098	-0.141	-0.013
Fed. Aviation Admin.	0.077**	0.000	0.289	0.045
Transportation Other	-0.003	0.874	-0.012	-0.001
Internal Revenue Srv.	-0.013	0.517	-0.050	-0.012
Ofc. of the Comptroller of the Currency	-0.052**	0.004	-0.194	-0.010
Treasury Other	0.015	0.484	0.058	0.005
Veterans Benefits Admin.	-0.011	0.603	-0.040	-0.004
Veterans Health Admin.	0.006	0.790	0.023	0.007
Veterans Other	-0.006	0.771	-0.023	-0.001
Observations	24357		R squared	0.055

\* significant at 5%; \*\* significant at 1%

Organizational tenure is significant in the model. A one year increase in tenure is associated with a 0.1% decrease in procedural justice determinants. The longer one is in the organization, the more likely the individual is to view existing procedures as unfair. This finding is inconsistent with Hypothesis 2.5 which suggested a positive relationship. Additionally, this provides support to William and O'Reilley (1998) who suggested that organizational tenure would be more important for determining attitudes than education. When using a one-tailed test, both education and gender is significant at the  $p > 0.10$  level. However, the direction of the association for women is negative instead of positive, while education is positive as suggested.

Many of the agency controls are significant, indicating civil servants in these agencies have Leventhal Index scores that are different from those at the Department of Labor, consistent with Hypothesis 2.8. Signs on three of the agencies indicate that individuals employed in those agencies have lower perceptions of procedural justice determinants than those in the base agency,

the Department of Labor. Employees at 12 agencies have higher perceptions of procedural justice determinants than those at the Department of Labor. Examination of which agencies have higher perceptions and which agencies have lower perceptions reveals patterns contrary to what one would expect in light of the analysis detailed in the previous chapter. Coefficients for the Corps of Engineers, the National Aeronautics and Space Administration, and the Office of the Comptroller of the Currency suggest perceptions that are lower than the base agency, despite consistently exhibiting high averages on the Leventhal Index (table 4.1). Said in another way, their mean Leventhal Index score out-performs the predicted value when controlling for other variables. Likewise, Transportation and Security Administration and Customs and Border Protection coefficients indicate perceptions in those agencies are predicted to be higher than the Department of Labor, but in fact they consistently exhibit low averages on the Leventhal Index (table 4.1). When comparing the results in this model against the actual Leventhal Index scores, these three agencies are doing worse than the model would lead us to expect.

Managers exhibit perceptions of procedural justice determinants that are 8.5% lower than non-managers. This sign is different from previous analyses which suggested a positive association, but is consistent with Hypothesis 2.9b. The sign on the coefficient suggests that managers have access to information that leads them to have different perceptions than line employees about the fairness and consistency of decisionmaking.

Individuals who choose to pay union dues report perceptions of procedural justice determinants that are 6.6% higher than those who do not pay union dues. While consistent with Hypothesis 2.10a, it is contrary to the difference of mean analysis which revealed slightly higher perceptions among those not paying union dues. The coefficient here indicates that union agreements are providing procedures that increase perceptions of fairness in the workplace.



A review of the fully standardized coefficients provides additional information. Being a supervisor and paying union dues has a larger relationship to one's Leventhal Index score than any other demographic or agency variable. Employment in the Transportation Security Administration plays a larger role than one's pay rate. Agency tenure is less important than working at either Customs and Border Protection or the Federal Aviation Administration. The remaining 11 significant agency variables have a smaller association with the Leventhal Index than any of the demographic traits.

Finally, there are a number of reasons that may explain the small adjusted R-squared of the model. First, the average agency Leventhal Index scores only range from 49.79 to 36.64. Although scores at the individual level are highly differential, generally there are not large differences between the agencies for the model to explain. Second, agencies operate under similar laws, rules, and regulations that are applied governmentwide. While implementation and culture may vary, the foundation is consistent. Another potential explanation is that the study was not able to use the validated procedural justice measures as presented by Colquitt (2001). Perhaps employing those items would improve the explanatory power of the model. Additionally, the literature does not use this empirical model for answering the question of what influences procedural justice determinants. The minimal explanatory power may explain why this conceptualization has not been previously published.

Tables 5.6 through 5.11 assess the relationships between the individual Leventhal criteria, the demographic characteristics of the respondents, and employing agency. A number of patterns emerge from these models. Among the demographic variables, being a supervisor and paying union dues are the only variables significant in all six of the models. The sign on the management variable is consistently positive and the sign on the union variable is consistently

negative. This suggests support for Hypotheses 2.9a and 2.10b respectively, and mirrors the results of the difference of means presented in the previous chapter. Being a manager exhibits the largest relationship of any variable in the correctability, accuracy, and voice models. Pay and tenure are significant in 5 of the 6 models. Employment in the Transportation Security Administration has the largest negative association with perceptions that bias is suppressed, pay displays the largest positive relationship with perceptions of consistency, and choosing to pay union dues has the greatest negative association with perceptions that employees are treated ethically.

Federal Aviation Administration and Transportation Security Administration employees exhibit significant and negative perceptions compared to employees at the Department of Labor across all 6 models. The sign on the Transportation Security Administration variable changes from the first model in which the Leventhal Index was the dependent variable. Employees at the Federal Deposit Insurance Corporation had lower perceptions than Labor employees in all but the consistency model. National Aeronautics and Space Administration employees are significantly different in only the models for consistency and accuracy. Like the sign on the Transportation Security Administration coefficient, the sign on the National Aeronautics and Space Administration coefficient is now positive, whereas it was negative in the Leventhal Index.

Table 5.6  
Predicting the Correctability Index  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	-0.041	0.474	-0.022	-0.010
Women	0.019	0.704	0.011	0.005

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Completed Education	-0.056**	0.007	-0.031	-0.039
Supervisors, Managers, Executives	0.360**	0.000	0.197	0.073
Union Dues	-0.148*	0.050	-0.081	-0.031
Field Office	0.056	0.362	0.031	0.012
Agency Tenure	-0.006*	0.035	-0.003	-0.031
Salary in 1000s	0.001	0.184	0.000	0.018
Forest Srv.	-0.159	0.242	-0.087	-0.012
Natural Resources Conservation Srv.	0.244	0.069	0.133	0.013
Agriculture Other	-0.075	0.599	-0.041	-0.007
Air Force	-0.086	0.539	-0.047	-0.013
Corps of Engineers	0.043	0.755	0.023	0.004
Army Other	0.109	0.456	0.059	0.017
Ntnl. Inst. of Standards & Technology	-0.096	0.499	-0.052	-0.002
Ntnl. Oceanic & Atmospheric Admin.	0.054	0.675	0.030	0.003
Patent & Trademark Ofc.	-0.423**	0.004	-0.231	-0.018
Commerce Other	-0.008	0.949	-0.004	-0.001
Def. Contract Management Agy.	0.098	0.472	0.054	0.004
Def. Finance and Accounting Srv.	0.017	0.894	0.010	0.001
Def. Logistics Agy.	0.144	0.305	0.079	0.009
Defense Other	0.016	0.894	0.009	0.002
Education	-0.195	0.166	-0.107	-0.007
Energy	-0.087	0.554	-0.048	-0.005
Environmental Protection Agy.	-0.181	0.240	-0.099	-0.010
Fed. Deposit Insurance Corp.	-0.279*	0.031	-0.152	-0.010
Public Building Srv.	0.185	0.258	0.101	0.006
General Services Admin. Other	-0.050	0.754	-0.027	-0.002
Ctr. for Disease Control & Prevention	-0.261	0.084	-0.143	-0.009
Indian Health Srv.	0.151	0.405	0.083	0.006
Ntnl. Institutes of Health	-0.033	0.826	-0.018	-0.002
Health & Human Srv. Other	-0.096	0.534	-0.053	-0.007
Customs & Border Protection	-0.280	0.065	-0.153	-0.020
Immigration & Customs Enforcement	-0.272	0.078	-0.149	-0.012
Fed. Emergency Management Agy.	-0.196	0.167	-0.107	-0.004
Transportation Security Admin.	-0.537**	0.003	-0.293	-0.038
Coast Guard	0.128	0.364	0.070	0.004
Secret Service	-0.051	0.701	-0.028	-0.001
Homeland Security Other	-0.061	0.769	-0.034	-0.002
Housing and Urban Dvlpmt.	-0.096	0.572	-0.052	-0.004
Bureau of Land Management	-0.157	0.264	-0.086	-0.007
Indian Affairs	-0.270	0.134	-0.148	-0.006
Ntnl. Parks Srv.	-0.117	0.415	-0.064	-0.006
Interior Other	0.090	0.523	0.049	0.007
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.251	0.067	-0.137	-0.008
Bureau of Prisons	0.183	0.232	0.100	0.009
Drug Enforcement Admin.	-0.168	0.296	-0.092	-0.006
Exec. Ofc. of the U.S. Attorney	0.220	0.405	0.120	0.005
Justice Other	-0.162	0.212	-0.089	-0.017

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Ntnl. Aeronautics & Space Admin.	0.237	0.085	0.130	0.017
Social Security Admin.	0.030	0.828	0.016	0.004
Marine Corps.	-0.068	0.628	-0.037	-0.003
Labor	-0.070	0.611	-0.038	-0.004
Navy Other	0.193	0.190	0.106	0.027
Ofc. of Personnel Management	0.303*	0.025	0.166	0.010
State	0.038	0.808	0.021	0.002
Fed. Aviation Admin.	-0.470**	0.004	-0.257	-0.040
Transportation Other	0.106	0.441	0.058	0.005
Internal Revenue Srv.	-0.126	0.394	-0.069	-0.017
Ofc. of the Comptroller of the Currency	0.490**	0.000	0.268	0.014
Treasury Other	-0.090	0.564	-0.049	-0.005
Veterans Benefits Admin.	0.108	0.456	0.059	0.006
Veterans Health Admin.	0.164	0.292	0.090	0.029
Veterans Other	0.112	0.442	0.061	0.004
Observations	24357		Pseudo R sq	0.224

\* significant at 5%; \*\* significant at 1%

Table 5.7  
Predicting the Voice Index  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	-0.167**	0.002	-0.091	-0.040
Women	-0.023	0.649	-0.013	-0.006
Completed Education	-0.023	0.280	-0.013	-0.016
Supervisors, Managers, Executives	0.515**	0.000	0.278	0.104
Union Dues	-0.340**	0.000	-0.184	-0.069
Field Office	-0.056	0.352	-0.031	-0.012
Agency Tenure	-0.003	0.218	-0.002	-0.017
Salary in 1000s	0.002**	0.004	0.001	0.056
Forest Srv.	-0.169	0.201	-0.091	-0.013
Natural Resources Conservation Srv.	-0.060	0.650	-0.033	-0.003
Agriculture Other	-0.376**	0.006	-0.204	-0.035
Air Force	-0.160	0.261	-0.086	-0.024
Corps of Engineers	-0.051	0.694	-0.028	-0.005
Army Other	-0.197	0.177	-0.107	-0.030
Ntnl. Inst. of Standards & Technology	-0.404**	0.007	-0.218	-0.009
Ntnl. Oceanic & Atmospheric Admin.	-0.108	0.408	-0.059	-0.007
Patent & Trademark Ofc.	-0.467**	0.001	-0.252	-0.019
Commerce Other	-0.108	0.405	-0.059	-0.008
Def. Contract Management Agcy.	-0.416**	0.002	-0.225	-0.019
Def. Finance and Accounting Srv.	-0.302*	0.017	-0.163	-0.017

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Def. Logistics Agy.	-0.236	0.075	-0.127	-0.015
Defense Other	-0.387**	0.001	-0.209	-0.036
Education	-0.535**	0.000	-0.289	-0.018
Energy	-0.495**	0.001	-0.268	-0.028
Environmental Protection Agy.	-0.250	0.103	-0.135	-0.014
Fed. Deposit Insurance Corp.	-0.608**	0.000	-0.329	-0.022
Public Building Srv.	-0.282	0.074	-0.153	-0.009
General Services Admin. Other	-0.357*	0.029	-0.193	-0.012
Ctr. for Disease Control & Prevention	-0.427**	0.008	-0.231	-0.015
Indian Health Srv.	-0.378*	0.018	-0.205	-0.015
Ntnl. Institutes of Health	-0.293	0.065	-0.159	-0.013
Health & Human Srv. Other	-0.419**	0.005	-0.227	-0.028
Customs & Border Protection	-0.824**	0.000	-0.446	-0.058
Immigration & Customs Enforcement	-0.700**	0.000	-0.379	-0.031
Fed. Emergency Management Agy.	-0.539**	0.000	-0.292	-0.012
Transportation Security Admin.	-1.105**	0.000	-0.598	-0.078
Coast Guard	-0.160	0.306	-0.086	-0.004
Secret Service	-0.266	0.054	-0.144	-0.007
Homeland Security Other	-0.391	0.095	-0.212	-0.010
Housing and Urban Dvlpmt.	-0.342*	0.046	-0.185	-0.012
Bureau of Land Management	-0.561**	0.000	-0.304	-0.025
Indian Affairs	-0.660**	0.000	-0.357	-0.015
Ntnl. Parks Srv.	-0.487**	0.000	-0.264	-0.026
Interior Other	-0.218	0.102	-0.118	-0.017
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.120	0.387	-0.065	-0.004
Bureau of Prisons	-0.573**	0.000	-0.310	-0.029
Drug Enforcement Admin.	-0.292	0.076	-0.158	-0.011
Exec. Ofc. of the U.S. Attorney	-0.199	0.424	-0.108	-0.005
Justice Other	-0.399**	0.003	-0.216	-0.041
Ntnl. Aeronautics & Space Admin.	0.211	0.127	0.114	0.015
Social Security Admin.	-0.306*	0.032	-0.166	-0.036
Marine Corps.	-0.360**	0.008	-0.195	-0.016
Labor	-0.192	0.161	-0.104	-0.012
Navy Other	-0.313*	0.038	-0.169	-0.043
Ofc. of Personnel Management	-0.212	0.113	-0.115	-0.007
State	-0.117	0.467	-0.063	-0.006
Fed. Aviation Admin.	-0.423**	0.004	-0.229	-0.036
Transportation Other	-0.320*	0.022	-0.173	-0.015
Internal Revenue Srv.	-0.108	0.460	-0.059	-0.014
Ofc. of the Comptroller of the Currency	-0.050	0.706	-0.027	-0.001
Treasury Other	-0.409**	0.007	-0.221	-0.021
Veterans Benefits Admin.	-0.256	0.070	-0.139	-0.014
Veterans Health Admin.	-0.300	0.057	-0.163	-0.053
Veterans Other	-0.201	0.178	-0.109	-0.007
Observations	24357		Pseudo R sq	0.404

\* significant at 5%; \*\* significant at 1%

Table 5.8  
Predicting the Consistency Index  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	-0.292**	0.000	-0.156	-0.068
Women	0.273**	0.000	0.146	0.072
Completed Education	0.008	0.718	0.004	0.006
Supervisors, Managers, Executives	0.415**	0.000	0.221	0.082
Union Dues	-0.249**	0.000	-0.133	-0.050
Field Office	-0.146*	0.024	-0.078	-0.030
Agency Tenure	-0.007*	0.014	-0.004	-0.034
Salary in 1000s	0.004**	0.001	0.002	0.084
Forest Srv.	-0.341*	0.012	-0.182	-0.025
Natural Resources Conservation Srv.	0.057	0.673	0.030	0.003
Agriculture Other	-0.079	0.568	-0.042	-0.007
Air Force	0.250	0.085	0.134	0.036
Corps of Engineers	0.404**	0.001	0.216	0.039
Army Other	0.235	0.111	0.126	0.035
Ntnl. Inst. of Standards & Technology	-0.334*	0.025	-0.178	-0.008
Ntnl. Oceanic & Atmospheric Admin.	0.302*	0.021	0.161	0.018
Patent & Trademark Ofc.	0.104	0.481	0.056	0.004
Commerce Other	0.353**	0.006	0.188	0.026
Def. Contract Management Agy.	0.140	0.294	0.075	0.006
Def. Finance and Accounting Srv.	-0.012	0.927	-0.006	-0.001
Def. Logistics Agy.	0.333*	0.014	0.178	0.021
Defense Other	0.123	0.322	0.066	0.011
Education	-0.261	0.094	-0.139	-0.009
Energy	-0.254	0.074	-0.136	-0.014
Environmental Protection Agy.	0.276	0.076	0.147	0.016
Fed. Deposit Insurance Corp.	-0.240	0.068	-0.128	-0.009
Public Building Srv.	-0.138	0.372	-0.074	-0.004
General Services Admin. Other	-0.032	0.836	-0.017	-0.001
Ctr. for Disease Control & Prevention	0.019	0.907	0.010	0.001
Indian Health Srv.	-0.471**	0.007	-0.251	-0.019
Ntnl. Institutes of Health	0.058	0.738	0.031	0.003
Health & Human Srv. Other	-0.030	0.833	-0.016	-0.002
Customs & Border Protection	-0.465**	0.001	-0.248	-0.032
Immigration & Customs Enforcement	-0.671**	0.000	-0.358	-0.029
Fed. Emergency Management Agy.	-0.175	0.205	-0.093	-0.004
Transportation Security Admin.	-1.020**	0.000	-0.544	-0.071
Coast Guard	0.027	0.849	0.015	0.001
Secret Service	0.294*	0.032	0.157	0.008
Homeland Security Other	0.020	0.924	0.011	0.001
Housing and Urban Dvlpmt.	0.296	0.119	0.158	0.011
Bureau of Land Management	-0.358**	0.007	-0.191	-0.016
Indian Affairs	-0.665**	0.000	-0.355	-0.015

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Ntnl. Parks Srv.	-0.491**	0.000	-0.262	-0.026
Interior Other	-0.092	0.505	-0.049	-0.007
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.095	0.489	-0.051	-0.003
Bureau of Prisons	-0.417**	0.005	-0.223	-0.021
Drug Enforcement Admin.	0.153	0.353	0.082	0.006
Exec. Ofc. of the U.S. Attorney	0.352	0.257	0.188	0.008
Justice Other	-0.020	0.881	-0.011	-0.002
Ntnl. Aeronautics & Space Admin.	0.494**	0.000	0.264	0.034
Social Security Admin.	0.367**	0.009	0.196	0.043
Marine Corps.	-0.242	0.067	-0.129	-0.011
Labor	0.124	0.367	0.066	0.007
Navy Other	-0.160	0.292	-0.086	-0.022
Ofc. of Personnel Management	-0.010	0.943	-0.005	0.000
State	0.154	0.335	0.082	0.007
Fed. Aviation Admin.	-0.471**	0.002	-0.251	-0.039
Transportation Other	0.112	0.405	0.060	0.005
Internal Revenue Srv.	0.291*	0.045	0.155	0.037
Ofc. of the Comptroller of the Currency	0.169	0.209	0.090	0.005
Treasury Other	-0.018	0.913	-0.009	-0.001
Veterans Benefits Admin.	0.247	0.078	0.132	0.013
Veterans Health Admin.	-0.421**	0.004	-0.225	-0.073
Veterans Other	0.070	0.653	0.038	0.002
Observations	24357		Pseudo R sq	0.540

\* significant at 5%; \*\* significant at 1%

Table 5.9  
Predicting the Accuracy Index  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	0.068	0.213	0.036	0.016
Women	0.144**	0.005	0.077	0.038
Completed Education	-0.036	0.102	-0.019	-0.025
Supervisors, Managers, Executives	0.630**	0.000	0.339	0.126
Union Dues	-0.302**	0.000	-0.162	-0.061
Field Office	-0.040	0.498	-0.022	-0.009
Agency Tenure	-0.006*	0.035	-0.003	-0.030
Salary in 1000s	0.002**	0.001	0.001	0.043
Forest Srv.	-0.323*	0.011	-0.174	-0.024
Natural Resources Conservation Srv.	0.277*	0.030	0.149	0.015
Agriculture Other	0.003	0.980	0.002	0.000
Air Force	0.239	0.101	0.129	0.035
Corps of Engineers	0.367**	0.003	0.197	0.036

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Army Other	0.189	0.192	0.102	0.029
Ntnl. Inst. of Standards & Technology	0.003	0.986	0.001	0.000
Ntnl. Oceanic & Atmospheric Admin.	0.419**	0.001	0.225	0.025
Patent & Trademark Ofc.	0.546**	0.000	0.294	0.023
Commerce Other	0.356**	0.005	0.192	0.026
Def. Contract Management Agy.	-0.127	0.336	-0.069	-0.006
Def. Finance and Accounting Srv.	0.101	0.442	0.054	0.006
Def. Logistics Agy.	0.204	0.122	0.110	0.013
Defense Other	0.173	0.145	0.093	0.016
Education	-0.434**	0.004	-0.234	-0.015
Energy	-0.132	0.361	-0.071	-0.008
Environmental Protection Agy.	0.121	0.409	0.065	0.007
Fed. Deposit Insurance Corp.	-0.617**	0.000	-0.332	-0.023
Public Building Srv.	-0.090	0.550	-0.048	-0.003
General Services Admin. Other	-0.140	0.367	-0.075	-0.005
Ctr. for Disease Control & Prevention	0.046	0.770	0.025	0.002
Indian Health Srv.	0.174	0.244	0.094	0.007
Ntnl. Institutes of Health	0.259	0.125	0.140	0.011
Health & Human Srv. Other	-0.089	0.536	-0.048	-0.006
Customs & Border Protection	-0.668**	0.000	-0.359	-0.046
Immigration & Customs Enforcement	-0.333*	0.016	-0.179	-0.015
Fed. Emergency Management Agy.	-0.366**	0.007	-0.197	-0.008
Transportation Security Admin.	-0.912**	0.000	-0.491	-0.064
Coast Guard	0.214	0.137	0.115	0.006
Secret Service	0.238	0.078	0.128	0.006
Homeland Security Other	-0.013	0.955	-0.007	0.000
Housing and Urban Dvlpmt.	-0.082	0.659	-0.044	-0.003
Bureau of Land Management	-0.131	0.291	-0.071	-0.006
Indian Affairs	-0.179	0.269	-0.097	-0.004
Ntnl. Parks Srv.	-0.048	0.717	-0.026	-0.003
Interior Other	0.239	0.061	0.129	0.019
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.308*	0.020	0.166	0.010
Bureau of Prisons	-0.513**	0.001	-0.276	-0.025
Drug Enforcement Admin.	0.341*	0.029	0.184	0.013
Exec. Ofc. of the U.S. Attorney	0.403	0.109	0.217	0.009
Justice Other	0.131	0.305	0.071	0.013
Ntnl. Aeronautics & Space Admin.	0.533**	0.000	0.287	0.037
Social Security Admin.	-0.183	0.177	-0.099	-0.022
Marine Corps.	-0.014	0.919	-0.007	-0.001
Labor	0.112	0.404	0.060	0.007
Navy Other	0.076	0.605	0.041	0.010
Ofc. of Personnel Management	0.028	0.833	0.015	0.001
State	0.418**	0.008	0.225	0.020
Fed. Aviation Admin.	-0.456**	0.002	-0.245	-0.038
Transportation Other	0.157	0.236	0.084	0.007
Internal Revenue Srv.	0.340*	0.016	0.183	0.044
Ofc. of the Comptroller of the Currency	0.408**	0.001	0.220	0.011



	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Treasury Other	0.112	0.462	0.060	0.006
Veterans Benefits Admin.	0.210	0.129	0.113	0.011
Veterans Health Admin.	0.133	0.406	0.072	0.023
Veterans Other	0.195	0.178	0.105	0.007
Observations	24357		Pseudo R sq	0.467
* significant at 5%; ** significant at 1%				

Table 5.10  
Predicting the Ethicality Index  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	-0.178**	0.001	-0.096	-0.042
Women	0.040	0.426	0.022	0.011
Completed Education	0.017	0.440	0.009	0.012
Supervisors, Managers, Executives	0.435**	0.000	0.235	0.087
Union Dues	-0.501**	0.000	-0.270	-0.102
Field Office	-0.046	0.443	-0.025	-0.010
Agency Tenure	-0.007*	0.012	-0.004	-0.036
Salary in 1000s	0.002*	0.018	0.001	0.043
Forest Srv.	-0.217	0.093	-0.117	-0.016
Natural Resources Conservation Srv.	-0.148	0.254	-0.080	-0.008
Agriculture Other	-0.383**	0.003	-0.206	-0.035
Air Force	-0.126	0.381	-0.068	-0.019
Corps of Engineers	0.046	0.716	0.025	0.005
Army Other	-0.192	0.179	-0.103	-0.029
Ntnl. Inst. of Standards & Technology	-0.356*	0.015	-0.192	-0.008
Ntnl. Oceanic & Atmospheric Admin.	-0.185	0.139	-0.100	-0.011
Patent & Trademark Ofc.	-0.524**	0.000	-0.283	-0.022
Commerce Other	-0.115	0.370	-0.062	-0.008
Def. Contract Management Agy.	-0.385**	0.002	-0.208	-0.017
Def. Finance and Accounting Srv.	-0.434**	0.001	-0.234	-0.025
Def. Logistics Agy.	-0.327*	0.013	-0.177	-0.021
Defense Other	-0.327**	0.006	-0.177	-0.030
Education	-0.629**	0.000	-0.339	-0.022
Energy	-0.463**	0.002	-0.250	-0.026
Environmental Protection Agy.	-0.339*	0.029	-0.183	-0.019
Fed. Deposit Insurance Corp.	-0.466**	0.000	-0.251	-0.017
Public Building Srv.	-0.211	0.193	-0.114	-0.007
General Services Admin. Other	-0.296	0.059	-0.160	-0.010
Ctr. for Disease Control & Prevention	-0.497**	0.001	-0.268	-0.018
Indian Health Srv.	-0.417**	0.007	-0.225	-0.017

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Ntnl. Institutes of Health	-0.147	0.370	-0.079	-0.006
Health & Human Srv. Other	-0.272	0.059	-0.147	-0.018
Customs & Border Protection	-0.595**	0.000	-0.321	-0.041
Immigration & Customs Enforcement	-0.587**	0.000	-0.316	-0.026
Fed. Emergency Management Agy.	-0.727**	0.000	-0.392	-0.016
Transportation Security Admin.	-1.309**	0.000	-0.706	-0.092
Coast Guard	-0.023	0.877	-0.012	-0.001
Secret Service	-0.056	0.677	-0.030	-0.002
Homeland Security Other	-0.254	0.274	-0.137	-0.007
Housing and Urban Dvlpmt.	-0.384*	0.024	-0.207	-0.014
Bureau of Land Management	-0.632**	0.000	-0.341	-0.029
Indian Affairs	-0.828**	0.000	-0.447	-0.018
Ntnl. Parks Srv.	-0.622**	0.000	-0.336	-0.034
Interior Other	-0.310*	0.022	-0.167	-0.024
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.024	0.858	0.013	0.001
Bureau of Prisons	-0.500**	0.000	-0.270	-0.025
Drug Enforcement Admin.	-0.139	0.367	-0.075	-0.005
Exec. Ofc. of the U.S. Attorney	-0.009	0.971	-0.005	0.000
Justice Other	-0.078	0.555	-0.042	-0.008
Ntnl. Aeronautics & Space Admin.	0.255	0.064	0.137	0.018
Social Security Admin.	-0.070	0.622	-0.038	-0.008
Marine Corps.	-0.288*	0.035	-0.156	-0.013
Labor	-0.207	0.118	-0.111	-0.012
Navy Other	-0.262	0.067	-0.141	-0.036
Ofc. of Personnel Management	-0.129	0.327	-0.070	-0.004
State	0.144	0.377	0.078	0.007
Fed. Aviation Admin.	-0.557**	0.000	-0.301	-0.047
Transportation Other	-0.176	0.209	-0.095	-0.008
Internal Revenue Srv.	-0.106	0.441	-0.057	-0.014
Ofc. of the Comptroller of the Currency	0.199	0.121	0.107	0.005
Treasury Other	-0.382*	0.014	-0.206	-0.019
Veterans Benefits Admin.	-0.139	0.348	-0.075	-0.008
Veterans Health Admin.	-0.208	0.180	-0.112	-0.037
Veterans Other	-0.254	0.096	-0.137	-0.009
Observations	24357		Pseudo R sq	0.440

\* significant at 5%; \*\* significant at 1%

Table 5.11  
Predicting the Bias Suppression Index  
(ordered logit)

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
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	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Minorities	-0.160**	0.004	-0.087	-0.038
Women	-0.051	0.311	-0.028	-0.014
Completed Education	-0.029	0.162	-0.016	-0.020
Supervisors, Managers, Executives	0.421**	0.000	0.228	0.085
Union Dues	-0.497**	0.000	-0.268	-0.101
Field Office	0.036	0.542	0.020	0.008
Agency Tenure	-0.007*	0.010	-0.004	-0.035
Salary in 1000s	0.002*	0.012	0.001	0.035
Forest Srv.	-0.183	0.149	-0.099	-0.014
Natural Resources Conservation Srv.	-0.039	0.753	-0.021	-0.002
Agriculture Other	-0.324*	0.016	-0.175	-0.030
Air Force	-0.378**	0.006	-0.204	-0.056
Corps of Engineers	-0.071	0.579	-0.038	-0.007
Army Other	-0.242	0.097	-0.131	-0.037
Ntnl. Inst. of Standards & Technology	-0.245	0.081	-0.133	-0.006
Ntnl. Oceanic & Atmospheric Admin.	-0.059	0.623	-0.032	-0.004
Patent & Trademark Ofc.	-0.031	0.819	-0.017	-0.001
Commerce Other	-0.082	0.515	-0.044	-0.006
Def. Contract Management Agy.	-0.443**	0.001	-0.239	-0.020
Def. Finance and Accounting Srv.	-0.477**	0.000	-0.258	-0.027
Def. Logistics Agy.	-0.462**	0.000	-0.250	-0.030
Defense Other	-0.429**	0.000	-0.232	-0.039
Education	-0.596**	0.000	-0.322	-0.020
Energy	-0.531**	0.000	-0.287	-0.030
Environmental Protection Agy.	-0.388*	0.013	-0.209	-0.022
Fed. Deposit Insurance Corp.	-0.624**	0.000	-0.337	-0.023
Public Building Srv.	-0.425**	0.008	-0.230	-0.013
General Services Admin. Other	-0.390*	0.012	-0.211	-0.013
Ctr. for Disease Control & Prevention	-0.468**	0.004	-0.253	-0.017
Indian Health Srv.	-0.307	0.062	-0.166	-0.012
Ntnl. Institutes of Health	-0.208	0.191	-0.112	-0.009
Health & Human Srv. Other	-0.366*	0.011	-0.198	-0.025
Customs & Border Protection	-0.713**	0.000	-0.385	-0.050
Immigration & Customs Enforcement	-0.742**	0.000	-0.401	-0.033
Fed. Emergency Management Agy.	-0.749**	0.000	-0.405	-0.016
Transportation Security Admin.	-1.588**	0.000	-0.858	-0.111
Coast Guard	-0.022	0.879	-0.012	-0.001
Secret Service	-0.265	0.057	-0.143	-0.007
Homeland Security Other	-0.644**	0.006	-0.348	-0.017
Housing and Urban Dvlpmt.	-0.518**	0.004	-0.280	-0.019
Bureau of Land Management	-0.469**	0.000	-0.254	-0.021
Indian Affairs	-0.695**	0.000	-0.376	-0.015
Ntnl. Parks Srv.	-0.596**	0.000	-0.322	-0.032
Interior Other	-0.301*	0.025	-0.162	-0.024
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.130	0.322	-0.070	-0.004
Bureau of Prisons	-0.655**	0.000	-0.354	-0.033
Drug Enforcement Admin.	-0.305*	0.042	-0.165	-0.011

	Un- Standardized Coefficient	P>z	Y- Standardized	Fully Standardized
Exec. Ofc. of the U.S. Attorney	-0.148	0.561	-0.080	-0.003
Justice Other	-0.174	0.182	-0.094	-0.018
Ntnl. Aeronautics & Space Admin.	0.025	0.854	0.013	0.002
Social Security Admin.	-0.360**	0.009	-0.194	-0.043
Marine Corps.	-0.323*	0.013	-0.175	-0.015
Labor	-0.144	0.276	-0.078	-0.009
Navy Other	-0.267	0.070	-0.144	-0.037
Ofc. of Personnel Management	-0.094	0.478	-0.051	-0.003
State	0.037	0.823	0.020	0.002
Fed. Aviation Admin.	-0.580**	0.000	-0.313	-0.049
Transportation Other	-0.219	0.105	-0.118	-0.010
Internal Revenue Srv.	-0.243	0.075	-0.132	-0.032
Ofc. of the Comptroller of the Currency	-0.012	0.922	-0.007	0.000
Treasury Other	-0.411**	0.006	-0.222	-0.021
Veterans Benefits Admin.	-0.297*	0.042	-0.161	-0.016
Veterans Health Admin.	-0.257	0.089	-0.139	-0.045
Veterans Other	-0.242	0.107	-0.131	-0.008
Observations	24357		Pseudo R sq	0.419

\* significant at 5%; \*\* significant at 1%

## Conclusion and Discussion

A review of the nine models presented in this chapter finds mixed support for the hypotheses (Table 5.12). Arguably the most important hypothesis for the second research question, we can not reject the argument that an increase in the Leventhal criteria is associated with an increase in procedural justice perceptions among federal employees. This is consistent regardless if the Leventhal Index is used or if the individual Leventhal criteria are included separately, and is consistent with existing research (Colquitt et al., 2001). An increase in the suppression of bias in decisionmaking, the ability to correct inappropriate decisions, the consistency with which decisions are made, the accuracy of the information used to make decisions, and the degree to which individuals are treated ethically all play a role in influencing perceptions that your agency treats you fairly in matters related to your employment. The

insignificance of voice opportunities is troubling and surprising, because it is the most frequently studied component of procedural justice perceptions when scholars do not consider all the Leventhal determinants. Despite this, the Leventhal Index as a whole is significantly related to overall fairness perceptions as expected.

Table 5.12  
Review of Hypotheses

		Rejection	Can Not Reject
H <sub>2.1</sub>	As perceptions of the Leventhal determinants increase, overall perceptions of fairness will increase.		X
H <sub>2.2</sub>	Women will exhibit higher procedural justice perceptions than men.	X	
H <sub>2.3</sub>	Minorities will exhibit higher procedural justice perceptions than non-minorities.	X	
H <sub>2.4</sub>	Higher educational attainment is associated with lower procedural justice perceptions.		X
H <sub>2.5</sub>	Higher organizational tenure is associated with higher perceptions of procedural justice.	X	
H <sub>2.6</sub>	Higher pay is associated with higher procedural justice perceptions.		X
H <sub>2.7</sub>	Employees in a field office will have different perceptions of procedural justice than employees in headquarters.	X	
H <sub>2.8</sub>	Agency of the respondent will impact procedural justice perceptions.		X
H <sub>2.9a</sub>	Managers will exhibit higher perceptions of procedural justice; or		X
H <sub>2.9b</sub>	Managers will report lower perceptions of procedural justice.	X	
H <sub>2.10a</sub>	Employees paying union dues will report higher perceptions of procedural justice; or	X	

The hypotheses regarding women, minorities, and procedural justice perceptions and its determinants were not supported in a majority of the nine models considered in this chapter. Specifically, Hypothesis 2.2 suggested that women would exhibit higher perceptions of procedural justice and its determinants than men. The findings of two models supported this hypothesis (consistency and accuracy, Tables 5.8 and 5.9), but two other models contradicted the suggested direction of the relationship, and being female did not achieve significance in five models using either a one- or two-tailed test. Because the variable for women was either not significant or indicated a direction opposite of the hypothesis in a majority of the models, we must again issue a rejection. This assessment is consistent with a number of scholars who found no relationship between gender and procedural justice perceptions and indicators (Cropanzano et al., 2002; Bauer et al., 2001; Deckop et al., 1999; Scarpello and Jones, 1996; Wesolowski and Mossholder, 1997). Likewise, only the Leventhal Index model (Table 5.5) provided support for Hypothesis 2.3 which suggested minorities would exhibit higher perceptions of procedural justice than non-minorities. In fact, minorities exhibited lower perceptions in six of the models and did not achieve significance in two models using either a one- or two-tailed test (correctability and accuracy, Table 5.5 and 5.9). Because the variable for minorities was either not significant or indicated a direction opposite of the hypothesis in a majority of the models, we must once again issue a rejection.

Levels of education exhibited a negative association in five of the nine models when including one-tailed significance tests, including both procedural justice models (Tables 5.1 and 5.3) and the models predicting correctability, accuracy, and bias suppression. Agency tenure was

significant in seven of the nine models, but the relationship was not in the hypothesized direction. Hypothesis 2.5 suggested the relationship between tenure and procedural justice perceptions and its determinants should be positive, but it was negative in seven models. Those with longer tenure in the organization have more experience on which to base their perceptions of procedural justice and its determinants. Apparently, this experience includes examples of decisionmaking processes that are not viewed as fair.

Higher pay was associated with higher perceptions of procedural justice and its determinants in six of the nine models, indicating the appropriateness of Hypothesis 2.6. However, only one model (consistency, Table 5.8) provided support for the idea that field office employees have different perceptions of procedural justice and its determinants than those in headquarters. As a result, we can not accept Hypothesis 2.7 which suggested they would be different. Agency of the respondent was important in all the models, supporting Hypothesis 2.8. In some of the models, the agency was more important, i.e., had a larger association with, the procedural justice measures than did other demographic characteristics. The direction of the relationship on some of the agency coefficients did change between the models as noted above. Unique agency rules and cultures are playing a role in determining procedural justice perceptions and their determinants.

Being a manager and choosing to pay union dues was significant in all nine models presented in this chapter. In eight of the nine models, managers exhibited higher perceptions of procedural justice and its determinants than non-managers. This indicates that Hypothesis 2.9a is more appropriate and is consistent with the difference of means presented in the previous chapter. Those employees choosing to pay union dues exhibited lower perceptions of procedural justice and its determinants in eight of the nine models, providing support for Hypothesis 2.10b.

Like the managers, the direction of the association is consistent with the difference of means presented in the previous chapter. The one exception to the consistent direction of the relationship occurred in the Leventhal Index model (Table 5.5) in which being a manager was associated with a lower Leventhal Index score and paying union dues coincided with a higher score on the Leventhal Index.

The consistent findings for both managers and dues-paying employees suggest that differences will be found in the analysis associated with the third research question of this dissertation. Managers and those paying union dues appear to represent unique organizational sub-cultures which interpret fairness information in a distinctive way, compared to the rest of the organization (Leventhal, Karuza, and Fry, 1980). Or more simply, perceptions vary according to role in the organization (Walker et al., 1979; LaTour, 1978; Walker et al., 1974).

Although support was provided for many of the hypotheses, the theory and models for determining what influences procedural justice perceptions are not satisfying. One group of procedural justice scholars believes that procedural justice perceptions can be asked about directly, while another group believes an indirect approach is preferred. An indirect measure of procedural justice determinants was deliberately selected for the bulk of this research. Indirect measures, like the Leventhal Index, articulate the complexity of the concept while still being parsimonious. It is preferable to measure determinants of procedural justice because measuring procedural justice directly is overly-simplistic.

These observations, however, do not necessarily help us to effectively answer the question of what influences procedural justice perceptions. Employing a set of indicators like the Leventhal Index makes answering this question difficult. Potentially the problem rests with existing scholarship which exhibits an over-reliance on laboratory experiments and survey-based



studies. Since there is general agreement that the Leventhal determinants are appropriate, maybe answering the question of what influences procedural justice perceptions is dependent on context. What specifically are the rules in a particular organization? Are these rules viewed as fair? Does the organizational culture reinforce the idea that the rules are fair? Likewise, how are the rules implemented and how are individuals treated during decisionmaking activities in this particular organization or by this particular manager?

The group engagement model notes that procedural justice perceptions are related both to the formal rules and the social interaction that takes place when they are implemented. Rules, structure, and culture are context-specific. Appropriate levels of detail would be difficult to gather in a quantitative study, whether survey- or laboratory-based. Laboratory-based studies would be particularly poor at answering this question because there would be no establishment of organizational culture or social interactions occurring over a period of time. Qualitative research, including case studies, may be more appropriate for discovering what influences procedural justice perceptions.

## CHAPTER 6

### PROCEDURAL JUSTICE PERCEPTIONS IN NASA AND TSA

The National Aeronautics and Space Administration (NASA) and the Transportation Security Administration (TSA) represented opposite ends of the continuum of procedural justice determinants in the federal government in 2005. To address the important issue of organizational context raised at the end of the previous chapter, the qualitative analysis here aims to understand the working environments in NASA and TSA in terms of the issues of bias suppression, consistency, and correctability.<sup>15</sup> In addition, document analysis identifies significant events happening during the time the survey was administered which might have influenced responses. Information revealed during interviews with a range of officials provides insights on the different environments in the two agencies and provides preliminary explanations for the Leventhal Index scores.

#### NASA and TSA Employee Demographics and Perceptions

The demographics of NASA and TSA employees are provided in Table 6.1. For the sake of comparison, the demographics of the base agency, the Department of Labor, are also provided. Not surprisingly, NASA employees are older, receive higher pay on average, and are more highly educated than those of TSA. TSA employees are not paying union dues, which is not surprising considering at the time of the survey employees were not allowed to bargain collectively, and

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<sup>15</sup> As previously noted in Chapter 3 and detailed in the interview guide provided in Appendix A, the other Leventhal criterion were not discussed in order to minimize the length of the interviews and the time required of the elites.

they have the shortest agency tenure of the three agencies. Proportions of women in TSA and NASA are similar, however.

Table 6.1  
Demographics of NASA, Labor, and TSA Employees

	NASA		Labor		TSA	
	Mean or Proportion	Std. Error	Mean or Proportion	Std. Error	Mean or Proportion	Std. Error
Minorities	0.187	0.021	0.262	0.025	0.259	0.032
Age	48.414	0.497	47.202	0.567	46.691	0.783
Union Dues	0.059	0.013	0.382	0.027	0.000	NA
Agency Tenure	18.173	0.488	14.163	0.518	3.001	0.136
Salary in 1000s	95.592	1.266	78.669	2.274	43.992	1.679
Field Office	0.940	0.012	0.737	0.024	0.923	0.019
College Education	0.470	0.026	0.294	0.025	0.090	0.020
Managers	0.088	0.000	0.147	0.000	0.212	0.000
Women	0.327	0.025	0.518	0.027	0.307	0.034

College education indicates the proportion of employees with a bachelors degree or higher.

The average Leventhal Index score and Leventhal criteria scores are presented in Table 6.2. None of the NASA and TSA confidence intervals overlap. The biggest difference in average scores among the Leventhal criteria are found in the areas of bias suppression and the consistency of decisionmaking. The smallest area of difference occurs on the subject of correctability. Overall, the Leventhal Index average is more than 12 points higher for NASA employees as compared to TSA employees.

Table 6.2  
NASA, Labor, and TSA Average Leventhal Index Scores

	Mean	Confidence Interval	
<i>NASA</i>			
Leventhal Index	49.273	47.905	50.642
Bias Suppression	11.656	11.369	11.943
Correctability	10.038	9.790	10.286
Voice	11.986	11.715	12.258
Consistency	10.845	10.577	11.114
Accuracy	10.551	10.250	10.851
Ethicality	12.197	11.939	12.455
<i>Labor</i>			
Leventhal Index	45.295	43.901	46.689
Bias Suppression	11.068	10.742	11.395
Correctability	9.610	9.349	9.871
Voice	11.213	10.899	11.527
Consistency	10.156	9.847	10.465
Accuracy	9.858	9.536	10.179
Ethicality	11.390	11.112	11.668
<i>TSA</i>			
Leventhal Index	36.640	34.587	38.694
Bias Suppression	8.939	8.420	9.459
Correctability	9.166	8.764	9.568
Voice	9.917	9.476	10.358
Consistency	8.307	7.920	8.693
Accuracy	8.303	7.850	8.753
Ethicality	10.010	9.585	10.433

## Selection of Agencies and the Interviewees

Selection of the cases was purposive and criteria-based, not random (Maxwell 2005; Miles and Huberman 1994). The maximum variation method was used to select cases. Under this rubric, the cases are not intended to be representative of the general population. Instead, cases are selected based on their variation within a particular variable to enable the collection of the broadest scope of information (Guba and Lincoln 1989). Said another way, the cases are selected to be as different as possible on one characteristic that is important the study (Guba and Lincoln 1989; Maxwell 2005). In this research, agencies are selected based on their average scores on the Leventhal Index. TSA was selected because its employees exhibit the lowest Leventhal Index score of any agency in the study. NASA was selected to represent the other end of the distribution, with the second highest Leventhal Index average. The agency with the highest Leventhal Index average, the Army Corps of Engineers, was not selected for study because, at the time the interviews were to take place, the Corps was implementing the National Security Personnel System, the set of alternative personnel authorities granted to the Department of Defense. It was assumed that any question about justice perceptions among Corps employees would be answered with reflections regarding the new system, and not on the system in place in 2005.

A total of 10 individuals were interviewed for the NASA case study. This included two GAO analysts, two NASA Human Capital officials in headquarters, two union representatives from the American Federation of Government Employees (AFGE), and four union representatives from the International Federation of Professional and Technical Engineers (IFPTE). Of the 10 individuals, 5 were women. Five interviewees had worked at NASA for more

than 15 years. NASA employees have been unionized for decades. AFGE and IFPTE represent the largest number of employees of the various unions in the organization.

Ten individuals were also interviewed for the TSA case study. Interviewees included three GAO analysts, three TSA Human Capital officials in headquarters, three representatives from the National Treasury Employees Union (NTEU), and one AFGE representative. Of the 10 individuals, 8 were men. GAO analysts familiar with management challenges at TSA conducted audit work on the agency since its inception. The three Human Capital officials had been in their current posts for less than two years. Collective bargaining was not permitted at TSA at the time of the survey or the interviews. Despite this, both AFGE and NTEU have efforts to organize employees at airports across the country. Because they are not recognized by the agency, they serve employees by sharing information and providing representation during grievances and appeals when requested. Despite the lack of formal recognition, the employee representatives are still good sources of information of front-line employee experiences.

As noted in Chapter 3, the same questions were asked of NASA, TSA, GAO, and union officials, regardless of agency. Given time limitations, interviews focused on perceptions relating to bias suppression and consistency because these areas represented widely different scores between NASA and TSA, and the area of correctability because the two agency scores were the most similar. The interview protocol followed a semi-structured format and is presented in Appendix A.

#### Determinants of Procedural Justice Perceptions at NASA

The survey data used in the other parts of this research were collected in the summer and fall of 2005. A review of major print news outlets and agency press releases covering the period

of January to August 2005 was undertaken to identify any major issues that may have influenced responses of agency employees. For example, a scandal, a public success, or turnover of senior leadership could improve or decrease employee perceptions of fairness, satisfaction, etc.

During the period between January and August 2005, NASA faced the departure of one agency head and the arrival of another, the quest to send the shuttle back into space after the Columbia tragedy, and significant budget pressures that resulted in some downsizing. In February 2005, Administrator Sean O’Keefe left the agency. Michael Griffin was appointed NASA Administrator in April, and within months, he reassigned several senior executives to new posts. During the same time period, the Return-to-Flight Task Group met multiple times to review NASA procedures and technical upgrades. Ultimately, the shuttle was launched on July 26, 2005 for the first time since the Columbia disaster.

Budget pressures at NASA received extensive press coverage. Buy-outs, early retirement offers, and reductions-in-force, were all being discussed for multiple locations: NASA headquarters, Langley Research Center, Glenn Research Center, and Marshall Space Flight Center. The continuation of funding for the Hubble telescope and other cuts in spending on life science research were hotly debated by members of Congress. One frequently-discussed plan suggested converting the research centers to federally funded research and development centers affiliated with universities, similar to the nuclear research labs associated with the Department of Energy. This would essentially privatize the research and result in employees losing their civil service status.

Despite the organizational stresses associated with executive turnover, budgetary challenges, and the effort to return to flight, NASA employees exhibited the second highest Leventhal Index average in the survey. It is also clear that NASA has areas where it can improve

perceptions of procedural justice. Said one Human Capital official: “even though we rank among the best in government, that does not mean [we] are doing it well” (personal communication, March 17, 2008).

In the area of bias suppression, interviewees were consistent with their assessment of NASA’s high score. Project related decisions are fact-based, transparent, and are subject to a rigorous process. Additionally, multiple layers of review, from the project level up through the executive ranks, help to minimize the likelihood that decisions are influenced by bias. Project timeframes and budgets help to ensure that technical objectives are accomplished. The presence of bias would likely limit the ability of project goals to be met.

It is also clear that NASA can improve in the area of bias suppression. IFPTE representatives reported that they work with employees to address complaints about managers informally and that management is usually agreeable to doing so. Likewise, IFPTE representatives note that employees are so engaged with the work and so dedicated to the culture of the agency, that many tolerate treatment that would otherwise result in formal complaints in other agencies so that they can continue working on the research that they enjoy. This implies that expectations for fair treatment may be lowered by individuals for the sake of doing the projects. As a result few formal grievances are filed.

Two IFPTE representatives provided an example of problems in the promotion process independent of each other without direct prompting by the researcher. In 2001, a class action lawsuit regarding the promotion rates of African-Americans was settled, resulting in immediate promotions of a large number of African-Americans, and a longer-term effort to promote a more diverse cadre of individuals throughout the agency. Both IFPTE representatives indicated that employees feel *some* of the promotions were given to less qualified individuals; one



representative described it as “the misapplication of affirmative action policies” (personal communication, May 19, 2008). The two representatives work in different NASA centers and were not directly asked about the promotion issue. They voluntarily raised the concern as a response to the general question about bias suppression. One representative was male and one was female. It is not possible in this research to determine what drove the promotions. However, the fact that both raised the issue independently adds validity to the claim that *some* employees feel that *some* promotions are influenced by bias on the part of the decisionmakers.

One representative noted that when unqualified individuals are promoted, those managers then make decisions that may be inappropriate or inaccurate, affecting the quality of work products. Additional impacts are felt during the performance appraisal process. Managers who do not have the appropriate level of technical skills are asked to assess the impact of scientific contributions as part of the appraisal process. Lacking technical skills, assessments are then influenced by various forms of bias. According to the representative, this is an area of growing concern as NASA moves away from a pass/fail appraisal system and begins to implement pay-for-performance.<sup>16</sup>

In addition to performing better than most of government in the area of bias suppression, NASA employees have relatively high perceptions that decisionmaking is consistent across individuals and across time. As with bias suppression, interviewees provided similar explanations for NASA’s high level of performance in consistency. First, the project management procedures are documented to high levels of detail and are consistently applied across projects and individuals. The project management framework requires the use of transparent performance measures and the documentation and distribution of lessons-learned.

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<sup>16</sup> The move to a pay-for-performance system happened after the 2005 Merit Principles Survey was administered.

Second, NASA has recently been providing more direction for human capital management from headquarters, increasing the consistency of policy within the various centers. When policies are distributed from headquarters efforts are made to ensure managers at the centers are aware of the policies. For example, human capital officials from headquarters frequently travel to centers to brief project managers on new policies. A bi-weekly conference between agency human capital officials in headquarters and the centers help to provide for consistent implementation of policies. One Human Capital official noted that the bigger reason for high marks in the area of consistency is due to Administrator Griffin setting the expectation that decisionmaking will be transparent and knowledge-driven.

Again, there are areas where NASA can improve the consistency of decisionmaking. For example, two IFPTE representatives noted that, although project management procedures are consistent, the results achieved are inconsistent. Said another way, a detailed process does not guarantee a successful project outcome. Likewise, stated performance appraisal standards are consistent across individuals, but how performance is measured against those standards is not consistent. Again the concern regarding under-qualified managers was identified as a contributing factor. Another challenge to measuring performance consistently is the ambiguity of many project goals. When goals are ambiguous, one representative noted, the performance measures are ambiguous, resulting in inconsistent and potentially biased assessments.

Another IFPTE representative provided a specific example where NASA has been inconsistent with the application of performance standards: the disciplining of employees for viewing pornography on government equipment during business hours. According to the representative, managers in some centers provide verbal warnings to employees before formally disciplining those found to be viewing inappropriate material. In other centers, employees are

given no warnings and automatically suspended for 2 weeks without pay. He did note that the 2 week suspension was the formal penalty consistently used. Additionally, the IFPTE representative claimed that different NASA centers have different standards for what is considered to be inappropriate material (personal communication, April 29, 2008).

Employees have lower perceptions that inappropriate or inaccurate decisions can be corrected. On the positive side, interviewees indicate that draft policies are significantly influenced by employee input. For example, GAO analysts noted that when NASA posted draft project management procedures for review and comment to staff, they received over 1,400 comments. These comments influenced a number of changes to the proposed procedures. In addition to comments from staff, recommendations from managers in the centers are taken seriously and influence decisionmaking. GAO analysts described a number of situations where NASA management had agreed to implement recommendations from GAO audit findings, but then altered course after input from the centers. Likewise, AFGE and IFPTE representatives noted the willingness of management to listen to union concerns and to change policies as a result of these informal contacts. By changing policies and other decisions informally, the need to file formal grievances or unfair-labor-practice claims is minimized.

Despite this, and despite efforts after the Challenger and Columbia tragedies to open opportunities to raise concerns about decisionmaking, union representatives identified a number of reasons why NASA does not perform as highly on the dimension of correctability. In general, higher levels of management exhibit an unwillingness to change course once a decision has been made. At the project level, cost pressures and schedule deadlines discourage individuals from raising concerns that may impact the project cost or the ability to meet timelines. Additionally, employees perceive that raising concerns will have negative professional consequences. This

manifests itself in a bandwagon effect whereby employees may publicly agree with decisions even if they have personal reservations, so that they are given professional credit for supporting management. Individuals who do raise concerns publicly are given little support. Finally, when disagreements between the unions and management become formalized, the General Counsel's approach to the problem is to strive to win at all costs, regardless of the merit of the claim, according to one IFPTE representative (personal communication, May 6, 2008).

One human capital policy discussed by four of the union representatives touches on all three dimensions of bias suppression, consistency, and correctability. At the time the survey was administered, NASA was implementing a competency inventory system, whereby employees were required to document their various skills and competencies. The data are then used for a number of purposes, including workforce planning activities and determining project assignments. As NASA strives to realign its workforce so that the agency can return to the moon, retire the shuttle, and work towards going to Mars, GAO has noted that the agency will need to realign the skill set that is currently available in the workforce (U.S. Government Accountability Office 2007). However, one IFPTE representative believes that, despite the workforce planning efforts and the development of the inventory, that NASA management "doesn't have a clue" what skills are critical for future program success (personal communication, May 1, 2008).

Union representatives expressed numerous, similar concerns about how the competency inventory system is used to assign people to projects. For example, one IFPTE representative criticized the process used to match skills to projects. Managers search in the system for key words, which are not made available to staff ahead of time so that they can tailor their inventory accordingly. Those who are not coached on the application process are not identified as eligible. Additionally, of those who are identified as eligible, the perception is that only the top matches

are considered, as opposed to all matches. Previously, all eligible employees received serious consideration for projects, according to this IFPTE representative. Another IFPTE representative noted that the use of the inventory does not always result in matching the right people with the right skills to projects. When mismatches occur, the likelihood of an individual receiving a poor performance rating increases. Poor performance ratings are ultimately leading to more involuntary separations than in the past. Finally, an AFGE representative added that project assignments based on the inventory can not be appealed through the formal grievance process, so may are turning into formal complaints of discrimination.

#### Determinants of Procedural Justice Perceptions at TSA

Between January and August of 2005, TSA was confronted with internal management challenges and negative press attention which may have impacted responses to the Merit Principles Survey. First, the agency was faced with the resignation of a third Administrator. David Stone, who had served 8 months as the Acting Administrator and 9 months as the Senate-confirmed Administrator, stepped down from the post in June 2005. Kip Hawley was sworn in as the new Administrator in July 2005. This served as continuation of a trend of frequent turnover of administrators since the creation of TSA in November 2001. The first Administrator, John Magaw, served for 7 months. James Loy, the second Administrator served for 15 months. In addition to leadership turnover, TSA was adjusting staffing levels at airports across the country, continuing an effort that began in 2004. The reallocation of screeners among airports, based on workload projections, resulted in downsizing, hiring freezes, and assignment of screeners to new locations if possible. TSA was also respond to on-the-job injury rates among screeners higher than the national average and a Congressional proposal to privatize the entire screener workforce.

There were four noteworthy public controversies regarding TSA between January and August 2005. In March, an Inspector's General report found that detection of explosives and weapons by screeners had not improved since a previous inspection (U.S. Department of Homeland Security Inspector General, 2005a). Also in March, another Inspector General report documented mismanagement of a contract used to establish the Transportation Security Operations Center (U.S. Department of Homeland Security Inspector General, 2005b). This report identified wasteful and inappropriate spending for equipment and lax oversight of the entire contract. Overall, the report found:

Senior management's failure to enforce procurement regulations and policy... created a culture in which procurement procedures were abandoned, ethical norms slipped, and fiscal responsibility was neglected. This environment fostered improper or questionable purchases and construction decisions, as well as disregard for the ethical duty of impartiality, by the project manager and others involved with the project. (U.S. Department of Homeland Security Inspector General, 2005b, p. 5-6)

GAO reported in May 2005 on TSA's efforts to improve the content of training provided to baggage and passenger screeners and screener supervisors (U.S. Government Accountability Office 2005). However, GAO found significant challenges to screeners being able to complete the required training during normal work hours, due to airports lacking internet connections to access online training tools and understaffing which prevented airport managers from allowing screeners to leave the security checkpoints to complete training.

Yet another significant negative story about TSA emerged in July 2005 regarding contract irregularities associated with the hiring of the first set of screeners after the agency's creation. Within one year of being created, TSA hired over 56,000 screeners to staff airport security

checkpoints – a difficult task even for those agencies with established personnel and contracting infrastructure. However, reports in July detailed cost over-runs, changing priorities, and a lack of accountability (U.S. Department of Homeland Security Inspector General, 2005c). An initial audit of the contract by the Defense Contract Audit Agency found insufficient documentation to be able to render an opinion of the financial management of the contract (Higham and O’Harrow, 2005).

Regardless of particular news reports, TSA generally operates in a high-stress environment. Policies and activities frequently change as security information dictates. It receives a high level of oversight from the press, the Congress, and the public. Congress, in particular, sets ambitious deadlines for the implementation of various programs that would be difficult for any agency to meet. Likewise, screeners work in a high-stress environment where they get little positive recognition for their work from the public. All three GAO analysts interviewed for this research indicated this creates a challenging environment. One indicated the “scrutiny is white-hot” (personal communication, March 21 2008), while another noted TSA is “constantly under the microscope” (personal communication, March 25, 2008).

In addition to a high pressure work environment, TSA is exempted from many federal personnel management rules. In the statute creating TSA,<sup>17</sup> it was granted authority to use the flexibilities made available to the Federal Aviation Administration in 1995.<sup>18</sup> The flexibilities allow TSA and FAA to design alternative systems for compensation, hiring and training. Furthermore, the statute creating TSA included additional flexibilities for hiring and firing screeners and the creation of alternative disciplinary systems. Significant authority was also given to the TSA Administrator to determine if employees would be allowed to engage in

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<sup>17</sup> P.L. 107-71, *Aviation and Transportation Security Act*.

<sup>18</sup> P.L. 104-50, *Fiscal Year 1996 Department of Transportation Appropriations Act*.

collective bargaining. With this authority, and the later transfer to the Department of Homeland Security in late 2002, TSA had no institutional set of human capital policies on which to base its workforce management. During the course of the interviews, TSA Human Capital officials indicate that they were still drafting agency policies for activities as basic as the promotion system. Only recently were centralized training programs developed to educate managers about human capital policies, including conflict resolution.

Compounding the challenge is the situation that TSA is granted human capital flexibilities that are different and separate from those provided to Homeland Security, nor is TSA required in any way to adapt policies used by the rest of Homeland Security (U.S. Government Accountability Office, 2004). TSA human capital officials indicate there is minimal coordination with or oversight by the central Homeland Security Human Capital office (personal communication, March 18, 2008). Furthermore, TSA actively works to protect its flexibilities from intrusion by central Homeland Security policies.

In light of the high-stress work environment and the lack of an institutionalized human capital function, it is not surprising that perceptions of procedural justice among TSA employees were low in 2005. TSA human capital officials, GAO analysts participating in audits of TSA, and union representatives were asked about perceptions in the area of bias suppression, consistency, and correctability, as was done with the NASA officials. Based on the information provided, it is difficult for the researcher to determine if the challenges faced by TSA in improving perceptions of fairness are due more to the newness of the agency (i.e. with the establishment of policies and appropriate levels of training the problems will work themselves out) or if they are due to incompetent and unaccountable management using security concerns as an excuse for arbitrary activities.



Problems relating to bias suppression in TSA were attributed to a number of factors by the interviewees. At one level, changes to operating procedures are driven, in part, by security concerns. These security warnings can not always be made public to staff or customers. The lack of transparency leads some people to assume that bias drives decisionmaking. Additionally, one human capital official suggested that, because TSA works outside of normal federal personnel rules, staff assume management is inherently biased without the traditional protections in place. The same human capital official perceived that some problems arise because airport managers, with prior experience only in the private sector, are unaware of public sector management expectations. Likewise, it was claimed by other interviewees that managers in general seem to lack knowledge of TSA human capital management policies, which leads them to engage in what is perceived to be biased treatment. Because of the highly decentralized management structure at TSA, union representatives reported the perception that managers are not held accountable for acts of bias against employees and the flying public, except in extreme circumstances.

Union representatives consistently provided examples of bias influencing the performance appraisal process. Screeners receive annual performance appraisals which directly influence pay and determine if they can continue employment with the agency. NTEU and AFGE representatives indicated that the perception that bias influences the appraisal process is widespread. Bias emerges in the form of prejudice, personal favoritism, or negative marks for those who publicly disagree with management on a particular issue or event. The problem is compounded by minimal documentation requirements and having individuals other than the immediate supervisors conduct the appraisals.

Human capital officials are aware of the perceptions of bias because of the number of appeals of performance ratings. Guidelines for holding disciplinary conversations with

employees reportedly instruct managers to determine if problems are due to inadequate training, an environmental conflict, such as a conflict with another screener, or if the problem is related to low levels of motivation to perform at expected levels. They reported that in 2005 headquarters began offering training for managers on avoiding bias, managing conflict, and improving interpersonal management skills. However, they acknowledged that all managers are not required to take the training and that some airport locations have sent none of their managers for the sessions.

The consistency of decisionmaking is seen as a problem for many of the same reasons bias is perceived. Because security threats can not be revealed to staff to justify policy or management changes, GAO analysts suggested that screeners are likely to view management as inconsistent. Although the human capital office in headquarters may be rolling out policies to make management more consistent, it is difficult to know if local airport officials read or are even aware of the policies. The training begun in 2005 is intended to address this problem. However, frequent management turnover makes consistent decisionmaking more challenging. Once a manager learns TSA policy, they frequently leave for another organization, and incoming managers have constraints on time available for learning the regulations. The lack of institutional memory results in there being few resources available to managers who want to make fair decisions.

One human capital official noted that difficulty with achieving consistency on decisionmaking can be partially attributable to TSA having no human capital infrastructure in place at the time the screeners were hired; they are continuing to work “to get all those things in place that can help ensure consistency across the airports” (personal communication, March 18,

2008). However, one GAO analyst noted that the “damage has already been done” in terms of establishing expectations for fair management (personal communication, March 21, 2008).

A number of specific examples of the lack of consistency of decisionmaking were provided. For example, human capital officials said TSA has not established a table of disciplinary actions for managers to take to ensure responses are consistent across individuals and consistent with the concept of progressive discipline. This is a deliberate decision by central human capital officials to allow local managers the flexibility to assign discipline appropriate for the infraction.

An NTEU representative provided three examples of inconsistent treatment by managers (personal communication, March 21, 2008). First, if an individual does not bring their security badge with them to work, some are sent home to retrieve the badge before being allowed to begin work while others are allowed to work on tasks in areas of the airport that do not require the security documentation. Second, arriving late for work has a significant impact on annual performance appraisal ratings. Some individuals who arrive 15 minutes late are penalized while others are not. The perception is that the response depends on the individual’s relationship with management. Third, management is known for changing work schedules, sometimes given very little notice of the change. For example, people have been known to arrive at the airport for work, only to find out their schedule was changed so that they may be working later in the day or not at all.

More serious charges of inconsistency were raised by an AFGE representative (personal communication, March 26, 2008). First, it was suggested that employees frequently complete required training on their own time due to understaffing. To meet passenger volume, managers keep employees on screening duty instead of allowing them to complete training. This is

consistent with the findings of the GAO report summarized above (U.S. Government Accountability Office 2005). Second, and more troubling, was the claim that airport managers, many of whom are former employees of the airlines, are willing to bypass normal procedures for screening passengers so that individuals can pass through the security checkpoints in time to make their flights. This claim was echoed by an NTEU representative, who described it as “bending the rules to get passengers through” (personal communication, March 18, 2008).

TSA employees do not have the lowest perceptions in government that decisions in the agency can be corrected. In fact, of the Leventhal dimensions, the average correctability score is higher than the average on four other dimensions. Many interviewees claimed that TSA performs better on this dimension because the agency knows that it will make mistakes and that the mistakes will be fixed. Policy decisions are changed in reaction to both security concerns and lessons learned. Human capital officials provided a number of examples of agency actions to address problems. For example, local airports can appeal staffing levels determined by headquarters. A new conflict management program is being pilot tested at a select number of airports currently which allows for a local panel of three screeners and two managers to hear complaints before matters become formal appeals. Furthermore, the TSA National Advisory Council includes line employees, and brings the attention of management to recurring problems.

Despite these actions, union representatives did identify problems. Specifically, some employees feel it is difficult to change decisions because they fear intimidation and retaliation. Note the comment above regarding performance appraisal implication for disagreeing with management. Additionally, many employees lack knowledge about the grievance process. As a result, those who would otherwise be likely to file complaints, are not aware of the time limits on filing the complaints and other regulations. One GAO analyst suggested that the degree of

decentralization enables “managers to do more to suppress things” (personal communication, March 21, 2008).

TSA is clearly challenged in the areas of bias suppression and consistency, but is performing slightly better in the area of the correctability of decisions. However, it is important to take a step back from the Leventhal dimensions and assess the larger picture of management at the agency. Based on the survey results, the information provided by interviewees, and a review of news reports and government audits, it seems apparent that TSA lacked a culture of accountability in 2005, the time of the survey. Despite significant levels of oversight from the press, Congress, and the public, the treatment of employees at the time of the survey and the publicized problems with contract management indicate a pattern. The level of decentralization allows local airport security officers to manage with little responsibility for following central policies. This is compounded by not requiring that they all complete the training rolled-out in 2005. With no accountability for following central policy and incomplete training, it is not surprising to be told that practices across airports are not consistent.

This lack of accountability is manifested in three ways. First, frequent executive turnover means that no individual at the top of the organization is present long enough to hold local managers accountable for poor decisions. The absence of consistent leadership also means that no one is at the top to set the expectation that people will be held accountable, that decisions will be made according to established procedure, and that employees are to be treated fairly. High turnover also means that there is no institutional memory to know why decisions were made, or even what policies have already been put in place. Ironically, one of the longest-serving executive in TSA is the Assistant Administrator for Human Capital, Richard Whitford, in place since 2003. Only the General Counsel, Francine Kerner has served longer.

Second, it appears TSA uses security concerns as an excuse for making management decisions generally, and poor personnel decisions in particular. Granted, the security environment does change and actions and policies should change accordingly. Furthermore, it is reasonable to argue that the security concerns can not always be made public, making decisionmaking less transparent than in other environments. However, management should be accountable for those changes. Arguing that security concerns get in the way of fair treatment is not a reasonable argument in a public sector organization. Fair treatment can exist side by side with mission responsiveness.

Third, accountability problems are perpetuated by the lack of a human capital infrastructure in the agency. At the formation of TSA, the lack of rules for personnel management resulted in significant delegation of authority to local airport managers. They in turn, developed their own management styles, informed by previous professional experiences, and the expectation that headquarters would not interfere. It is not surprising to hear from interviewees that managers are not aware of what policies do exist. The frequent turnover of staff makes the lack of an infrastructure a larger problem because new staff are not aware of the policies, there is no one to ask for clarification, and thus the cycle of unaccountability continues unabated.

Hopefully the trends at TSA observed in the 2005 survey, news reports, and government audits are improving in today's organization. In terms of procedural fairness, the Leventhal dimensions provide a way forward to improve. Stable leadership at the top of the organization is likely to help improve the situation, in light of the significant challenges to meet congressional deadlines. For the sake of the more than 50,000 TSA employees and the traveling public, hopefully the agency can work through these challenges constructively and fairly.

## Discussion

The unique context of NASA and TSA contribute to the perceptions of procedural justice determinants, as described by officials familiar with both agencies. NASA's decisionmaking environment is characterized by a high degree of transparency. The nature of the work is highly process-oriented. Unions and management work to resolve concerns before matters become formal complaints. Although NASA is at the top of the federal government in terms of fairness perceptions, that does not mean that everything runs smoothly in the eyes of employees.

TSA is highly troubled in terms of employee perceptions of procedural justice determinants. It is difficult to know if the unrest is due to the newness of the agency or if it is to be attributed to incompetent and unaccountable management. Because of its security-driven mission, decisionmaking can not be entirely transparent to employees, influencing perceptions that actions are arbitrary and biased. A lack of a human capital infrastructure at the time of the surveys and interviews meant that local airport leaders had minimal policies to guide their management of screeners, leading to inconsistent actions. However, since 2005, TSA implemented training programs and dispute resolution procedures to improve opportunities for correcting management decisions and increasing their consistency. Although feedback from the training was positive at the time of the interviews, it was not clear what impact it was having on day-to-day-management activities.

In addition to the findings on NASA and TSA, it is worth reflecting on the challenges of studying procedural justice and its determinants in the public sector and considering the operationalization of the Leventhal criteria in a qualitative method. Employees at NASA and TSA work in an environment that requires responsiveness. For example, NASA employees work in a project management environment that requires them to find solutions to difficult technical

problems that either have not been previously known as a problem or have not previously been fixed. This can-do attitude developed in the Apollo era of the agency and continues today, as evidenced by the response to the Columbia disaster in which scientists and engineers worked to find solutions to the foam separation problem and to repair damaged heat protection tiles. TSA, by its charter, must be responsive to changing security threats. Program decisions one week may be changed the next week as threats shift. As a result, both organizations are more organic, flexible, and reflective than the typical mechanistic, hierarchical, and stable federal bureaucracy.

Is it appropriate to assume the Leventhal criteria are *all* relevant in organizations that are more flexible and responsive than organizations in the past, or should some be retained, others abandoned, and still others added? Leventhal (1980) originally suggested that various dimensions may be more or less important, depending on the operating environment of the organization. It has been suggested that, in organic organizations, concerns about consistency and correctability may become less important as the organization becomes less interested in institutionalized procedures (Ambrose and Schminke 2001). For example, as organizational structure becomes more fluid and less hierarchical, is it appropriate to assume that employees should be treated in a one-size-fits all manner? Is it reasonable to expect agencies to have stable policies on grievances and appeals when project priorities and reporting relationships change more frequently than in the past? Similar questions are posed by Ambrose and Schminke (2001), as evidenced in the title of the piece: “Are Flexible Organizations the Death Knell for the Future of Procedural Justice.”

Based on the responses of the interviewees, it is clear that perceptions of correctability and consistency are powerful components of fairness perceptions. Multiple examples illustrated how the lack of consistency in decisionmaking and opportunities to correct problems influence employee perceptions of fairness. However, it does not appear we should throw out the baby with



the bath water. It may be time for procedural justice scholars to develop a measurement scheme that varies according to the degree of institutionalization or hierarchy in the organization, or the frequency of organizational change.

Admittedly, developing a measurement scheme that varies according to a particular organizational characteristic may be extremely difficult given the absolute dominance of quantitative, survey-driven methods in procedural justice research. Leventhal's (1980) contention that the importance of various dimensions will vary by context may best be operationalized by qualitative case studies, like the effort undertaken here. Across the procedural justice literature, it does not appear that the case study method has been used to identify which dimensions are more important in which contexts.

Case studies enable the researcher to move beyond a multiple choice question where people identify which dimension is more important to them, to understanding why the dimension is more or less critical and how it manifests itself in the organization. For example, in a public organization, is consistency and correctability more important to employees than in a private sector organization because of the judicialized nature of many human resources management practices? In an organization like TSA that is required to be responsive to security threats *and* operates under alternative personnel rules, does the need for flexibility reduce the importance of consistency, correctability, and accuracy? It is worth emphasizing here that Leventhal (1980) suggested various dimensions may be less important than others, not that some of the dimensions could be ignored or dropped altogether.

Procedural justice research does not provide guidance for determining which dimensions are more important than others. Nor does it provide hypotheses on which organizational traits may lead to emphases on different dimensions. The illustrative nature of the case studies here

does not enable such hypotheses to be proposed. To test the argument of Ambrose and Schminke (2001), cases would need to be selected based on some measure of stability, hierarchy, flexibility, and/or mission-driven responsiveness.

Scholarship would further benefit from the development of an adequate protocol for asking qualitative questions about the determinants of procedural justice. It was easy for individuals to understand the concepts of bias suppression, correctability, and consistency. However, the content of their answers could easily be attributed to multiple dimensions. Examples of bias indicated that decisions were not being made consistently. The use of informal avenues to correct poor decisions was driven by opportunities to voice concerns and present evidence in favor of the particular position. Perceptions that inaccurate information informed performance appraisal led to assumptions that the appraisal ratings were biased.

Overall, the case studies conducted here are unique to the procedural justice literature. Scholars do not typically move beyond survey data or controlled experiments to understand the unique organizational context informing the perceptions expressed. NASA and TSA both have distinctive procedural and cultural environments that contribute to the procedural justice indicators. Existing assessment tools should be evaluated for their applicability to changing organization and their usefulness for qualitative explorations. A more thorough review may result in improving the schemes for all types of analysis.

## CHAPTER 7

### THE INFLUENCE OF PROCEDURAL JUSTICE DETERMINANTS ON OTHER ATTITUDES AND BEHAVIORS

At this point, we now understand the perceptions of procedural justice determinants of federal employees. Both the case studies and quantitative analysis have revealed some clues as to what influences procedural justice perceptions and its determinants. It is now time to turn our attention toward understanding how procedural justice determinants influence other attitudes and behaviors that are important to organizations. The chapter will proceed as follows. First, descriptive statistics of the dependent variables will be presented. Next, discussion of the governmentwide models assesses the relationship between procedural justice determinants and other attitudes: turnover intentions, the propensity to engage in citizenship behavior, and satisfaction. Attention then turns towards assessing the differential effects of being a manager on these same three dependent variables. The differential effect of being a line employee who chooses to pay union dues on the relationship between procedural justice determinants and the three dependent variables is considered. The quantitative analysis closes with the examination of the relationship between procedural justice determinants in 2005 and the filing of complaints in 2006. Finally, the chapter concludes with a general discussion and suggestions for future research.

Association between the Leventhal Index, Turnover Intentions,  
Propensity to Engage in Citizenship Behavior, and Satisfaction

As noted previously, satisfaction, turnover intentions, and the willingness to engage in citizenship behavior are frequently identified as workplace attitudes that are related to perceptions of procedural justice (Cohen-Charash and Spector 2001; Colquitt et al., 2001). In particular, perceptions of fairness increase attitudes of satisfaction, increase the likelihood of engaging in citizenship behavior, and decrease an interest in leaving an organization. Before examining the models, it is important to first understand the level of satisfaction among federal employees in 2005, their intent to leave their organizations, and their willingness to engage in extra-role behavior.

*Descriptive Statistics for Dependent Variables*

The dependent variables were initially presented in Table 3.6, which indicated that turnover intentions was measured using a single survey question, the propensity to engage in citizenship behavior is measured using a two-item additive index, and that satisfaction is measured using a three-item additive index. More than half of federal employees indicate it is very *unlikely* they will leave their organization in the 12 months following the survey, compared to 10% who indicate it is very likely they will leave (Table 7.1). Over three-quarters of federal employees indicate a propensity to engage in citizenship behavior, with an index score of 5 or greater (mean = 5.706, range from 0 to 8) (Table 7.2). While just over 1% of federal employees indicate the lowest possible levels of satisfaction, almost 8% indicate levels of satisfaction at the top of the index (mean = 7.755, range from 0 to 12) (Table 7.3). More than 70% indicate high levels of satisfaction, as evidenced by an index score equal to or greater than 7.

As with the Leventhal Index and the individual Leventhal criteria, there are significant differences between employees and management, and between employees who choose to pay union dues and those who do not (Table 7.4). Large differences in satisfaction and the propensity to engage in citizenship behavior are present between employees and managers. A smaller difference exists between the two groups in the area of turnover intentions. This is not surprising considering numerous reports of the aging of the federal workforce overall. A similar pattern holds of the differences between those who choose to pay union dues and those who do not. Large differences exist in levels of satisfaction and the willingness to engage in citizenship behavior, while differences in turnover intentions are minimal. The difference of means results lend credibility to the contention that the groups differ in fundamental ways and are worth studying in-depth.

Table 7.1  
Descriptive Statistics for Turnover Intentions

	Proportion	Std. Error	Confidence Interval	
Very Unlikely	0.532	0.007	0.519	0.545
Somewhat Unlikely	0.108	0.004	0.100	0.116
Neither/Don't Know	0.132	0.004	0.123	0.141
Somewhat Likely	0.127	0.004	0.119	0.136
Very Likely	0.101	0.004	0.093	0.109

Table 7.2  
Descriptive Statistics for Propensity to Engage in Citizenship Behavior

Index Score 8 = high propensity	Proportion	Std. Error	Confidence Interval	
0	0.018	0.002	0.015	0.022
1	0.012	0.001	0.009	0.015
2	0.043	0.003	0.038	0.048

Index Score 8 = high propensity	Proportion	Std. Error	Confidence Interval	
3	0.041	0.002	0.037	0.046
4	0.115	0.004	0.107	0.123
5	0.120	0.004	0.112	0.128
6	0.331	0.006	0.319	0.343
7	0.117	0.004	0.109	0.126
8	0.202	0.005	0.192	0.213

Table 7.3  
Descriptive Statistics for Satisfaction

Index Score 12 = high levels of satisfaction	Proportion	Std. Error	Confidence Interval	
0	0.012	0.002	0.009	0.015
1	0.016	0.002	0.013	0.020
2	0.022	0.002	0.018	0.027
3	0.035	0.002	0.030	0.040
4	0.047	0.003	0.042	0.053
5	0.068	0.003	0.061	0.074
6	0.087	0.004	0.080	0.094
7	0.121	0.004	0.112	0.129
8	0.131	0.004	0.123	0.140
9	0.189	0.005	0.179	0.199
10	0.115	0.004	0.107	0.123
11	0.079	0.003	0.073	0.086
12	0.077	0.004	0.070	0.084

Table 7.4  
Difference of Means for the Dependent Variables

	Mean	Std. Error	Confidence Interval		<i>t</i> value
<i>Turnover Intentions</i>					
Employees	2.167	0.022	2.124	2.211	2.04
Managers	2.102	0.023	2.058	2.147	
Dues-Paying	2.064	0.046	1.974	2.153	2.23
Non-Dues Paying	2.176	0.021	2.135	2.216	
<i>Propensity to Engage in Citizenship Behavior</i>					
Employees	5.656	0.029	5.599	5.713	-7.58
Managers	5.956	0.027	5.903	6.009	
Dues-Paying	5.396	0.068	5.262	5.529	5.11
Non-Dues Paying	5.770	0.026	5.718	5.821	

	Mean	Std. Error	Confidence Interval		<i>t</i> value
<i>Satisfaction</i>					
Employees	7.635	0.044	7.549	7.721	-12.34
Managers	8.358	0.039	8.282	8.434	
Dues-Paying	7.873	0.040	7.795	7.952	6.62
Non-Dues Paying	7.183	0.096	6.994	7.372	

### *Governmentwide Turnover Intentions*

As expected, an increase in procedural justice determinants is associated with a decrease in the turnover intentions of federal employees (Table 7.5).<sup>19</sup> Recall from table 3.6 that turnover intentions are measured with one survey item with scores ranging from 1 to 5, with a 5 indicating someone is very unlikely to leave her agency in the next 12 months and 1 indicating that she is very likely to leave her agency in the next 12 months. This negative relationship is consistent with Hypothesis 3.1.3, and is consistent with previous research. The standardized coefficients allow researchers to compare the relative importance of the various independent variables. The variable with the largest relationship with turnover intentions is the Leventhal Index. A one standard deviation increase in the Leventhal Index is associated with a decrease of turnover intentions equal to 0.292 standard deviations. This is consistent with Hypothesis 3.1.3 which suggested a negative relationship would be observed. Additionally, this finding reflects existing research (Alexander and Ruderman, 1987; Dailey and Kirk, 1992).

<sup>19</sup> As noted in Chapter 3, the empirical models for the third research question are conducted using ordered logit, unless otherwise noted. The un-standardized coefficient is presented along with the p-value and two different standardized coefficients. The Y-standardized coefficient is interpreted in the following manner: “having a characteristic x results in an expected change in y of  $\beta$  standard deviations” (Long and Freese, 2006, p. 97). It is appropriate to use Y-standardized coefficients for the dichotomous demographic variables. The fully standardized coefficient is interpreted in the following manner: “for a standard deviation increase in x, y is expected to change by  $\beta$  standard deviations” (Long and Freese, 2006, p. 97).

Table 7.5  
Turnover Intentions I

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	-0.041***	0.000	-0.021	-0.292
Minorities	0.186***	0.002	0.097	0.042
Women	-0.194***	0.000	-0.100	-0.050
Completed Education	0.051**	0.030	0.026	0.034
Supervisors, Managers, Executives	-0.024	0.622	-0.013	-0.005
Union Dues	-0.209***	0.009	-0.108	-0.041
Field Office	-0.373***	0.000	-0.194	-0.075
Agency Tenure	0.000	0.935	0.000	-0.001
Salary in 1000s	0.001	0.587	0.000	0.012
Food Safety & Inspection Srv.	-0.437***	0.005	-0.227	-0.019
Forest Srv.	-0.088	0.563	-0.046	-0.006
Natural Resources Conservation Srv.	-0.644***	0.000	-0.334	-0.033
Agriculture Other	-0.127	0.379	-0.066	-0.011
Air Force	0.089	0.551	0.046	0.013
Corps of Engineers	0.126	0.367	0.065	0.012
Army Other	0.267*	0.079	0.139	0.039
Ntl. Inst. of Standards & Technology	-0.232	0.107	-0.120	-0.005
Ntl. Oceanic & Atmospheric Admin.	-0.705***	0.000	-0.365	-0.041
Patent & Trademark Ofc.	-0.206	0.137	-0.107	-0.008
Commerce Other	0.046	0.721	0.024	0.003
Def. Contract Management Agy.	0.198	0.169	0.103	0.009
Def. Finance and Accounting Srv.	0.540***	0.000	0.280	0.030
Def. Logistics Agy.	-0.101	0.489	-0.052	-0.006
Defense Other	0.232*	0.055	0.120	0.020
Education	0.008	0.956	0.004	0.000
Energy	0.004	0.976	0.002	0.000
Environmental Protection Agy.	-0.434***	0.007	-0.225	-0.024
Fed. Deposit Insurance Corp.	-0.337**	0.019	-0.175	-0.012
Public Building Srv.	-0.136	0.377	-0.071	-0.004
General Services Admin. Other	0.224	0.140	0.116	0.007
Ctr. for Disease Control & Prevention	-0.491***	0.002	-0.255	-0.017
Indian Health Srv.	0.042	0.809	0.022	0.002
Ntl. Institutes of Health	0.396**	0.013	0.205	0.016
Health & Human Srv. Other	-0.124	0.372	-0.064	-0.008
Customs & Border Protection	0.091	0.540	0.047	0.006
Immigration & Customs Enforcement	0.133	0.355	0.069	0.006
Fed. Emergency Management Agy.	0.299**	0.027	0.155	0.006
Transportation Security Admin.	0.733***	0.000	0.380	0.049
Coast Guard	0.306*	0.051	0.159	0.008
Secret Service	-0.240*	0.087	-0.124	-0.006
Homeland Security Other	-0.093	0.690	-0.048	-0.002
Housing and Urban Dvlpmt.	-0.023	0.898	-0.012	-0.001
Bureau of Land Management	-0.165	0.251	-0.086	-0.007



	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Indian Affairs	0.075	0.673	0.039	0.002
Ntnl. Parks Srv.	-0.350**	0.018	-0.182	-0.018
Interior Other	0.022	0.878	0.011	0.002
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.644***	0.000	-0.334	-0.020
Bureau of Prisons	-0.477***	0.003	-0.248	-0.023
Drug Enforcement Admin.	-0.386**	0.018	-0.200	-0.014
Exec. Ofc. of the U.S. Attorney	-0.131	0.572	-0.068	-0.003
Justice Other	-0.090	0.483	-0.047	-0.009
Veterans Health Admin.	-0.058	0.701	-0.030	-0.010
Ntnl. Aeronautics & Space Admin.	-0.152	0.295	-0.079	-0.010
Social Security Admin.	-0.327**	0.033	-0.169	-0.037
Marine Corps.	0.098	0.486	0.051	0.004
Navy Other	0.090	0.564	0.047	0.012
Ofc. of Personnel Management	0.222	0.103	0.115	0.007
State	-0.205	0.227	-0.106	-0.009
Fed. Aviation Admin.	-0.331*	0.057	-0.172	-0.027
Transportation Other	-0.189	0.183	-0.098	-0.009
Internal Revenue Srv.	-0.238	0.139	-0.124	-0.030
Ofc. of the Comptroller of the Currency	-0.536***	0.000	-0.278	-0.014
Treasury Other	-0.171	0.238	-0.089	-0.008
Veterans Benefits Admin.	-0.220	0.140	-0.114	-0.011
Veterans Other	-0.025	0.863	-0.013	-0.001
Observations	24357		Pseudo R2 <sup>20</sup>	0.694
* significant at 10%, **significant at 5%; *** significant at 1%				

It is further clear that the agency of the respondent plays a larger role than some of the demographic characteristics of respondents. First, a joint F-test was conducted to determine if the agency variables as a group are valuable in explaining turnover intentions; F-test results indicate that the agencies as a group explain a significant portion of turnover intentions. Overall, employees of the Office of the Comptroller of the Currency have turnover intentions that are 0.278 standard deviations lower than employees at the Department of Labor (the base agency), while minorities exhibit turnover intentions that are 0.097 standard deviations higher than non-minority employees, all else being equal. Likewise, TSA employees have turnover intentions that

<sup>20</sup> The pseudo R-squares displayed here and in the remaining tables are the McKelvey and Zavonia R squared. It represents the proportion of the variance accounted for in the model.

are 0.380 standard deviations higher than employees at the Department of Labor, while employees working in field offices exhibit turnover intentions that are 0.194 standard deviations lower than those working in headquarters, all else being equal.

When regressing the six individual Leventhal criteria against turnover intentions, a number of interesting findings are realized (Table 7.6). First, the dimensions of voice, correctability, and bias suppression are not significant. The lack of significance of the dimension of voice is particularly surprising. Those not operationalizing procedural justice with the full set of Leventhal criteria typically use only a measure of voice opportunities as the indicator for procedural justice (Colquit, et al., 2001). The remaining three dimensions are significant and are in the predicted direction. Based on the standardized coefficients, it is also clear that perceptions of ethicality, consistency, and accuracy have the largest relationship with turnover intentions, all else being equal. A one standard deviation increase in perceptions that decisions are ethical results in a 0.127 standard deviation decrease in turnover intentions.

Table 7.6  
Turnover Intentions II

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Bias Suppression	-0.026*	0.071	-0.014	-0.042
Correctability	0.002	0.894	0.001	0.002
Voice	-0.020	0.221	-0.010	-0.031
Consistency	-0.071***	0.000	-0.037	-0.106
Accuracy	-0.029**	0.028	-0.015	-0.045
Ethicality	-0.093***	0.000	-0.048	-0.127
Minorities	0.170***	0.005	0.088	0.039
Women	-0.179***	0.001	-0.093	-0.046
Completed Education	0.059**	0.012	0.030	0.039
Supervisors, Managers, Executives	-0.031	0.529	-0.016	-0.006
Union Dues	-0.218***	0.006	-0.113	-0.043
Field Office	-0.383***	0.000	-0.199	-0.077

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Agency Tenure	0.000	0.933	0.000	-0.001
Salary in 1000s	0.001	0.493	0.000	0.014
Food Safety & Inspection Srv.	-0.440***	0.005	-0.228	-0.019
Forest Srv.	-0.088	0.567	-0.046	-0.006
Natural Resources Conservation Srv.	-0.665***	0.000	-0.344	-0.034
Agriculture Other	-0.132	0.360	-0.069	-0.012
Air Force	0.103	0.492	0.053	0.015
Corps of Engineers	0.150	0.284	0.078	0.014
Army Other	0.267*	0.081	0.138	0.039
Ntnl. Inst. of Standards & Technology	-0.247*	0.085	-0.128	-0.005
Ntnl. Oceanic & Atmospheric Admin.	-0.708***	0.000	-0.367	-0.041
Patent & Trademark Ofc.	-0.208	0.137	-0.108	-0.008
Commerce Other	0.053	0.680	0.028	0.004
Def. Contract Management Agy.	0.202	0.165	0.104	0.009
Def. Finance and Accounting Srv.	0.531***	0.000	0.275	0.029
Def. Logistics Agy.	-0.095	0.516	-0.049	-0.006
Defense Other	0.236*	0.053	0.122	0.021
Education	-0.004	0.976	-0.002	0.000
Energy	0.001	0.996	0.000	0.000
Environmental Protection Agy.	-0.410**	0.011	-0.212	-0.022
Fed. Deposit Insurance Corp.	-0.312**	0.031	-0.162	-0.011
Public Building Srv.	-0.141	0.361	-0.073	-0.004
General Services Admin. Other	0.232	0.129	0.120	0.008
Ctr. for Disease Control & Prevention	-0.483***	0.002	-0.250	-0.016
Indian Health Srv.	0.006	0.974	0.003	0.000
Ntnl. Institutes of Health	0.398**	0.014	0.206	0.016
Health & Human Srv. Other	-0.106	0.447	-0.055	-0.007
Customs & Border Protection	0.101	0.495	0.052	0.007
Immigration & Customs Enforcement	0.126	0.384	0.065	0.005
Fed. Emergency Management Agy.	0.296**	0.030	0.153	0.006
Transportation Security Admin.	0.719***	0.000	0.372	0.048
Coast Guard	0.308*	0.053	0.159	0.008
Secret Service	-0.211	0.136	-0.109	-0.005
Homeland Security Other	-0.082	0.729	-0.042	-0.002
Housing and Urban Dvlpmt.	-0.010	0.955	-0.005	0.000
Bureau of Land Management	-0.187	0.197	-0.097	-0.008
Indian Affairs	0.036	0.843	0.018	0.001
Ntnl. Parks Srv.	-0.377**	0.011	-0.195	-0.020
Interior Other	0.001	0.994	0.001	0.000
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.630***	0.000	-0.326	-0.020
Bureau of Prisons	-0.493***	0.002	-0.255	-0.024
Drug Enforcement Admin.	-0.361**	0.028	-0.187	-0.013
Exec. Ofc. of the U.S. Attorney	-0.136	0.562	-0.070	-0.003
Justice Other	-0.070	0.589	-0.036	-0.007
Veterans Health Admin.	-0.084	0.582	-0.043	-0.014
Ntnl. Aeronautics & Space Admin.	-0.140	0.339	-0.072	-0.009
Social Security Admin.	-0.293*	0.057	-0.152	-0.033

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Marine Corps.	0.083	0.556	0.043	0.004
Navy Other	0.072	0.645	0.037	0.010
Ofc. of Personnel Management	0.204	0.136	0.106	0.006
State	-0.193	0.260	-0.100	-0.009
Fed. Aviation Admin.	-0.318*	0.069	-0.165	-0.026
Transportation Other	-0.192	0.179	-0.099	-0.009
Internal Revenue Srv.	-0.213	0.188	-0.111	-0.027
Ofc. of the Comptroller of the Currency	-0.547***	0.000	-0.283	-0.014
Treasury Other	-0.171	0.237	-0.089	-0.008
Veterans Benefits Admin.	-0.207	0.170	-0.107	-0.011
Veterans Other	-0.042	0.775	-0.022	-0.001
Observations	24357		Pseudo R2	0.702

\* significant at 10%, \*\*significant at 5%; \*\*\* significant at 1%

### *Governmentwide Propensity to Engage in Citizenship Behavior*

As expected, an increase in procedural justice determinants is associated with an increase in the propensity to engage in citizenship behavior (Table 7.7). This finding is consistent with Hypothesis 3.1.2, which suggested just such a relationship and is consistent with the findings of other scholars (Moorman, 1991; Konovsky and Pugh, 1994; Choi, 2008). The standardized coefficients indicate that procedural justice determinants have a larger relationship with the dependent variable than any of the demographic or agency controls. Specifically, a one standard deviation increase in the Leventhal Index is associated with a 0.588 standard deviation increase in the propensity to engage in citizenship behavior.

Like the turnover model, the role of an individual's agency is an important contributor. A joint F-test indicates that agencies as a group contribute to one's propensity to engage in citizenship behavior. Again, being employed in particular agencies often has a larger relationship with the dependent variable. For example, the propensity of minorities to engage in citizenship behavior is 0.120 standard deviations higher than non-minorities, while the propensity of

employees at the Forest Service to engage in organizational citizenship behavior is 0.387 standard deviations lower than those at the Department of Labor. Managers exhibit a propensity to engage in this activity at a rate 0.035 standard deviations higher than non-managers, while the willingness of Secret Service employees to engage in citizenship behavior is 0.114 standard deviations higher than those in Labor.

Table 7.7  
Propensity to Engage in Citizenship Behavior I

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	0.097***	0.000	0.042	0.588
Minorities	0.274***	0.000	0.120	0.052
Women	0.112**	0.033	0.049	0.024
Completed Education	-0.065***	0.003	-0.029	-0.036
Supervisors, Managers, Executives	0.080*	0.078	0.035	0.013
Union Dues	-0.035	0.646	-0.015	-0.006
Field Office	-0.013	0.841	-0.006	-0.002
Agency Tenure	-0.013***	0.000	-0.006	-0.056
Salary in 1000s	-0.001	0.345	0.000	-0.013
Food Safety & Inspection Srv.	-0.070	0.607	-0.030	-0.003
Forest Srv.	-0.884***	0.000	-0.387	-0.053
Natural Resources Conservation Srv.	-0.139	0.308	-0.061	-0.006
Agriculture Other	-0.141	0.313	-0.062	-0.011
Air Force	0.118	0.415	0.051	0.014
Corps of Engineers	-0.368***	0.007	-0.161	-0.029
Army Other	0.085	0.567	0.037	0.011
Ntnl. Inst. of Standards & Technology	-0.195	0.215	-0.085	-0.004
Ntnl. Oceanic & Atmospheric Admin.	0.111	0.376	0.049	0.005
Patent & Trademark Ofc.	-0.557***	0.000	-0.244	-0.019
Commerce Other	-0.179	0.158	-0.078	-0.011
Def. Contract Management Agy.	-0.657***	0.000	-0.287	-0.024
Def. Finance and Accounting Srv.	-0.229*	0.092	-0.100	-0.011
Def. Logistics Agy.	-0.022	0.877	-0.010	-0.001
Defense Other	-0.102	0.395	-0.045	-0.008
Education	-0.379***	0.006	-0.166	-0.011
Energy	-0.325**	0.018	-0.142	-0.015
Environmental Protection Agy.	0.046	0.765	0.020	0.002
Fed. Deposit Insurance Corp.	-0.065	0.616	-0.028	-0.002
Public Building Srv.	0.463***	0.002	0.202	0.012
General Services Admin. Other	0.139	0.355	0.061	0.004

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Ctr. for Disease Control & Prevention	-0.608***	0.000	-0.266	-0.017
Indian Health Srv.	0.064	0.687	0.028	0.002
Ntnl. Institutes of Health	-0.336**	0.040	-0.147	-0.012
Health & Human Srv. Other	-0.183	0.202	-0.080	-0.010
Customs & Border Protection	-0.084	0.563	-0.037	-0.005
Immigration & Customs Enforcement	-0.501***	0.001	-0.219	-0.018
Fed. Emergency Management Agy.	-0.498***	0.000	-0.218	-0.009
Transportation Security Admin.	-0.420**	0.019	-0.183	-0.024
Coast Guard	-0.084	0.580	-0.037	-0.002
Secret Service	0.261*	0.061	0.114	0.006
Homeland Security Other	-0.087	0.628	-0.038	-0.002
Housing and Urban Dvlpmt.	-0.332*	0.063	-0.145	-0.010
Bureau of Land Management	-0.449***	0.000	-0.196	-0.016
Indian Affairs	-0.545***	0.004	-0.238	-0.010
Ntnl. Parks Srv.	-0.209	0.132	-0.091	-0.009
Interior Other	-0.165	0.226	-0.072	-0.010
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.581***	0.000	0.254	0.015
Bureau of Prisons	-0.063	0.669	-0.028	-0.003
Drug Enforcement Admin.	0.390**	0.011	0.170	0.012
Exec. Ofc. of the U.S. Attorney	0.752***	0.006	0.329	0.014
Justice Other	0.291**	0.020	0.127	0.024
Veterans Health Admin.	0.353**	0.020	0.154	0.050
Ntnl. Aeronautics & Space Admin.	0.112	0.439	0.049	0.006
Social Security Admin.	0.221	0.124	0.097	0.021
Marine Corps.	0.039	0.788	0.017	0.001
Navy Other	-0.422***	0.007	-0.184	-0.047
Ofc. of Personnel Management	-0.487***	0.000	-0.213	-0.012
State	-0.027	0.855	-0.012	-0.001
Fed. Aviation Admin.	-0.362**	0.024	-0.158	-0.025
Transportation Other	0.015	0.910	0.007	0.001
Internal Revenue Srv.	-0.436***	0.003	-0.191	-0.046
Ofc. of the Comptroller of the Currency	0.427***	0.001	0.187	0.009
Treasury Other	0.154	0.301	0.067	0.006
Veterans Benefits Admin.	0.010	0.941	0.005	0.001
Veterans Other	0.175	0.220	0.077	0.005
Observations	24357		Pseudo R2	0.912

\* significant at 10%, \*\*significant at 5%; \*\*\* significant at 1%

This model was also assessed by breaking out the individual Leventhal criteria (Table 7.8). Five of the six criteria are significantly related to the propensity to engage in citizenship behavior, with the exclusion of voice. Unexpectedly, perceptions of bias suppression have a

negative relationship with the dependent variable, while the other dimensions exhibit a positive relationship. As a result, an increase in perceptions that bias is suppressed in decisionmaking is associated with a decrease in the propensity to engage in citizenship behavior. Bias suppression, correctability, consistency, accuracy, and ethicality have the largest associations with a willingness to engage in citizenship behavior, as compared to the other demographic and agency variables. A one standard deviation increase in ethicality is associated with a 0.338 standard deviation increase in the propensity to engage in citizenship behavior. Likewise, a one standard deviation increase in the accuracy of decisionmaking is reflected in a 0.204 standard deviation increase in the dependent variable. Again, the agencies as a group are significantly related to a willingness to engage in citizenship behavior.

Table 7.8  
Propensity to Engage in Citizenship Behavior II

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Bias Suppression	-0.042***	0.007	-0.018	-0.056
Correctability	0.127***	0.000	0.055	0.137
Voice	0.027	0.114	0.012	0.034
Consistency	0.059***	0.000	0.025	0.073
Accuracy	0.155***	0.000	0.067	0.204
Ethicality	0.295***	0.000	0.127	0.338
Minorities	0.238***	0.000	0.103	0.045
Women	0.089*	0.096	0.038	0.019
Completed Education	-0.076***	0.001	-0.033	-0.042
Supervisors, Managers, Executives	0.063	0.171	0.027	0.010
Union Dues	-0.032	0.685	-0.014	-0.005
Field Office	-0.012	0.856	-0.005	-0.002
Agency Tenure	-0.012***	0.000	-0.005	-0.053
Salary in 1000s	-0.001	0.457	0.000	-0.011
Food Safety & Inspection Srv.	-0.074	0.580	-0.032	-0.003
Forest Srv.	-0.876***	0.000	-0.377	-0.052
Natural Resources Conservation Srv.	-0.143	0.296	-0.061	-0.006
Agriculture Other	-0.170	0.216	-0.073	-0.013
Air Force	0.059	0.681	0.026	0.007

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Corps of Engineers	-0.423***	0.002	-0.182	-0.033
Army Other	0.047	0.754	0.020	0.006
Ntnl. Inst. of Standards & Technology	-0.201	0.195	-0.087	-0.004
Ntnl. Oceanic & Atmospheric Admin.	0.129	0.307	0.055	0.006
Patent & Trademark Ofc.	-0.485***	0.001	-0.209	-0.016
Commerce Other	-0.196	0.123	-0.084	-0.011
Def. Contract Management Agy.	-0.685***	0.000	-0.295	-0.024
Def. Finance and Accounting Srv.	-0.260*	0.056	-0.112	-0.012
Def. Logistics Agy.	-0.061	0.670	-0.026	-0.003
Defense Other	-0.166	0.164	-0.071	-0.012
Education	-0.366***	0.008	-0.158	-0.010
Energy	-0.380***	0.006	-0.164	-0.017
Environmental Protection Agy.	0.021	0.890	0.009	0.001
Fed. Deposit Insurance Corp.	-0.107	0.404	-0.046	-0.003
Public Building Srv.	0.394***	0.009	0.170	0.010
General Services Admin. Other	0.115	0.441	0.050	0.003
Ctr. for Disease Control & Prevention	-0.642***	0.000	-0.277	-0.018
Indian Health Srv.	0.005	0.976	0.002	0.000
Ntnl. Institutes of Health	-0.371**	0.024	-0.160	-0.013
Health & Human Srv. Other	-0.238*	0.100	-0.103	-0.013
Customs & Border Protection	-0.117	0.421	-0.050	-0.007
Immigration & Customs Enforcement	-0.604***	0.000	-0.260	-0.021
Fed. Emergency Management Agy.	-0.515***	0.000	-0.222	-0.009
Transportation Security Admin.	-0.528***	0.003	-0.227	-0.030
Coast Guard	-0.127	0.402	-0.055	-0.003
Secret Service	0.181	0.181	0.078	0.004
Homeland Security Other	-0.209	0.248	-0.090	-0.004
Housing and Urban Dvlpmt.	-0.353**	0.045	-0.152	-0.010
Bureau of Land Management	-0.463***	0.000	-0.199	-0.017
Indian Affairs	-0.575***	0.002	-0.248	-0.010
Ntnl. Parks Srv.	-0.257*	0.062	-0.111	-0.011
Interior Other	-0.215	0.114	-0.093	-0.013
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.515***	0.000	0.222	0.013
Bureau of Prisons	-0.127	0.394	-0.055	-0.005
Drug Enforcement Admin.	0.324**	0.032	0.140	0.010
Exec. Ofc. of the U.S. Attorney	0.706***	0.009	0.304	0.013
Justice Other	0.222*	0.077	0.095	0.018
Veterans Health Admin.	0.285*	0.059	0.123	0.040
Ntnl. Aeronautics & Space Admin.	0.050	0.727	0.022	0.003
Social Security Admin.	0.188	0.189	0.081	0.018
Marine Corps.	0.012	0.933	0.005	0.000
Navy Other	-0.468***	0.003	-0.201	-0.051
Ofc. of Personnel Management	-0.508***	0.000	-0.219	-0.013
State	-0.090	0.541	-0.039	-0.003
Fed. Aviation Admin.	-0.362**	0.028	-0.156	-0.024
Transportation Other	-0.032	0.816	-0.014	-0.001
Internal Revenue Srv.	-0.488***	0.001	-0.210	-0.051



	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Ofc. of the Comptroller of the Currency	0.332***	0.008	0.143	0.007
Treasury Other	0.121	0.415	0.052	0.005
Veterans Benefits Admin.	-0.049	0.722	-0.021	-0.002
Veterans Other	0.148	0.306	0.064	0.004
Observations	24357		Pseudo R2	0.918

\* significant at 10%, \*\*significant at 5%; \*\*\* significant at 1%

### *Governmentwide Satisfaction and Procedural Justice Perceptions*

As procedural justice determinants increase, levels of satisfaction increase (Table 7.9). This is consistent with Hypothesis 3.1.1 which suggested just such a relationship and reflects the findings of existing research (Alexander and Ruderman, 1987; Fryxel and Gordon, 1989; Sweeney and McFarlin, 1997). Analysis of the standardized coefficients reveals that the Leventhal Index exhibits the largest association with levels of satisfaction, as compared to the demographic and agency-specific variables. Specifically, a one standard deviation increase in the Leventhal Index is associated with a 0.852 standard deviation increase in satisfaction.

Table 7.9  
Satisfaction I

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	0.212***	0.000	0.062	0.852
Minorities	0.222***	0.000	0.065	0.028
Women	0.001	0.987	0.000	0.000
Completed Education	-0.061***	0.003	-0.018	-0.022
Supervisors, Managers, Executives	-0.050	0.246	-0.015	-0.005
Union Dues	-0.058	0.439	-0.017	-0.006
Field Office	0.143**	0.027	0.042	0.016
Agency Tenure	-0.004	0.158	-0.001	-0.011
Salary in 1000s	-0.001	0.253	0.000	-0.008
Food Safety & Inspection Srv.	0.085	0.531	0.025	0.002
Forest Srv.	-0.041	0.775	-0.012	-0.002

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Natural Resources Conservation Srv.	-0.096	0.492	-0.028	-0.003
Agriculture Other	-0.071	0.605	-0.021	-0.004
Air Force	-0.101	0.475	-0.029	-0.008
Corps of Engineers	-0.413***	0.001	-0.120	-0.022
Army Other	-0.230	0.135	-0.067	-0.019
Ntnl. Inst. of Standards & Technology	-0.051	0.727	-0.015	-0.001
Ntnl. Oceanic & Atmospheric Admin.	-0.227*	0.077	-0.066	-0.007
Patent & Trademark Ofc.	-0.422***	0.003	-0.123	-0.009
Commerce Other	-0.286**	0.023	-0.083	-0.011
Def. Contract Management Agy.	-0.342**	0.012	-0.100	-0.008
Def. Finance and Accounting Srv.	-0.259**	0.039	-0.075	-0.008
Def. Logistics Agy.	-0.107	0.435	-0.031	-0.004
Defense Other	-0.278**	0.018	-0.081	-0.014
Education	-0.138	0.316	-0.040	-0.003
Energy	-0.263*	0.064	-0.076	-0.008
Environmental Protection Agy.	-0.065	0.655	-0.019	-0.002
Fed. Deposit Insurance Corp.	0.074	0.570	0.022	0.002
Public Building Srv.	-0.001	0.993	0.000	0.000
General Services Admin. Other	-0.175	0.219	-0.051	-0.003
Ctr. for Disease Control & Prevention	-0.429***	0.006	-0.125	-0.008
Indian Health Srv.	0.279*	0.077	0.081	0.006
Ntnl. Institutes of Health	-0.220	0.140	-0.064	-0.005
Health & Human Srv. Other	-0.216	0.138	-0.063	-0.008
Customs & Border Protection	-0.297*	0.059	-0.086	-0.011
Immigration & Customs Enforcement	-0.240	0.122	-0.070	-0.006
Fed. Emergency Management Agy.	-0.233	0.104	-0.068	-0.003
Transportation Security Admin.	-0.165	0.336	-0.048	-0.006
Coast Guard	-0.084	0.559	-0.025	-0.001
Secret Service	0.135	0.313	0.039	0.002
Homeland Security Other	-0.389	0.102	-0.113	-0.006
Housing and Urban Dvlpmnt.	-0.250	0.196	-0.073	-0.005
Bureau of Land Management	-0.159	0.230	-0.046	-0.004
Indian Affairs	-0.311	0.105	-0.090	-0.004
Ntnl. Parks Srv.	-0.142	0.303	-0.041	-0.004
Interior Other	-0.283**	0.039	-0.082	-0.012
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.323**	0.017	0.094	0.006
Bureau of Prisons	0.132	0.341	0.038	0.004
Drug Enforcement Admin.	0.262*	0.095	0.076	0.005
Exec. Ofc. of the U.S. Attorney	-0.094	0.706	-0.027	-0.001
Justice Other	0.093	0.463	0.027	0.005
Veterans Health Admin.	0.148	0.297	0.043	0.014
Ntnl. Aeronautics & Space Admin.	-0.376***	0.006	-0.109	-0.014
Social Security Admin.	0.233*	0.093	0.068	0.015
Marine Corps.	-0.057	0.671	-0.017	-0.001
Navy Other	-0.413***	0.004	-0.120	-0.031
Ofc. of Personnel Management	-0.254*	0.058	-0.074	-0.004
State	-0.115	0.448	-0.033	-0.003

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Fed. Aviation Admin.	-0.022	0.887	-0.006	-0.001
Transportation Other	-0.095	0.490	-0.028	-0.002
Internal Revenue Srv.	-0.360**	0.012	-0.105	-0.025
Ofc. of the Comptroller of the Currency	-0.032	0.799	-0.009	-0.001
Treasury Other	0.062	0.658	0.018	0.002
Veterans Benefits Admin.	-0.038	0.783	-0.011	-0.001
Veterans Other	-0.066	0.651	-0.019	-0.001
Observations	24357		Pesudo R2	0.978

\* significant at 10%, \*\*significant at 5%; \*\*\* significant at 1%

In this model, only three of the demographic variables are significant, which is fewer than in either the models for turnover intentions or the propensity to engage in citizenship behavior. Like the other two models, the agencies as a group have a significant relationship with levels of satisfaction. Furthermore, being an employee in a particular agency has a larger influence on satisfaction than the demographic variables. For example, field employees have levels of satisfaction that are 0.042 standard deviations higher than employees in headquarters, while employees in the Social Security Administration exhibit levels of satisfaction that are 0.068 standard deviations higher than employees at Labor.

Similar results are achieved when assessing the relationship between the individual Leventhal criteria and levels of satisfaction (Table 7.10). In this iteration, all the criteria are significant and all exhibit a positive association with levels of satisfaction. Additionally, all the criteria have a larger relationship with satisfaction than any of the demographic or agency variables. The criterion with the largest association with satisfaction is ethicality; a one standard deviation increase in perceptions of ethicality is associated with a 0.391 standard deviation increase in satisfaction, all else being equal. Voice has the third-largest relationship with

satisfaction; a one standard deviation increase in voice perceptions is related to a 0.228 standard deviation increase in levels of satisfaction.

Table 7.10  
Satisfaction II

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Bias Suppression	0.144***	0.000	0.039	0.121
Correctability	0.049***	0.000	0.013	0.034
Voice	0.285***	0.000	0.078	0.228
Consistency	0.119***	0.000	0.032	0.093
Accuracy	0.161***	0.000	0.044	0.134
Ethicality	0.540***	0.000	0.147	0.391
Minorities	0.235***	0.000	0.064	0.028
Women	0.055	0.291	0.015	0.007
Completed Education	-0.087***	0.000	-0.024	-0.030
Supervisors, Managers, Executives	-0.008	0.852	-0.002	-0.001
Union Dues	0.009	0.901	0.003	0.001
Field Office	0.161**	0.012	0.044	0.017
Agency Tenure	-0.005*	0.098	-0.001	-0.012
Salary in 1000s	-0.001	0.419	0.000	-0.006
Food Safety & Inspection Srv.	0.005	0.970	0.001	0.000
Forest Srv.	-0.209	0.144	-0.057	-0.008
Natural Resources Conservation Srv.	-0.007	0.962	-0.002	0.000
Agriculture Other	-0.045	0.741	-0.012	-0.002
Air Force	-0.136	0.346	-0.037	-0.010
Corps of Engineers	-0.459***	0.000	-0.125	-0.023
Army Other	-0.207	0.181	-0.056	-0.016
Ntnl. Inst. of Standards & Technology	-0.087	0.561	-0.024	-0.001
Ntnl. Oceanic & Atmospheric Admin.	-0.144	0.274	-0.039	-0.004
Patent & Trademark Ofc.	-0.321**	0.025	-0.087	-0.007
Commerce Other	-0.251**	0.047	-0.069	-0.009
Def. Contract Management Agy.	-0.290**	0.035	-0.079	-0.007
Def. Finance and Accounting Srv.	-0.203	0.108	-0.055	-0.006
Def. Logistics Agy.	-0.040	0.766	-0.011	-0.001
Defense Other	-0.229*	0.052	-0.062	-0.011
Education	-0.165	0.241	-0.045	-0.003
Energy	-0.285**	0.048	-0.078	-0.008
Environmental Protection Agy.	-0.081	0.587	-0.022	-0.002
Fed. Deposit Insurance Corp.	-0.063	0.637	-0.017	-0.001
Public Building Srv.	-0.068	0.660	-0.019	-0.001
General Services Admin. Other	-0.167	0.257	-0.046	-0.003
Ctr. for Disease Control & Prevention	-0.461***	0.003	-0.126	-0.008
Indian Health Srv.	0.344**	0.032	0.094	0.007

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Ntnl. Institutes of Health	-0.235	0.127	-0.064	-0.005
Health & Human Srv. Other	-0.270*	0.074	-0.073	-0.009
Customs & Border Protection	-0.372**	0.020	-0.101	-0.013
Immigration & Customs Enforcement	-0.325**	0.039	-0.088	-0.007
Fed. Emergency Management Agy.	-0.182	0.213	-0.050	-0.002
Transportation Security Admin.	-0.205	0.235	-0.056	-0.007
Coast Guard	-0.112	0.440	-0.030	-0.002
Secret Service	0.129	0.336	0.035	0.002
Homeland Security Other	-0.405*	0.092	-0.110	-0.005
Housing and Urban Dvlpmt.	-0.194	0.324	-0.053	-0.004
Bureau of Land Management	-0.118	0.376	-0.032	-0.003
Indian Affairs	-0.263	0.179	-0.072	-0.003
Ntnl. Parks Srv.	-0.129	0.348	-0.035	-0.004
Interior Other	-0.278*	0.051	-0.076	-0.011
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.177	0.198	0.048	0.003
Bureau of Prisons	0.147	0.304	0.040	0.004
Drug Enforcement Admin.	0.227	0.135	0.062	0.004
Exec. Ofc. of the U.S. Attorney	-0.105	0.643	-0.029	-0.001
Justice Other	0.024	0.851	0.007	0.001
Veterans Health Admin.	0.134	0.354	0.036	0.012
Ntnl. Aeronautics & Space Admin.	-0.407***	0.004	-0.111	-0.014
Social Security Admin.	0.222	0.102	0.060	0.013
Marine Corps.	-0.044	0.746	-0.012	-0.001
Navy Other	-0.429***	0.003	-0.117	-0.030
Ofc. of Personnel Management	-0.271**	0.046	-0.074	-0.004
State	-0.200	0.192	-0.055	-0.005
Fed. Aviation Admin.	-0.160	0.301	-0.044	-0.007
Transportation Other	-0.046	0.745	-0.013	-0.001
Internal Revenue Srv.	-0.387***	0.009	-0.105	-0.025
Ofc. of the Comptroller of the Currency	-0.039	0.758	-0.011	-0.001
Treasury Other	0.104	0.467	0.028	0.003
Veterans Benefits Admin.	0.004	0.975	0.001	0.000
Veterans Other	-0.008	0.955	-0.002	0.000
Observations	24357		Pseudo R2	0.982

\* significant at 10%, \*\*significant at 5%; \*\*\* significant at 1%

As in the other models, the agency of the respondent plays a significant role in levels of satisfaction. Employees in the Centers for Disease Control and Protection have levels of satisfaction that are 0.126 standard deviations lower than those at the Department of Labor, the

base agency. However, those working at the Indian Health Service have levels of satisfaction that are 0.094 standard deviations higher than those at Labor.

### *Discussion*

When looking across the previous six models, a number of patterns begin to emerge and the results enable reflection upon the hypotheses once more. The Leventhal Index proved to be significant and in the suggested direction. Therefore, we can not reject the three hypotheses that constitute this component of the third research question. Namely, an increase in determinants of procedural justice perceptions is associated with an increased willingness to engage in organizational citizenship behavior, higher levels of satisfaction, and lower turnover intentions. This replicates existing research findings across multiple studies (Colquitt et al., 2001; Cohen Charash and Spector, 2001). When examining the individual Leventhal criteria, consistency, accuracy, and ethicality were significant in three of the models, whereas bias suppression and correctability were significant in two. The insignificance of voice in two of the models is troubling, as noted above. One potential explanation for this finding is that the voice index does not employ the exact survey items used by other scholars to capture this criterion.

Across the demographic variables, education, and minority status were significant in all of the models. Minority status displayed a positive association with the workplace attitudes, while education was negative in most instances. Attitudes of women were different from men in only three of the six models. Furthermore, supervisory status did not achieve significance in any of the models and payment of union dues was significant only in the turnover intentions model. These last two results suggest that results may not be significant in the next two parts of the third

research question when we examine the differences between employees and managers and unionized and non-unionized employees in more detail.

Additional trends exist regarding the significance of the agency of the respondents. Being an employee at the Centers for Disease Control and Protection was significant and negative in all six models. No other agency was significant across all six. Employees of Alcohol, Tobacco, Firearms and Explosives, the Drug Enforcement Administration, and the Office of Personnel Management were statistically different from those at the Department of Labor in five of the six models. However, the direction of the relationship changes according to the dependent variable.

#### Does Management Status Change the Relationship Between the Leventhal Index and Other Attitudes?

The second part of Research Question 3 will consider the added effect of being a manager on the relationship between procedural justice determinants and the dependent variables. Concerns about fair procedures are likely to be more salient depending on one's role in the organization, for example for those whose roles in the group requires them to enforce or monitor fairness (Leventhal 1980; Leventhal, Karuza and Fry 1980). Likewise, an individual's role in an organization, such as holding a management position, may provide them with additional voice opportunities and additional information on decision consistency, the level of bias suppression, and the quality of information used during decisionmaking. Despite this argument being presented nearly three decades ago, little effort has been made to test this theory.

As noted in Chapter 4, significant differences exist between managers and employees on the Leventhal Index, the Leventhal criteria, and the dependent variables. Managers' perceptions

are higher on every item except in the area of turnover intentions. Turnover intentions of employees are slightly higher than those of managers, but the difference is barely significant.

A review of Tables 7.5 through 7.10 reveals that management status is statistically significant in only the model assessing the propensity to engage in citizenship behavior which includes the Leventhal Index (Table 7.7). This is consistent with Hypothesis 3.2a which suggested a positive relationship would exist. However, the association between management status and the propensity to engage in citizenship behavior is weak; it is significant only at the  $p > 0.10$  level. Being a supervisor, manager, or executive does not achieve significance, even at the  $p > 0.10$  level, in the model in which the Leventhal criteria are presented individually, or for the other dependent variables. Despite the large sample and the t-tests indicating significant differences between managers and employees, managers' perceptions of satisfaction and their turnover intentions do not appear to be significantly different from line employees, when controlling for procedural justice determinants and other variables.

All of the models were assessed using an F-test to determine if including management status does a better job of explaining the dependent variable than a model without the management control. Including the management variable does slightly improve the model assessing the propensity to engage in citizenship behavior ( $p$  value = 0.078). Neither the turnover intentions model ( $p$  value = 0.622) nor the satisfaction model ( $p$  value = 0.247) is improved by including the management control. Given procedural justice determinants, other demographic characteristics, and agency of the respondent, management status is not associated with turnover intentions or satisfaction. This result is obtained despite the difference of means tests presented in Chapter 4. As a result of these (non)findings, the analysis will proceed by examining the significance of being a manager in the citizenship propensity model in more detail.



To assess the added effect of being a manager on the propensity to engage in citizenship behavior in more detail, management status will now be interacted with the Leventhal Index. The models are also considered for only managers and only line employees. The demographic and agency-specific variables remain in the models. Interpreting the interaction terms in models with categorical dependent variables requires a large amount of caution. Scholars have recently noted that relying on the sign and significance of the interacted term in basic output can be misleading (Ai and Norton, 2003; Norton, Wang and Ai, 2004; Brambor, Clarke, and Golder, 2006). Methods used to interpret interaction terms in linear models are not appropriate for non-linear models, like those considered here. Interpreting the marginal effects for the interaction term is also misleading because the sign and significance of the marginal effect will vary according to the values of the other independent variables: “the interaction model asserts that the effect of a change in X on Y depends on the condition of the [variable with which X is interacted]” (Brambor, Clark, and Golder, 2006, p. 73). Norton, Wang and Ai (2004, p. 156) go so far as to say: “[marginal effects] commands should never be used” when assessing the association between an interaction term and a categorical dependent variable.

Because the sign and significance of the interaction term and the marginal effects can be misleading, the analysis of the model assessing the propensity to engage in citizenship behavior will proceed as follows. It was originally proposed that the models would first be presented with the interaction term followed by the model results for only employees and only managers. Instead of interpreting the coefficients on the interaction terms, an F-test will be used to determine if the model with the interaction term does a better job of explaining the dependent variable than the model without the interaction term. Then, separate models for employees and managers will be presented. Presenting the models using only responses from employees or only responses from

managers enables evaluation of our variable of interest—the Leventhal Index—without the need to interpret an interaction term. This will allow for comparison of the coefficients (standardized and unstandardized), signs, significance, confidence intervals and marginal effects across the models by avoiding the problems noted above.

Including the interaction term in the model evaluating the propensity to engage in citizenship behavior is not an improvement over the model without the interaction term ( $p$  value = 0.499). To summarize, in the model assessing the propensity to engage in citizenship behavior, management on its own is slightly significant ( $p > 0.10$ ). Including management in the model with the individual Leventhal dimensions is not an improvement. Furthermore, including an interaction term in the model evaluating the propensity to engage in citizenship behavior is not an improvement. These findings are likely to be further reflected in the separate employee and manager models.

The Leventhal Index exhibits a significant association with the propensity to engage in citizenship behavior for both employees and managers (Table 7.11 and 7.12). Specifically, a one standard deviation increase in the Leventhal Index score of managers results in a 0.555 standard deviation increase in the propensity to engage in citizenship behavior. Likewise, a one standard deviation increase in the Leventhal Index score of employees results in a 0.590 standard deviation increase in the propensity to engage in citizenship behavior. However, a number of differences exist between the employee and management models. Gender is significant only in the managers' model, indicating differences in the propensity to engage in citizenship behavior among male and female managers, but not between male and female line employees. Furthermore, the agencies that are significant in the two models vary. Twenty-two agencies are

significant in the employee model and 26 are significant in the management model; they only have 11 significant agencies in common.

Table 7.11  
Propensity to Engage in Citizenship Behaviors for Managers Only

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	0.098***	0.000	0.044	0.555
Minorities	0.371***	0.000	0.167	0.067
Women	0.209***	0.000	0.094	0.043
Completed Education	-0.058**	0.029	-0.026	-0.031
Union Dues	-0.064	0.697	-0.029	-0.005
Field Office	-0.014	0.857	-0.006	-0.002
Agency Tenure	-0.002	0.480	-0.001	-0.010
Salary in 1000s	0.000	0.719	0.000	0.005
Food Safety & Inspection Srv.	-0.305*	0.061	-0.138	-0.012
Forest Srv.	-0.727***	0.000	-0.328	-0.053
Natural Resources Conservation Srv.	-0.282**	0.049	-0.127	-0.010
Agriculture Other	-0.289*	0.068	-0.130	-0.020
Air Force	-0.079	0.674	-0.036	-0.010
Corps of Engineers	-0.618***	0.000	-0.279	-0.093
Army Other	-0.081	0.639	-0.036	-0.010
Ntnl. Inst. of Standards & Technology	-0.718***	0.001	-0.324	-0.014
Ntnl. Oceanic & Atmospheric Admin.	0.048	0.743	0.022	0.002
Patent & Trademark Ofc.	-0.067	0.675	-0.030	-0.002
Commerce Other	-0.181	0.211	-0.082	-0.012
Def. Contract Management Agy.	-1.056***	0.000	-0.476	-0.029
Def. Finance and Accounting Srv.	-0.286*	0.088	-0.129	-0.011
Def. Logistics Agy.	-0.245	0.144	-0.110	-0.011
Defense Other	-0.352**	0.016	-0.159	-0.032
Education	-0.429**	0.020	-0.193	-0.010
Energy	-0.214	0.223	-0.096	-0.008
Environmental Protection Agy.	0.017	0.920	0.008	0.001
Fed. Deposit Insurance Corp.	-0.126	0.442	-0.057	-0.004
Public Building Srv.	0.316	0.127	0.142	0.008
General Services Admin. Other	-0.244	0.190	-0.110	-0.007
Ctr. for Disease Control & Prevention	-0.569***	0.001	-0.257	-0.012
Indian Health Srv.	-0.039	0.814	-0.017	-0.001
Ntnl. Institutes of Health	-0.731***	0.000	-0.330	-0.021
Health & Human Srv. Other	-0.246	0.186	-0.111	-0.011
Customs & Border Protection	-0.223	0.236	-0.100	-0.014
Immigration & Customs Enforcement	-0.711***	0.000	-0.320	-0.026
Fed. Emergency Management Agy.	-0.659***	0.003	-0.297	-0.012
Transportation Security Admin.	-0.310	0.156	-0.140	-0.020

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Coast Guard	-0.138	0.394	-0.062	-0.003
Secret Service	0.260*	0.088	0.117	0.007
Homeland Security Other	-0.520**	0.010	-0.234	-0.017
Housing and Urban Dvlpmt.	-0.992***	0.000	-0.447	-0.027
Bureau of Land Management	-0.334**	0.038	-0.151	-0.012
Indian Affairs	-0.676***	0.005	-0.305	-0.013
Ntnl. Parks Srv.	-0.402***	0.008	-0.181	-0.025
Interior Other	-0.236	0.140	-0.106	-0.016
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.615***	0.001	0.277	0.015
Bureau of Prisons	0.130	0.540	0.059	0.004
Drug Enforcement Admin.	0.267	0.152	0.120	0.009
Exec. Ofc. of the U.S. Attorney	-0.105	0.753	-0.047	-0.002
Justice Other	0.124	0.430	0.056	0.013
Veterans Health Admin.	0.072	0.672	0.032	0.009
Ntnl. Aeronautics & Space Admin.	-0.010	0.950	-0.005	0.000
Social Security Admin.	0.294*	0.064	0.133	0.021
Marine Corps.	0.013	0.940	0.006	0.001
Navy Other	-0.537***	0.007	-0.242	-0.055
Ofc. of Personnel Management	-0.802***	0.000	-0.361	-0.015
State	-0.076	0.673	-0.034	-0.004
Fed. Aviation Admin.	0.023	0.898	0.010	0.002
Transportation Other	-0.141	0.353	-0.063	-0.005
Internal Revenue Srv.	-0.549***	0.001	-0.247	-0.054
Ofc. of the Comptroller of the Currency	0.020	0.911	0.009	0.000
Treasury Other	0.025	0.877	0.011	0.001
Veterans Benefits Admin.	-0.092	0.580	-0.042	-0.003
Veterans Other	0.297*	0.078	0.134	0.007
Observations	11557		Pseudo R2	0.753

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 7.12  
Propensity to Engage in Citizenship Behavior for Employees Only

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	0.097***	0.000	0.042	0.590
Minorities	0.254***	0.000	0.110	0.049
Women	0.095	0.121	0.041	0.021
Completed Education	-0.068***	0.008	-0.030	-0.038
Union Dues	-0.025	0.759	-0.011	-0.004
Field Office	-0.019	0.804	-0.008	-0.003
Agency Tenure	-0.015***	0.000	-0.007	-0.064
Salary in 1000s	-0.001	0.311	0.000	-0.016

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Food Safety & Inspection Srv.	-0.017	0.916	-0.007	-0.001
Forest Srv.	-0.945***	0.000	-0.411	-0.055
Natural Resources Conservation Srv.	-0.109	0.486	-0.047	-0.005
Agriculture Other	-0.112	0.486	-0.049	-0.008
Air Force	0.159	0.344	0.069	0.019
Corps of Engineers	-0.152	0.390	-0.066	-0.008
Army Other	0.125	0.474	0.055	0.015
Ntnl. Inst. of Standards & Technology	-0.089	0.625	-0.039	-0.002
Ntnl. Oceanic & Atmospheric Admin.	0.131	0.360	0.057	0.007
Patent & Trademark Ofc.	-0.606***	0.000	-0.263	-0.021
Commerce Other	-0.185	0.215	-0.081	-0.011
Def. Contract Management Agy.	-0.611***	0.000	-0.266	-0.023
Def. Finance and Accounting Srv.	-0.210	0.171	-0.092	-0.010
Def. Logistics Agy.	0.019	0.907	0.008	0.001
Defense Other	-0.039	0.786	-0.017	-0.003
Education	-0.360**	0.022	-0.157	-0.010
Energy	-0.326**	0.036	-0.142	-0.016
Environmental Protection Agy.	0.065	0.708	0.028	0.003
Fed. Deposit Insurance Corp.	-0.050	0.733	-0.022	-0.002
Public Building Srv.	0.500***	0.004	0.217	0.013
General Services Admin. Other	0.219	0.211	0.095	0.006
Ctr. for Disease Control & Prevention	-0.600***	0.001	-0.261	-0.018
Indian Health Srv.	0.086	0.640	0.037	0.003
Ntnl. Institutes of Health	-0.279	0.129	-0.121	-0.010
Health & Human Srv. Other	-0.165	0.304	-0.072	-0.009
Customs & Border Protection	-0.065	0.704	-0.028	-0.004
Immigration & Customs Enforcement	-0.455***	0.007	-0.198	-0.016
Fed. Emergency Management Agy.	-0.463***	0.004	-0.201	-0.008
Transportation Security Admin.	-0.430**	0.044	-0.187	-0.024
Coast Guard	-0.073	0.686	-0.032	-0.002
Secret Service	0.244	0.150	0.106	0.005
Homeland Security Other	0.139	0.574	0.060	0.003
Housing and Urban Dvlpmt.	-0.227	0.266	-0.099	-0.007
Bureau of Land Management	-0.459***	0.002	-0.199	-0.017
Indian Affairs	-0.518**	0.019	-0.225	-0.009
Ntnl. Parks Srv.	-0.141	0.431	-0.061	-0.006
Interior Other	-0.149	0.349	-0.065	-0.009
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.588***	0.000	0.256	0.016
Bureau of Prisons	-0.082	0.616	-0.036	-0.003
Drug Enforcement Admin.	0.405**	0.024	0.176	0.012
Exec. Ofc. of the U.S. Attorney	0.856***	0.005	0.372	0.017
Justice Other	0.328**	0.028	0.143	0.026
Veterans Health Admin.	0.396**	0.020	0.172	0.058
Ntnl. Aeronautics & Space Admin.	0.147	0.370	0.064	0.009
Social Security Admin.	0.228	0.155	0.099	0.023
Marine Corps.	0.048	0.780	0.021	0.002
Navy Other	-0.399**	0.025	-0.174	-0.045

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Ofc. of Personnel Management	-0.443***	0.004	-0.192	-0.012
State	-0.037	0.843	-0.016	-0.001
Fed. Aviation Admin.	-0.465**	0.014	-0.202	-0.031
Transportation Other	0.044	0.778	0.019	0.002
Internal Revenue Srv.	-0.411**	0.016	-0.178	-0.044
Ofc. of the Comptroller of the Currency	0.482***	0.001	0.210	0.011
Treasury Other	0.180	0.294	0.078	0.007
Veterans Benefits Admin.	0.027	0.863	0.012	0.001
Veterans Other	0.165	0.310	0.072	0.005
Observations	12800		Pseudo R2	0.944

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

The marginal effects of the Leventhal Index in both the manager and employee model reveal interesting patterns and differences (Table 7.13). When predicting the probability that a respondent will indicate a score of either 2 or 4 (possible range 0 to 8) on the index measuring the propensity to engage in citizenship behavior, the effects of the Leventhal Index are not different for managers and employees; the confidence intervals overlap in both instances.<sup>21</sup> However, this changes when evaluating the probability that a respondent is more likely to engage in citizenship behavior. For an index score of 6, the marginal effects of the Leventhal Index become positive for employees, but remain negative for managers. In fact, the marginal effects are an equal distance from zero, but in different directions (-0.003 for managers and 0.003 for employees). A one unit change in the Leventhal Index for managers is associated with a 1.5% increase in the probability that someone will exhibit the highest citizenship propensity score, while the change for employees is 1.1% (the confidence intervals do not overlap). Only at the citizenship index score of 8 (the highest possible level) are the marginal effects for managers greater than for employees. The point at which the marginal effects change from positive to

<sup>21</sup> The index on the propensity to engage in citizenship behavior ranges from 0 to 8, with 8 indicating a high likelihood of engaging in citizenship behavior.

negative for employees and managers is different. Effects become positive for employees between the transition from an index score of 4 to 6, while the transition for managers happens in the transition from 6 to 8.

Overall, the results of the management analysis have been limited at best. Does being a manager have an added effect on the relationship between procedural justice determinants and other attitudes? The answer is a weak yes only for the model assessing the propensity to engage in citizenship behavior and a definite no for the turnover intentions and satisfaction models. Including a control for management status does not even improve the explanatory power of the satisfaction and turnover intention models. Perceptions of procedural justice determinants are important to both managers and employees, but the differences are minimal in light of the present results.

Table 7.13  
Marginal Effects of the Leventhal Index on the Propensity to Engage in Citizenship Behavior

	<i>Managers</i>	<i>Employees</i>
	Leventhal Index	Leventhal Index
Fully Standardized Coeff.	0.555	0.590
Std. Error	0.000	0.000
Index = 2	-0.002	-0.002
C.I.	-0.002, -0.001	-0.003, -0.002
Index = 4	-0.007	-0.008
C.I.	-0.008, -0.006	-0.009, -0.007
Index = 6	-0.003	0.003
C.I.	-0.004, -0.002	0.002, 0.005

Index = 8	0.015	0.011
C.I.	0.014, 0.016	0.010, 0.012

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C.I. is confidence interval.

Managers includes all supervisors, managers, and executives in the data set

Citizenship propensity index ranges from 0 to 8, with 8 indicating a high propensity to engage in citizenship behavior.

It is possible to explore another level of detail in the management models. In the analysis above, the manager variable combined respondents who self-identified as supervisors, managers, and executives into one general management category (Table 3.10). Perhaps the differences will be present when examining the groups in a more detailed fashion. For example, supervisors may have similar perceptions to employees while managers and executives may be different. Said another way, significant results may be canceled out when the three management tiers are combined into one.

The second stage of the management analysis will consist of the following steps. After presenting descriptive statistics, the turnover intention, citizenship propensity, and satisfaction models will be assessed using controls for supervisors, managers, and executives. F-tests will be used to determine if the models with the three tiers of management explain more of the variance in the dependent variables than models without the controls. Unfortunately it is not possible to consider separate models for employee respondents, supervisor respondents, manager respondents, and executive respondents because just over 700 respondents in the entire survey indicate they are executives, in addition to more than 6,700 supervisors and more than 4,100 managers. Because the model includes a total of 64 independent variables, a large number of which are agency controls, there is not enough data to analyze the perceptions of executives. The small size of the executive sample, relative to the number of independent variables results in no



variables achieving statistical significance. This is a small sample problem, not a no-results finding. However, it does mean that it is not possible, with the survey data employed here, to model executives' turnover intentions, satisfaction levels, or their propensity to engage in citizenship behavior. As a result, after discussion of the F-tests assessing the degree to which the three-tiered management designation improves the explanatory power of the models, the section will conclude with a discussion and prospects for future research.

First, there are differences between employee perceptions of procedural justice determinants and the three tiers of management. Generally, the higher one is located in the organizational hierarchy, the greater are the perceptions of fairness determinants. This is not surprising, considering those at the top of the organization have increasing degrees of control over decisionmaking, have more knowledge about the information used in decisionmaking, have increased opportunities for voice, etc. In particular, the average employee Leventhal Index score is 44.36 (s.e 0.220, c.i. 43.93 to 44.80). The average supervisor Leventhal Index score is 48.07 (s.e. 0.258, c.i. 47.56 to 48.57). Managers exhibit an average Leventhal Index score of 51.07 (s.e. 0.297, c.i. 50.49 to 51.66), while executives report an average Leventhal Index score of 52.37 (s.e. 0.626, c.i. 51.14 to 53.60). Only the confidence intervals for managers and executives overlap.

When the models for turnover intentions, the propensity to engage in citizenship behavior, and satisfaction are considered with supervisors, managers, and executives explicitly identified, more interesting results are obtained. As in the previous models, the other demographic variables and agency controls are also included in the analysis. Table 7.14 displays only the coefficients for the Leventhal Index and the management identifiers for each of the three dependent variables. The Leventhal Index remains highly significant in all three models. Being a

supervisor is significant in the turnover intentions model, but only at the  $p>0.10$  level, while managers and executives do not achieve significance. Supervisors exhibit turnover intentions that are 0.053 standard deviations lower than employees. In the model assessing the propensity to engage in citizenship behavior, managers and executives are both significant at the  $p>0.01$  level. The propensity of executives to engage in citizenship behavior is 0.164 standard deviations higher than employees; for managers, the propensity is 0.074 standard deviations higher. Satisfaction is also associated with being an executive at the  $p>0.05$  level and supervisors at the  $p>0.10$  level. Levels of satisfaction for executives are 0.080 standard deviations higher than employees, while satisfaction among supervisors is 0.024 standard deviations lower than employees. By identifying different levels of management, significant variations in perceptions are becoming more clear.

Table 7.14

Models Assessing Supervisor, Manager, and Executive Perceptions

	Unstandardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
<i>Turnover Intentions</i>				
Leventhal Index	-0.041***	0.000	-0.021	-0.293
Supervisors	-0.102*	0.062	-0.053	-0.016
Managers	0.080	0.245	0.041	0.010
Executives	0.193	0.165	0.100	0.009
<i>Propensity to Engage in Citizenship Behavior</i>				
Leventhal Index	0.097***	0.000	0.042	0.588
Supervisors	0.010	0.843	0.004	0.001
Managers	0.169***	0.008	0.074	0.018

	Unstandardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Executives	0.376***	0.007	0.164	0.014
<i>Satisfaction</i>				
Leventhal Index	0.211***	0.000	0.062	0.852
Supervisors	-0.083*	0.086	-0.024	-0.007
Managers	-0.030	0.607	-0.009	-0.002
Executives	0.275**	0.044	0.080	0.007

A series of F-tests was used to determine if including the three tiers of management variables improved upon the models without management controls. The turnover intentions model is improved by including the trio of management variables ( $p$  value = 0.022). Under the previous formulation, the comprehensive management control was not significant. One's propensity to engage in citizenship behavior is more effectively modeled including controls for the three levels of management ( $p$  value = 0.004). The level of significance is an improvement over the previous model (from  $p > 0.10$  to  $p > 0.01$ ). Likewise, the satisfaction model is better explained with the inclusion of the detailed management variables ( $p$  value = 0.039). This was not the case under the previous formulation.

Another series of F-tests assess the appropriateness of including different interaction terms. The turnover intention, citizenship propensity, and satisfaction models all include the Leventhal Index, supervisor identifier, management identifier, and executive identifier as the key independent variables in addition to other demographic and agency controls. Leventhal Index is interacted only with the management identifiers that were shown to be statistically significant (Table 7.14). An interaction term combining the Leventhal Index with being a supervisor was

added to the turnover intentions model. The results of the F-test indicate that including the interaction term in the turnover intentions model is not an improvement over the model with the three management tiers identified ( $p$  value = 0.534).

Being both a manager and an executive has a significant association with one's propensity to engage in citizenship behavior. The manager variable was interacted with the Leventhal Index and the executive variable was interacted with the Leventhal Index. For the purposes of the F-test, each was added to the model individually, and then they were jointly added to determine their utility as a group. The interaction term LI\*Manager does not improve the propensity to engage in citizenship behavior ( $p$  value = 0.864). Furthermore, the interaction term LI\*Executive also does not improve the citizenship propensity model ( $p$  value = 0.966). Likewise, including both LI\*Manager and LI\*Executive is also not an improvement over the base model ( $p$  value = 0.985).

Levels of satisfaction are associated with both being a supervisor and being an executive. The same testing procedure is used here as with the citizenship propensity model. Including the interaction term LI\*Supervisor in the satisfaction model is not preferable to the original model ( $p$  value = 0.463). However, adding the interaction term LI\*Executive is an improvement over the base satisfaction model ( $p$  value = 0.006).

### *Discussion*

Hypothesis 3.2a proposed that being a manager has an added positive effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions, while Hypothesis 3.2b proposed a negative association. These hypotheses were based on suggestions by Leventhal

(1980) and research findings of Walker and colleagues that one's position in an organization influences fairness perceptions. Similarly, it was noted that the theory of positional or instrumental proximity stipulates that individuals within the same hierarchical level in the organization exhibit similar attitudes, regardless of the frequency of interpersonal interaction (Brass, Galaskiewicz, Greve, and Tsai, 2004; Rice and Aydin, 1991). Overall, the findings presented here indicate that (a) management status is significant under certain circumstances, (b) it is important to differentiate between levels of management, and (c) the direction of the relationship varies according to the type of management position held. Importantly, procedural justice determinants matter to supervisors, managers, executives, and line employees. However, the degree to which managerial perceptions differ from line employees varies.

Identifying levels of leadership is an improvement over grouping them into one catch-all management category. Given the number of examples in which leadership status matters, we can not say that it is acceptable to ignore leadership status, as is the practice in existing procedural justice research. However, more testing is needed to understand the magnitude and significance of the differences. This can be easily accomplished by adding one simple question to surveys assessing procedural justice determinants. Potentially, no studies have assessed the importance of management status because preliminary analysis grouping multiple level of management into one category found no significant difference, as was the case in the satisfaction and turnover intention models presented here. The contribution of this analysis, despite the mixed results, highlights the importance of controlling for management status in a thoughtful way.

It is possible that differences between employees, supervisors, managers, and executives exist within individual agencies but are canceled out when combining multiple organizations into a governmentwide analysis. Such a finding would be consistent with the size of the

(standardized) associations between individual agencies and the dependent variables, some of which were relatively large, and in particular larger in magnitude than the demographic controls. When looking across organizations, agency culture may matter more than leadership status. By isolating particular agencies, differences in leadership status may emerge. Furthermore, it is possible that management status will matter in some organizations but not others. After analyzing multiple organizations, trends can identify characteristics of organizations across which the effect of management will vary. Particularly relevant to procedural justice, variations in goal ambiguity, levels of red tape, and/or hierarchy may play a role.

#### Does Paying Union Dues Change the Relationship Between the Leventhal Index and Other Attitudes?

The third part of the third research question examines the employee sub-sample more in-depth. Specifically, what differences if any, exist on the relationship between procedural justice determinants and other attitudes when comparing employees who choose to pay union dues and those who do not. In the federal government, only line employee positions are allowed to be included in bargaining units. Furthermore, federal unions operate in an open shop environment, i.e. employees make an affirmative choice to pay union dues and are not required to pay any amount of union dues, not even a nominal maintenance fee.

There is no research assessing the differences in the effect of procedural justice determinants between unionized and non-unionized employees. Differences could emerge for a number of reasons, including the fact that bargaining units are a sub-culture within the larger organization (Rainey, 2003). In an environment where unions do not bargain over pay, which is largely the case in the federal government, the major responsibility of the union is to influence procedures relating to grievance and performance appraisals, and ensuring employees have a

voice with management. Research considering procedural justice and unions typically focuses on the impact of procedural justice and its determinants on attitudes and behaviors directed towards the union and not the extent to which unionization may moderate the impact of procedural justice and its determinants on employer-directed attitudes and behaviors.

Analysis earlier in the dissertation revealed the many differences between dues-paying employees and non-dues paying employees on the key variables (Tables 7.4 and 4.8). Perceptions of procedural justice determinants between the two groups are different, with non-dues paying employees expressing higher perceptions of fairness (45.127 and 41.276). This pattern was repeated when examining the individual Leventhal criteria. Additional differences are present for the dependent variables. In particular, the propensity to engage in citizenship behavior is lower for dues-paying employees, while satisfaction levels are lower for non-dues paying employees.

The assessment of the unionization models will proceed in a manner similar to that of the management models. First, the base models with the union controls will be discussed. Then F-tests will be used to determine if the models are improved by the inclusion of the union controls. For those models that are improved, an interaction term is created and assessed for its efficacy. Finally, the models are run for dues-paying employees and non-dues-paying employees separately. Alternative specifications are considered, followed by a discussion of the findings overall.

The variable indicating an employee has chosen to pay union dues is significant in the turnover intentions model (Table 7.15), but is not significant in either the satisfaction model (Table 7.16) or the model indicating a propensity to engage in citizenship behavior (Table 7.12). A one standard deviation increase in an employee's Leventhal Index score is associated with a 0.296 standard deviation decrease in turnover intentions, all else being equal. The F-tests of the

models confirm this result. Specifically, turnover intentions are better explained with the inclusion of the union dues variable ( $p$  value = 0.016). However, paying unions dues does not help to explain either the propensity to engage in citizenship behavior ( $p$  value = 0.759) or levels of workplace satisfaction ( $p$  value = 0.435).

Table 7.15  
Turnover Intentions of All Line Employees

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	-0.041***	0.000	-0.021	-0.296
Minorities	0.194***	0.005	0.100	0.045
Women	-0.208***	0.001	-0.108	-0.054
Completed Education	0.053*	0.052	0.027	0.035
Union Dues	-0.205**	0.016	-0.106	-0.042
Field Office	-0.382***	0.000	-0.197	-0.077
Agency Tenure	-0.003	0.457	-0.001	-0.014
Salary in 1000s	0.000	0.677	0.000	0.010
Food Safety & Inspection Srv.	-0.490***	0.009	-0.253	-0.021
Forest Srv.	-0.024	0.896	-0.013	-0.002
Natural Resources Conservation Srv.	-0.654***	0.000	-0.338	-0.035
Agriculture Other	-0.134	0.420	-0.069	-0.012
Air Force	0.079	0.650	0.041	0.011
Corps of Engineers	0.047	0.782	0.024	0.003
Army Other	0.262	0.143	0.135	0.038
Ntnl. Inst. of Standards & Technology	-0.279*	0.097	-0.144	-0.006
Ntnl. Oceanic & Atmospheric Admin.	-0.738***	0.000	-0.381	-0.044
Patent & Trademark Ofc.	-0.195	0.212	-0.101	-0.008
Commerce Other	0.103	0.492	0.053	0.007
Def. Contract Management Agy.	0.180	0.269	0.093	0.008
Def. Finance and Accounting Srv.	0.512***	0.001	0.265	0.029
Def. Logistics Agy.	-0.118	0.477	-0.061	-0.008
Defense Other	0.214	0.136	0.111	0.018
Education	0.015	0.924	0.008	0.001
Energy	-0.015	0.931	-0.008	-0.001
Environmental Protection Agy.	-0.443**	0.014	-0.229	-0.025
Fed. Deposit Insurance Corp.	-0.336**	0.042	-0.173	-0.012
Public Building Srv.	-0.184	0.297	-0.095	-0.006
General Services Admin. Other	0.166	0.352	0.086	0.005
Ctr. for Disease Control & Prevention	-0.553***	0.002	-0.286	-0.020
Indian Health Srv.	0.013	0.949	0.007	0.001
Ntnl. Institutes of Health	0.397**	0.027	0.205	0.017



	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Health & Human Srv. Other	-0.152	0.330	-0.079	-0.010
Customs & Border Protection	0.156	0.360	0.081	0.010
Immigration & Customs Enforcement	0.148	0.377	0.076	0.006
Fed. Emergency Management Agy.	0.285*	0.068	0.147	0.006
Transportation Security Admin.	0.750***	0.000	0.387	0.049
Coast Guard	0.304	0.107	0.157	0.008
Secret Service	-0.228	0.171	-0.118	-0.006
Homeland Security Other	-0.165	0.634	-0.085	-0.004
Housing and Urban Dvlpmnt.	-0.039	0.852	-0.020	-0.001
Bureau of Land Management	-0.218	0.194	-0.113	-0.010
Indian Affairs	0.037	0.860	0.019	0.001
Ntnl. Parks Srv.	-0.394**	0.039	-0.203	-0.018
Interior Other	0.068	0.688	0.035	0.005
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.668***	0.000	-0.345	-0.021
Bureau of Prisons	-0.495***	0.005	-0.256	-0.025
Drug Enforcement Admin.	-0.433**	0.025	-0.224	-0.015
Exec. Ofc. of the U.S. Attorney	-0.158	0.535	-0.082	-0.004
Justice Other	-0.050	0.746	-0.026	-0.005
Veterans Health Admin.	-0.091	0.595	-0.047	-0.016
Ntnl. Aeronautics & Space Admin.	-0.166	0.315	-0.086	-0.012
Social Security Admin.	-0.313*	0.067	-0.162	-0.037
Marine Corps.	0.096	0.565	0.050	0.004
Navy Other	0.054	0.763	0.028	0.007
Ofc. of Personnel Management	0.194	0.206	0.100	0.006
State	-0.217	0.337	-0.112	-0.009
Fed. Aviation Admin.	-0.372*	0.069	-0.192	-0.030
Transportation Other	-0.206	0.210	-0.106	-0.009
Internal Revenue Srv.	-0.237	0.202	-0.123	-0.030
Ofc. of the Comptroller of the Currency	-0.546***	0.001	-0.282	-0.015
Treasury Other	-0.219	0.190	-0.113	-0.011
Veterans Benefits Admin.	-0.248	0.139	-0.128	-0.013
Veterans Other	-0.074	0.656	-0.038	-0.002
Observations	12800		Pseudo R2	0.795

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 7.16  
Satisfaction of All Line Employees

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	0.211***	0.000	0.061	0.852
Minorities	0.236***	0.000	0.068	0.030
Women	0.011	0.859	0.003	0.002

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Completed Education	-0.060**	0.013	-0.017	-0.022
Union Dues	-0.062	0.435	-0.018	-0.007
Field Office	0.176**	0.019	0.051	0.020
Agency Tenure	-0.004	0.212	-0.001	-0.011
Salary in 1000s	-0.001	0.307	0.000	-0.007
Food Safety & Inspection Srv.	0.103	0.517	0.030	0.003
Forest Srv.	-0.050	0.775	-0.015	-0.002
Natural Resources Conservation Srv.	-0.092	0.565	-0.027	-0.003
Agriculture Other	-0.045	0.778	-0.013	-0.002
Air Force	-0.102	0.539	-0.029	-0.008
Corps of Engineers	-0.499***	0.002	-0.144	-0.018
Army Other	-0.264	0.146	-0.076	-0.021
Ntnl. Inst. of Standards & Technology	0.105	0.533	0.030	0.001
Ntnl. Oceanic & Atmospheric Admin.	-0.198	0.174	-0.057	-0.007
Patent & Trademark Ofc.	-0.438***	0.006	-0.127	-0.010
Commerce Other	-0.267*	0.074	-0.077	-0.010
Def. Contract Management Agy.	-0.328**	0.032	-0.095	-0.008
Def. Finance and Accounting Srv.	-0.218	0.127	-0.063	-0.007
Def. Logistics Agy.	-0.087	0.578	-0.025	-0.003
Defense Other	-0.285**	0.042	-0.082	-0.014
Education	-0.109	0.485	-0.032	-0.002
Energy	-0.252	0.116	-0.073	-0.008
Environmental Protection Agy.	-0.039	0.812	-0.011	-0.001
Fed. Deposit Insurance Corp.	0.087	0.564	0.025	0.002
Public Building Srv.	-0.038	0.832	-0.011	-0.001
General Services Admin. Other	-0.123	0.456	-0.036	-0.002
Ctr. for Disease Control & Prevention	-0.401**	0.022	-0.116	-0.008
Indian Health Srv.	0.295	0.109	0.085	0.006
Ntnl. Institutes of Health	-0.187	0.267	-0.054	-0.005
Health & Human Srv. Other	-0.238	0.146	-0.069	-0.009
Customs & Border Protection	-0.343*	0.068	-0.099	-0.013
Immigration & Customs Enforcement	-0.184	0.313	-0.053	-0.004
Fed. Emergency Management Agy.	-0.138	0.396	-0.040	-0.002
Transportation Security Admin.	-0.112	0.583	-0.033	-0.004
Coast Guard	-0.097	0.571	-0.028	-0.001
Secret Service	0.073	0.657	0.021	0.001
Homeland Security Other	-0.532	0.138	-0.154	-0.006
Housing and Urban Dvlpmt.	-0.244	0.277	-0.071	-0.005
Bureau of Land Management	-0.153	0.319	-0.044	-0.004
Indian Affairs	-0.242	0.295	-0.070	-0.003
Ntnl. Parks Srv.	-0.109	0.534	-0.032	-0.003
Interior Other	-0.266	0.101	-0.077	-0.011
Bureau of Alcohol, Tobacco, Firearms & Explosives	0.368**	0.018	0.106	0.007
Bureau of Prisons	0.116	0.456	0.034	0.003
Drug Enforcement Admin.	0.313*	0.091	0.091	0.006
Exec. Ofc. of the U.S. Attorney	-0.105	0.702	-0.030	-0.001
Justice Other	0.137	0.377	0.040	0.007

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Veterans Health Admin.	0.153	0.340	0.044	0.015
Ntnl. Aeronautics & Space Admin.	-0.373**	0.016	-0.108	-0.015
Social Security Admin.	0.221	0.156	0.064	0.015
Marine Corps.	-0.060	0.708	-0.018	-0.001
Navy Other	-0.432***	0.009	-0.125	-0.032
Ofc. of Personnel Management	-0.210	0.161	-0.061	-0.004
State	-0.184	0.346	-0.053	-0.004
Fed. Aviation Admin.	-0.046	0.797	-0.013	-0.002
Transportation Other	-0.069	0.666	-0.020	-0.002
Internal Revenue Srv.	-0.408**	0.014	-0.118	-0.029
Ofc. of the Comptroller of the Currency	-0.055	0.697	-0.016	-0.001
Treasury Other	0.091	0.577	0.026	0.003
Veterans Benefits Admin.	-0.042	0.788	-0.012	-0.001
Veterans Other	-0.092	0.584	-0.027	-0.002
Observations	12800		Pseudo R2	0.987

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

To test the turnover intentions model in more detail, an interaction term was created, multiplying the Leventhal Index and the union dues variable, and added to the model. Recall that the sign and significance of an interaction term provided by standard ordered logit output can not be relied upon (Ai and Norton 2003). Another F-test was conducted to determine whether the turnover intentions model is improved by the inclusion of the interaction term. The test indicates the interaction term makes a substantive contribution to the model ( $p$  value = 0.039).

Perceptions of dues paying employees and those who do not pay union dues were then assessed separately. For employees who choose to pay union dues, a one standard deviation increase in the Leventhal Index is consistent with a 0.208 standard deviation decrease in turnover intentions (Table 7.17). An increase in procedural justice determinants of employees who do not contribute union dues is associated with a decrease of 0.308 standard deviations (Table 7.18). An examination of the marginal effects provides a slightly different picture (Table 7.19). Overall, the marginal effects are small and the differences between the two groups are minimal. Differences

in marginal effects are present only when evaluating the probability of someone indicating they are very likely to leave their organization, otherwise the confidence intervals of the marginal effects overlap. An increase in the Leventhal Index score for an employee who chooses to pay union dues is associated with a 0.19% decrease in the probability s/he will indicate a high likelihood of leaving the organization and a 0.35% decrease for non-dues paying employees.

Table 7.17  
Turnover Intentions of Dues-Paying Employees Only

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	-0.032***	0.000	-0.014	-0.208
Minorities	0.319**	0.045	0.143	0.068
Women	-0.020	0.894	-0.009	-0.004
Completed Education	0.169**	0.019	0.076	0.093
Field Office	-0.161	0.493	-0.072	-0.023
Agency Tenure	0.014	0.141	0.006	0.059
Salary in 1000s	-0.004	0.616	-0.002	-0.062
Food Safety & Inspection Srv.	-0.664**	0.040	-0.297	-0.040
Forest Srv.	-0.989*	0.061	-0.443	-0.046
Natural Resources Conservation Srv.	-0.717	0.321	-0.321	-0.018
Agriculture Other	-0.528	0.229	-0.237	-0.033
Air Force	0.534	0.209	0.239	0.050
Corps of Engineers	0.382	0.397	0.171	0.014
Army Other	0.178	0.741	0.080	0.017
Ntnl. Inst. of Standards & Technology	1.706***	0.000	0.764	0.014
Ntnl. Oceanic & Atmospheric Admin.	-0.716*	0.059	-0.320	-0.030
Patent & Trademark Ofc.	-0.146	0.639	-0.066	-0.008
Commerce Other	-0.424	0.363	-0.190	-0.017
Def. Contract Management Agy.	0.386	0.193	0.173	0.017
Def. Finance and Accounting Srv.	0.609*	0.079	0.273	0.027
Def. Logistics Agy.	-0.232	0.519	-0.104	-0.013
Defense Other	0.402	0.214	0.180	0.024
Education	0.143	0.673	0.064	0.004
Energy	-0.074	0.868	-0.033	-0.003
Environmental Protection Agy.	-0.597	0.148	-0.268	-0.026
Fed. Deposit Insurance Corp.	-0.003	0.992	-0.001	0.000
Public Building Srv.	0.061	0.882	0.028	0.001
General Services Admin. Other	0.884**	0.035	0.396	0.020
Ctr. for Disease Control & Prevention	0.223	0.611	0.100	0.005
Indian Health Srv.	0.270	0.465	0.121	0.011

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Ntnl. Institutes of Health	1.696***	0.000	0.759	0.016
Health & Human Srv. Other	-0.142	0.620	-0.064	-0.009
Customs & Border Protection	0.385	0.146	0.172	0.035
Immigration & Customs Enforcement	0.444	0.231	0.199	0.016
Fed. Emergency Management Agy.	0.603*	0.070	0.270	0.010
Coast Guard	0.654	0.406	0.293	0.007
Secret Service	0.250	0.584	0.112	0.002
Homeland Security Other	-0.097	0.946	-0.044	-0.002
Housing and Urban Dvlpmt.	-0.357	0.306	-0.160	-0.015
Bureau of Land Management	-0.027	0.950	-0.012	-0.001
Indian Affairs	-0.196	0.822	-0.088	-0.002
Ntnl. Parks Srv.	-0.219	0.613	-0.098	-0.007
Interior Other	-0.168	0.805	-0.075	-0.005
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.590	0.175	-0.264	-0.012
Bureau of Prisons	-0.418	0.127	-0.187	-0.030
Drug Enforcement Admin.	-31.075***	0.000	-13.913	-0.509
Justice Other	0.341	0.426	0.153	0.014
Veterans Health Admin.	-0.274	0.399	-0.123	-0.045
Ntnl. Aeronautics & Space Admin.	0.779	0.106	0.349	0.027
Social Security Admin.	-0.280	0.300	-0.125	-0.040
Marine Corps.	0.082	0.843	0.037	0.003
Navy Other	-0.532	0.267	-0.238	-0.038
Ofc. of Personnel Management	0.106	0.761	0.047	0.003
State	-0.489	0.165	-0.219	-0.026
Fed. Aviation Admin.	-0.096	0.822	-0.043	-0.009
Transportation Other	-1.028	0.490	-0.460	-0.011
Internal Revenue Srv.	-0.254	0.364	-0.114	-0.041
Ofc. of the Comptroller of the Currency	-0.289	0.357	-0.129	-0.008
Treasury Other	0.349	0.278	0.156	0.015
Veterans Benefits Admin.	-0.164	0.584	-0.073	-0.010
Veterans Other	-0.060	0.902	-0.027	-0.001
Observations	2386		Pseudo R2	0.941

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 7.18  
Turnover Intentions of non-Dues-Paying Employees Only

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Leventhal Index	-0.044***	0.000	-0.023	-0.308
Minorities	0.157**	0.045	0.081	0.035
Women	-0.245***	0.001	-0.126	-0.063
Completed Education	0.027	0.379	0.014	0.017

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Field Office	-0.414***	0.000	-0.213	-0.087
Agency Tenure	-0.006	0.158	-0.003	-0.029
Salary in 1000s	0.001	0.311	0.001	0.024
Food Safety & Inspection Srv.	-0.337	0.165	-0.173	-0.012
Forest Srv.	0.098	0.648	0.051	0.007
Natural Resources Conservation Srv.	-0.627***	0.002	-0.322	-0.036
Agriculture Other	-0.082	0.676	-0.042	-0.008
Air Force	0.041	0.842	0.021	0.006
Corps of Engineers	0.052	0.795	0.027	0.004
Army Other	0.293	0.154	0.151	0.044
Ntnl. Inst. of Standards & Technology	-0.357*	0.065	-0.183	-0.008
Ntnl. Oceanic & Atmospheric Admin.	-0.719***	0.000	-0.369	-0.044
Patent & Trademark Ofc.	-0.068	0.739	-0.035	-0.002
Commerce Other	0.161	0.367	0.082	0.012
Def. Contract Management Agy.	0.129	0.527	0.066	0.006
Def. Finance and Accounting Srv.	0.502***	0.008	0.258	0.029
Def. Logistics Agy.	-0.075	0.712	-0.038	-0.005
Defense Other	0.187	0.285	0.096	0.016
Education	-0.003	0.987	-0.002	0.000
Energy	0.027	0.891	0.014	0.002
Environmental Protection Agy.	-0.413*	0.052	-0.212	-0.024
Fed. Deposit Insurance Corp.	-0.493**	0.024	-0.253	-0.015
Public Building Srv.	-0.215	0.305	-0.110	-0.007
General Services Admin. Other	0.081	0.701	0.041	0.003
Ctr. for Disease Control & Prevention	-0.618***	0.003	-0.317	-0.023
Indian Health Srv.	-0.064	0.799	-0.033	-0.002
Ntnl. Institutes of Health	0.400**	0.049	0.206	0.019
Health & Human Srv. Other	-0.120	0.538	-0.061	-0.008
Customs & Border Protection	0.069	0.773	0.036	0.004
Immigration & Customs Enforcement	0.097	0.626	0.050	0.004
Fed. Emergency Management Agy.	0.237	0.215	0.122	0.005
Coast Guard	0.289	0.001	0.364	0.051
Secret Service	-0.246	0.176	0.149	0.008
Homeland Security Other	-0.164	0.203	-0.126	-0.007
Housing and Urban Dvlpmt.	0.217	0.652	-0.084	-0.004
Bureau of Land Management	-0.226	0.410	0.111	0.007
Indian Affairs	0.056	0.250	-0.116	-0.011
Ntnl. Parks Srv.	-0.389*	0.812	0.029	0.001
Interior Other	0.109	0.084	-0.200	-0.019
Bureau of Alcohol, Tobacco, Firearms & Explosives	-0.681***	0.577	0.056	0.009
Bureau of Prisons	-0.425*	0.001	-0.350	-0.023
Drug Enforcement Admin.	-0.346	0.098	-0.218	-0.016
Justice Other	-0.061	0.108	-0.178	-0.013
Veterans Health Admin.	-0.031	0.592	-0.075	-0.004
Ntnl. Aeronautics & Space Admin.	-0.205	0.736	-0.031	-0.006
Social Security Admin.	-0.390	0.882	-0.016	-0.005
Marine Corps.	0.124	0.290	-0.105	-0.016

	Un- Standardized Coefficient	P>z	Y- Standardized Coefficient	Fully Standardized Coefficient
Navy Other	0.109	0.100	-0.200	-0.040
Ofc. of Personnel Management	0.235	0.530	0.064	0.005
State	0.027	0.603	0.056	0.016
Fed. Aviation Admin.	-0.369	0.210	0.121	0.007
Transportation Other	-0.181	0.927	0.014	0.001
Internal Revenue Srv.	-0.327	0.141	-0.190	-0.027
Ofc. of the Comptroller of the Currency	-0.621***	0.337	-0.093	-0.009
Treasury Other	-0.329	0.206	-0.168	-0.034
Veterans Benefits Admin.	-0.285	0.002	-0.319	-0.016
Veterans Other	-0.063	0.107	-0.169	-0.016
Transportation Security Admin.	0.710***	0.183	-0.146	-0.014
Exec. Ofc. of the U.S. Attorney	-0.145	0.747	-0.033	-0.002
Observations	10414		Pseudo R2	0.808

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Table 7.19  
Marginal Effects for Turnover Intentions

	<i>Dues-Paying Employees</i> Leventhal Index	<i>Non-Dues-Paying Employees</i> Leventhal Index
Fully Standardized Coefficient	-0.208	-0.308
Std. Error.	0.000	0.000
Very Unlikely	0.0077	0.0109
C.I.	0.0053, 0.0101	0.0096, 0.0123
Somewhat Unlikely	-0.0007	-0.0009
C.I.	-0.0011, -0.0004	-0.0011, -0.0007
Neither likely nor unlikely	-0.0024	-0.0027
C.I.	-0.0034, -0.0014	-0.0032, -0.0023
Somewhat Likely	-0.0027	-0.0039
C.I.	-0.0035, -0.0018	-0.0044, -0.0033
Very Likely	-0.0019	-0.0035
C.I.	-0.0025, -0.0013	-0.0040, -0.0030

Looking across the models, procedural justice determinants have a different impact on only turnover intentions when comparing line employees who choose to pay union dues and

those who do not. This result occurs despite the fact that the difference of means tests on both the dependent variables and the Leventhal Index and criteria indicated significant differences between the groups. Like the results in the management analysis, the dearth of findings here indicates that organizational culture may be more dominant than union sub-cultures. This is not entirely surprising given the relative weakness of federal unions. However, these results may not be obtained in particular organizations. Perhaps differential effects of unionization may only be observed once union density reaches a particular level, higher than that explored here.<sup>22</sup>

Two alternatives to the original model are explored, using the same procedures as employed above. One possibility for the lack of significant differences in the satisfaction and citizenship propensity model may be due to a narrow definition of unionization. The survey data allow scholars to consider not just those who pay union dues, but also those who are covered by a union agreement but who choose to not pay union dues. It is reasonable to extend the theory to these free-riders because they work within the culture of the bargaining unit. The culture of the sub-group may influence their attitudes as well as the attitudes of those who choose to pay union dues.

To explore this alternative, a dummy variable was created that assigns a 1 to employees who indicated on Question 62 either that they pay union dues or that they are covered by a bargaining agreement but choose to not pay union dues. All other employees were assigned a score of 0. The difference of means reveal that unionized employees (those who choose to pay union dues and those who are covered by a bargaining agreement but do not pay) exhibit lower scores on the Leventhal Index, lower levels of satisfaction, and lower intentions to engage in citizenship behavior, while difference in turnover intentions are minimal (Table 7.20).

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<sup>22</sup> Such a result was found in representative bureaucracy research. Specifically, passive representation transforms into active representation once a critical mass of individuals are present in the organization (Hindera and Young 1998).



Table 7.20  
Difference of Means for Alternative Union Specification

	<i>Unionized Employees</i>	<i>Non-Unionized</i>	<i>t</i> value
Leventhal Index	42.927	45.757	6.45
Turnover Intentions	2.110	2.223	2.56
Satisfaction	7.398	7.865	5.34
Citizenship Behavior	5.531	5.777	4.21

The ordered logit models with the more expansive union variable illustrated the same results as the previous iteration. Unionization is only significant in the turnover intentions model. The F-tests further indicate that including unionization improves the turnover intentions model ( $p$  value = 0.021), but does not improve either the propensity to engage in citizenship behavior ( $p$  value = 0.876) or the satisfaction model ( $p$  value = 0.358). Because the broader measure of unionization did not produce more significant results, further analysis was not pursued.

The lack of significant results beyond the turnover intentions model may be due to the issue of governmentwide aggregation. Specifically, many organizations in the federal government have line employees who are not unionized at all. In these organizations, there are no employee subgroups to compare, which may result in the insignificant statistical relationships. However, within those organizations that are actually unionized, difference between the two groups may emerge. As done in Chapter 4, the analysis will now be limited to employees in the 27 agencies with 15% or more of employees indicating they choose to pay union dues. The unionization variable returns to the original formulation, with 1 indicating an individual chooses to pay union dues, and a 0 for all others. When focusing only on those agencies with 15% or

more of employees paying union dues, descriptive statistics indicate once again that the Leventhal Index is lower for dues-paying employees, as are levels of satisfaction and the likelihood of engaging in citizenship behavior (Table 7.21). Differences between the two groups on turnover intentions are not significant.

Table 7.21  
Difference of Means for Employees in Agencies with 15% or More Paying Union Dues

	<i>Unionized Employees</i>	<i>Non-Unionized</i>	<i>t value</i>
Leventhal Index	41.537	44.644	4.28
Turnover Intentions	2.041	2.133	1.39
Satisfaction	7.210	7.740	3.75
Citizenship Behavior	5.417	5.704	2.96

Next, the turnover intentions, citizenship propensity, and satisfaction models were reconsidered for the sub-sample of agencies with 15% or more of employees indicating they pay union dues. The same results were obtained. Paying union dues is significant only in the turnover intentions model. F-tests indicate that paying union dues improved the turnover intentions model ( $p$  value = 0.061), but neither the model assessing the propensity to engage in citizenship behavior is improved ( $p$  value = 0.980), nor is the satisfaction model ( $p$  value = 0.443). Again, because the same results were obtained, the analysis concludes here.

### *Discussion of Union Results*

Although the descriptive statistics suggest that difference should exist between dues-paying and non-dues-paying employees, the empirical models do not fully support this conclusion, regardless of the various formulation used. The model results are consistent.

Procedural justice determinants of individuals who pay union dues have a different impact on turnover intentions compared to non-dues paying line employees. This result is repeated when focusing on all those covered by union contracts (dues-paying and non-dues paying) or when focusing only on those agencies with a critical mass of employees paying dues.

As with the management findings, the conclusion from this analysis is that unionization matters sometimes. Why might there be more insignificant relationships than significant relationships? The null results could be attributed to the manner in which procedural justice determinants are measured. Colquitt's (2001) validated measure was not available for use in this study. Potentially, the validated scale would produce different results. Another potential cause for the lack of significance is the unique rules governing labor relations in the federal government. Compared to unions in the private sector, federal employee unions are weak in that few substantive issues fall within the scope of bargaining, they are not allowed to strike, and unions and management are not truly co-equal (government both sets the ground rules and is the party with whom the unions bargain). It is possible that different findings may result from a private sector sample or a sample of public sector employees in a jurisdiction where unions can negotiate over pay and strike, for example.

From the perspective of those with strong opinions about the appropriateness of unions in the public sector, a few messages emerge. Unions, in and of themselves, do not make the relationship between procedural justice determinants, satisfaction, and the propensity to engage in citizenship any better. Importantly, however, unions also do not make them any worse. Especially in the federal sector, where the only formal, direct power unions can exert is in the grievance and discipline process, union-negotiated procedures which should theoretically improve procedural justice, do not appear to have a measurable impact. It is not possible to

determine the causal relationship: does unionization cause the lower Leventhal Index score; do lower perceptions of procedural justice determinants result in unionization; or are union-negotiated procedures viewed as unfair and thus influencing the perceptions of procedural justice determinants?

On the other hand, these results could be another example of organizational culture being more important than a particular demographic trait. Even in the turnover intentions model, the agency of the respondent exhibited a larger (standardized) impact on the dependent variable than the union-dues variable. In fact, every significant agency variable has a larger standardized association with turnover intentions. This illustrates the difficulty of trying to reach generalized conclusions from a collection of organizations, even when those organizations operate under similar laws and regulations.

#### What is the Association Between the Leventhal Index and the Filing of Complaints?

To this point, the models have focused on the relationship between the Leventhal Index and other attitudes that are viewed as important to a productive work environment. Now attention will turn toward the impact of these perceptions on actual employee behavior—the filing of formal complaints. Specifically, how does the 2005 Leventhal Index score influence the filing of complaints in 2006? The psychological process behind complaint filing is complex and research findings are often conflicting. Before an individual files a complaint, she must first perceive that an unjust event has occurred. Theory on the sociology of disputes suggests that once someone believes an unjust event has happened to them, the event is registered as a complaint or dispute if (a) blame can be placed on someone else for the situation and (b) the individual harmed believes

something can be done to correct the situation (Felstiner, Abel, and Sarat, 1980). The key to an individual filing a complaint is the transition from assigning blame to believing the event can be remedied. This transition is inherently subjective, unstable, and reactive (Felstiner et al., 1980). However, believing that the situation can be remedied is directly influenced by perceptions of the fairness of dispute resolution procedures and the perceived fairness of the individuals that receive the complaints.

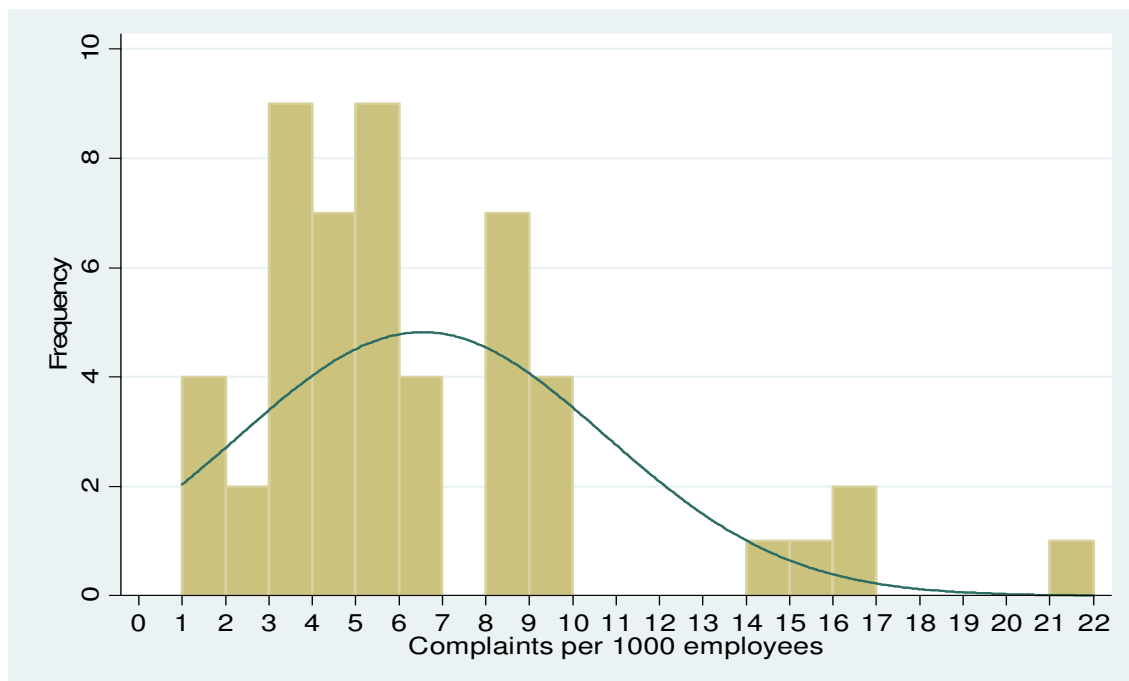
Assessing the relationship between complaints and procedural justice determinants requires the use of data from outside the Merit Principles Survey. As noted previously, agencies are required to file annual reports under the No FEAR Act that catalogue the number and types of complaints filed. In addition to the No FEAR Act data, agencies are required to file information on the use of alternative dispute resolution (ADR) according to the 1996 Administrative Dispute Resolution Act. Hypothesis 3.4.2 suggested that the availability and use of ADR will decrease the filing of formal complaints, and thus acts as a selection mechanism at the individual level. Both the No FEAR Act and ADR data are reported at the agency and department level. To conduct the analysis, the survey data are aggregated up to that level. As a result, the number of observations is now 51 agencies.<sup>23</sup> The complaints analysis will proceed as follows. First, descriptive statistics of the complaints and ADR data will be presented, in addition to basic correlations. Next, a series of regressions will be used for hypothesis testing. The section will conclude with a discussion of the findings.

Across federal agencies in 2006, there was an average of 6.5 complaints per 1,000 employees, with a standard deviation of 4.2 and a range from 1.2 to 21.5. The agency with the lowest rate of complaints is Commerce-Other, while the agency with the highest complaint rate is

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<sup>23</sup> The included agencies and the reasons for exclusion were detailed in Chapter 3 (table 3.7).

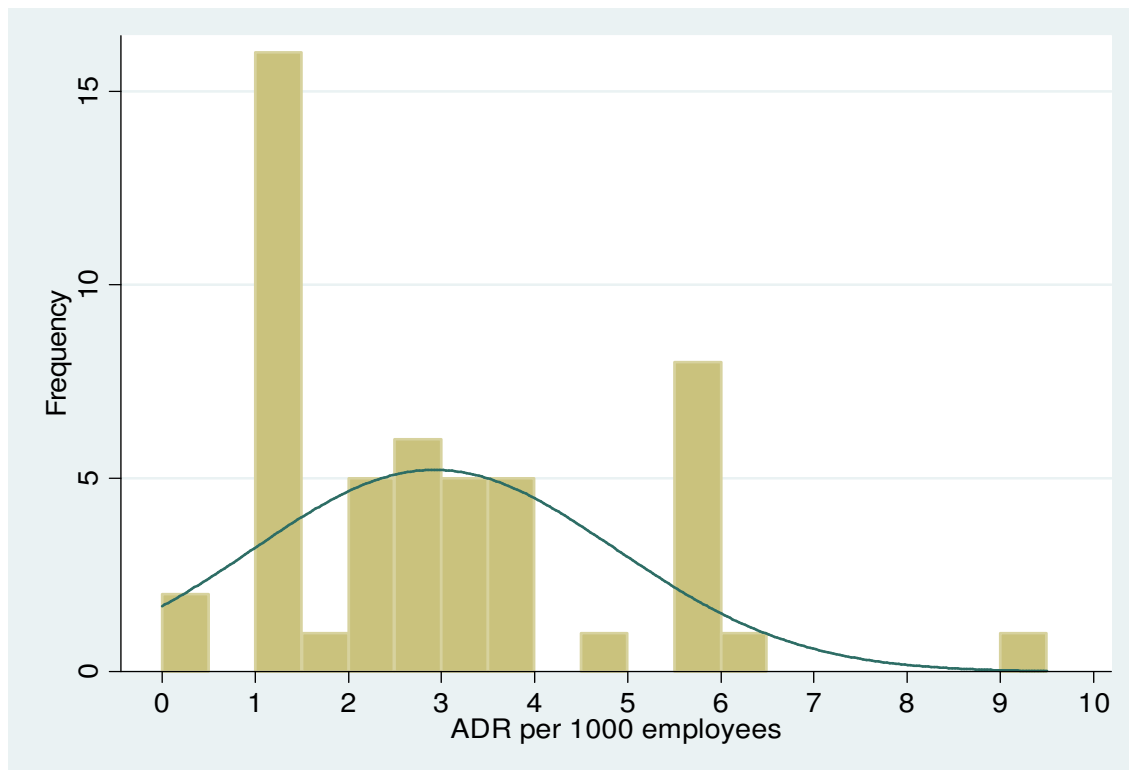
Immigration and Customs Enforcement. The histogram of the complaint data demonstrates that the distribution is right skewed (skewness = 1.58 and median = 5.5), due mainly to a few agencies with particularly high complaint rates (Figure 7.1). This indicates it will be necessary to transform the complaint data by taking its natural log when it is used as a dependent variable in the regression equation.



*Figure 7.1.* Histogram of complaints filed per 1,000 employees

The governmentwide average participation in ADR in 2006 was 2.93 per 1,000 employees, with a standard deviation of 1.95 and a range between 0.190 and 9.160. ADR usage is highest at the Department of Housing and Urban Development and lowest at the Office of Personnel Management. Although the ADR data are less skewed than the complaint data, it is still skewed to the right (skew = 0.953, median = 2.709), due mainly to the Housing and Urban

Development outlier (Figure 7.2). The next closest agency is the Federal Deposit Insurance Corporation with an ADR usage of 6.152 per 1,000 employees.



*Figure 7.2.* Histogram of ADR usage per 1,000 employees.

Descriptive statistics are provided for all the variables in the complaint analysis in Table 7.22. The data for the demographic variables represent proportions. For example, the average proportion of an agency's population that is female is 0.437, while the average proportion of individuals in an agency with a bachelors degree or higher equals 0.626. It is worth noting that the average Leventhal Index score in this analysis is different than previously noted (an average of 44.86 here vs. 45.02 previously). This is due to the exclusion of one agency (Defense Other) and the aggregation of several agencies. For example, Army Other and the Army Corps of Engineers were combined, into a catch-all Army category. The values of the design weights

remained unchanged for each individual respondent, while the variable used to group the agencies for this particular analysis was different.

Table 7.22  
Descriptive Statistics for Complaint Model Data

	Obs	Mean or Proportion	Std. Dev.	Min	Max
Complaints per 1000	51	6.537	4.221	1.294	21.487
ADR per 1000	51	2.926	1.951	0.190	9.160
Leventhal Index	51	44.861	2.382	36.640	49.273
Agency Tenure	51	14.525	2.745	3.001	19.218
Pay (1000s of \$)	51	76.540	13.250	43.992	96.984
Managers	51	0.150	0.060	0.083	0.328
Field Office	51	0.758	0.190	0.128	0.959
Union Dues	51	0.170	0.138	0.000	0.511
Minorities	51	0.281	0.127	0.135	0.777
Women	51	0.437	0.128	0.255	0.729
Bachelors degree or higher	51	0.626	0.140	0.349	0.898

A limited number of correlations are significant, which may foreshadow the results of the regression (Table 7.23). A decrease in the Leventhal Index is associated with an 0.309 decrease in the complaints filed per 1,000 employees. ADR usage is negatively correlated with agency tenure. The Leventhal Index increase as agency tenure increases, as pay increases, and as the proportion of employees with a bachelors degree increases. However, a larger proportion of minorities is associated with lower average Leventhal Index scores. The lack of a relationship between the complaints filed and ADR usage suggests that the presence of ADR does not impact



the rate at which complaints are filed. This finding is curious because ADR programs are specifically intended to reduce the number of formal complaints filed.

Three alternative hypotheses were proposed for the relationship between the Leventhal Index and the filing of complaints. Hypothesis 3.4.1a theorized that a decrease in procedural justice determinants will be associated with a decrease in the filing of complaints. As people believe they will be treated more fairly, they are more likely to air their grievances, consistent with the findings of Rudman et al (1995). Alternatively, Hypothesis 3.4.1b proposed that an decrease in procedural justice determinants would result in an increase in the filing of complaints. Essentially, people who feel they are being treated fairly have less of a reason to file complaints (Youngblood et al., 1992; Goldman, 2003; Roberts and Young, 1997). Finally, Hypothesis 3.4.1c suggested a curvilinear relationship. Specifically, as procedural justice determinants decrease, the filing of complaints will initially increase, but then decrease. Such a relationship has not yet been tested in the literature, but is based on the assumption that the behavioral response changes depending on the level of procedural justice determinants.

To tests these hypotheses, OLS regression will be used with the dependent variable of the natural log of the complaints filed per 1,000 employees. The models have a sample size of 51, where each member of the sample is a federal agency. Independent variables include the natural log of the Leventhal Index, the natural log of ADR usage per 1,000 employees, and the proportion of the agencies' employees that exhibit various demographic traits. To assess the third alternative hypothesis, the Leventhal Index will be squared and added to the equation.

Table 7.23  
Correlations in the Complaint Model

	Complaint per 1000 Employees	ADR per 1000 Employees	Leventhal Index	Agency Tenure	Salary (\$1000)	Managers	Field	Union Dues	Minority	Women	Bachelors Degrees and Higher
Complaint	1.000										
ADR	-0.063	1.000									
Leventhal Index	-0.309*	-0.210	1.000								
A. Tenure	-0.190	-0.293*	0.466*	1.000							
Salary	0.128	-0.090	0.341*	0.252	1.000						
Managers	0.100	0.227	-0.056	-0.134	-0.113	1.000					
Field	-0.021	0.202	-0.190	-0.005	-0.591*	0.056	1.000				
Union Dues	0.234	0.185	-0.235	0.100	-0.016	-0.145	-0.001	1.000			
Minorities	0.185	-0.020	-0.292*	-0.243	-0.076	-0.070	-0.136	0.207	1.000		
Women	0.020	-0.095	0.144	0.024	-0.039	-0.226	-0.209	0.077	0.442*	1.000	
Bachelors Degree and Higher	-0.083	-0.208	0.425*	0.339*	0.698*	-0.083	-	-0.112	-0.140	-0.047	1.000

\* indicates significant at  $p > 0.05$  and higher

Table 7.24 contains the results of the regressions. Column 1 in the table illustrates the model without the squared Leventhal Index. In this first model, the Leventhal Index is only significant at the 0.10 level. A 1% increase in the Leventhal Index results in a 3.55% decrease in the filing of complaints. Furthermore, there is no relationship between the use of ADR and the filing of complaints.

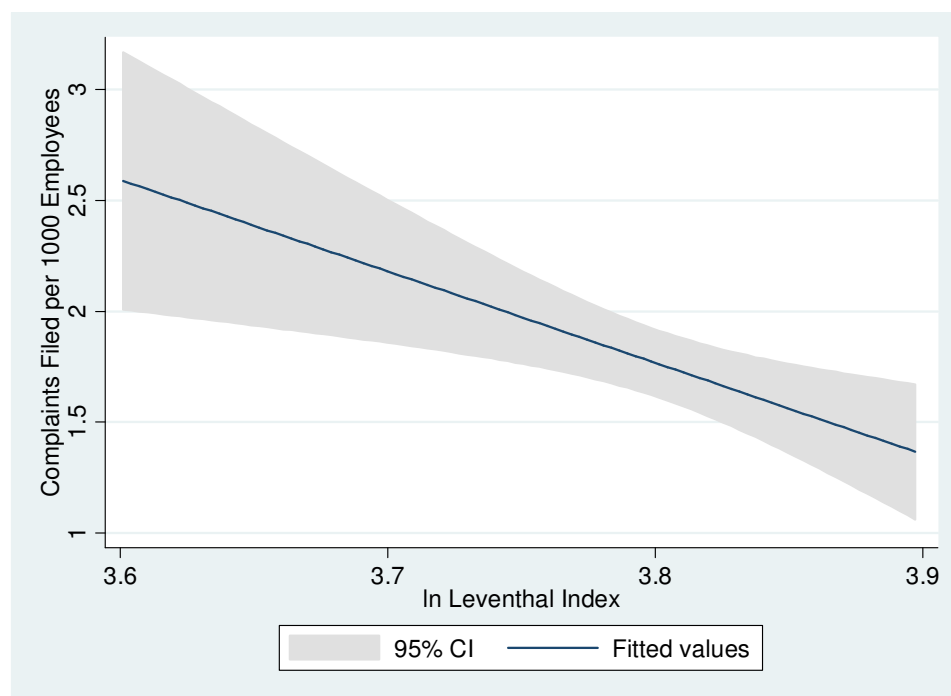
Table 7.24  
Complaints Models

	1	2
In Leventhal Index	-3.545* [1.882]	309.766** [136.675]
In ADR per 1000 employees	0.004 [0.113]	0.021 [0.108]
Agency Tenure	-0.017 [0.036]	-0.058 [0.038]
Salary	0.014 [0.009]	0.012 [0.009]
Managers	1.352 [1.384]	1.493 [1.318]
Field Office	0.588 [0.584]	0.706 [0.557]
Union Dues	1.294** [0.624]	1.052* [0.602]
Minorities	0.133 [0.751]	0.101 [0.714]
Women	0.287 [0.754]	0.025 [0.726]
Bachelors Degree or Higher	-0.115 [0.847]	0.165 [0.814]
In Leventhal Index Squared		-41.420** [18.067]
Observations	51	51
Adjusted R-squared	0.13	0.21

Standard errors in brackets

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

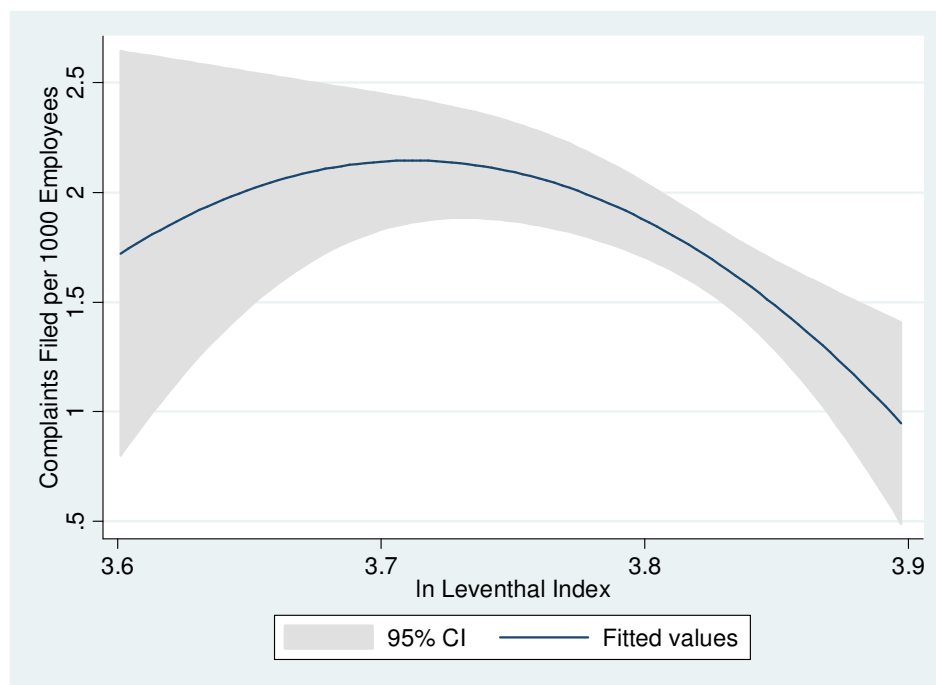
Only one demographic variable is significant in this first model. As the proportions of employees who pay union dues increases, the filing of complaints increases by 129.4 percent. Figure 7.3 illustrates the linear relationships between the filing of complaints and the Leventhal Index as represented in the first column of results. However, an examination of the second column in Table 7.24 reveals that relying on the first model would be misleading. In this iteration, the Leventhal Index is now significant at the 0.05 level, and, importantly, the squared Leventhal Index term is also significant at the 0.05 level. The use of ADR is still not significant. The proportion of employees who pay union dues is now significant at only the 0.10 level. No other demographic control is significant.



*Figure 7.3.* Linear relationship between complaints and the Leventhal Index

The signs on the Leventhal Index and the squared term indicate that it has a diminishing effect on the filing of complaints (Figure 7.4). Explaining the relationship makes slightly more sense if we read the figure from right to left. As the Leventhal Index decreases, the filing of

complaints initially increases, but then decreases. The tipping point occurs, theoretically, when employees no longer believe that the complaints process will be fair or that their concerns will no longer be taken seriously. Using the natural log of the Leventhal Index, the tipping point occurs at 3.739.<sup>24</sup> A total of 7 agencies have average Leventhal Index scores (ln) below the tipping point. Furthermore, including the squared Leventhal Index variable improves the adjusted R-square from 0.13 to 0.21.



*Figure 7.4.* Quadratic relationship between complaints and the Leventhal Index

In the attitudes models, where the relationship between the Leventhal Index and satisfaction, turnover intentions, and the propensity to engage in citizenship behavior was assessed, agency controls accounted for differences in personnel rules and other unique organizational characteristics not otherwise accounted for. By aggregating the survey data up to the agency level, we are no longer controlling for the presences of alternative personnel systems

<sup>24</sup> The mean of the ln of procedural justice perceptions is 3.802, with a range from 3.601 to 3.897. The tipping point is less than the governmentwide average.

or the authorization to design an alternative personnel system. This shortcoming is easily addressed by adding two dummy variables to the analysis, as described in Chapter 3. Variable *AltHR1* will equal 1 if an agency had an alternative personnel system in place in 2006, and 0 if not. An alternative personnel system is defined here as pay, classification, and performance appraisal rules that are different from the traditional federal personnel system. A second variable, *AltHR2*, equals 1 if an agency had authority in 2006 to design an alternative personnel system, but has not yet implemented it, and 0 if not. The values assigned to each agency were presented previously in Table 3.8.

As before, the model was assessed using OLS, with natural log of complaints as the dependent variable, and the natural log of both the Leventhal Index and the Index squared as key independent variables. Results are presented in Table 7.25. The variables for the Leventhal Index remain significant and retain the same signs. Agencies with alternative personnel systems implemented have a complaints rate that is 41.7% lower than other agencies, all else being equal. Likewise, agencies that have not yet implemented alternative personnel systems, but have the authority to do so, have complaints rates that are 52.6% lower than other agencies. Clearly, something about the alternative personnel systems, the anticipation of such a system, or the characteristics of organizations with this authority is shifting the regression line downward. Because of the successive time periods in which the data were collected, we can describe this as a causal relationship: alternative personnel systems reduce the filing of complaints per 1,000 employees in the federal government. ADR usage is still not significant, and the proportion of individuals paying union dues is no longer significant. Pay is significant in this model. Importantly, both controls for alternative personnel systems are significant. The adjusted R-squared is further improved by controlling for the presence of alternative personnel systems.

Table 7.25

Complaints Model, Controlling for Alternative Personnel Systems

In Leventhal Index	316.190**
	[140.194]
In Leventhal Index Squared	-42.243**
	[18.512]
In ADR per 1000 employees	0.148
	[0.118]
Agency Tenure	-0.06
	[0.040]
Salary	0.014*
	[0.008]
Managers	1.264
	[1.246]
Field Office	0.32
	[0.549]
Union Dues	0.725
	[0.582]
Minorities	-0.079
	[0.689]
Women	-0.428
	[0.720]
Bachelors Degree or Higher	-0.771
	[0.848]
AltHR1	-0.417**
	[0.188]
AltHR2	-0.562*
	[0.278]
Observations	51
Adjusted R-squared	0.30
Standard errors in brackets	

*Discussion*

The findings in this portion of the third research question are important for both procedural justice and public personnel scholars. First, the presence of a quadratic relationship between the Leventhal Index and the filing of complaints is important in a number of respects. Linking procedural justice determinants and behavior has not previously been examined in a field

setting. Furthermore, quadratic relationships do not appear to have been tested in published research findings, which may be the reason behind the conflicting findings in existing studies. Assessing this relationship is relatively easy; it does not require the gathering of additional data or the lengthening of existing surveys. Second, it illustrates that the relationship between procedural justice determinants and behavior is more complex than previously thought. The challenge for managers is to find out what policies and activities can keep perceptions of procedural justice determinants above that tipping point so that employees will perceive that they will be treated fairly if they file a complaint and so they will feel more comfortable filing complaints generally. Importantly, the curve indicates that those with low perceptions of justice determinants, who may have reasonable, actionable complaints, are not making the issues known to management. As a result, inappropriate rules and inappropriate treatment are not being challenged, limiting accountability.

The significance of alternative personnel systems is an important finding for public personnel scholars. Over the last decade, a significant amount of research described personnel reform efforts at all level of governments. None examine the relationship between alternative personnel systems and actual behavior. Instead, theses studies examine perceptions of the success of the reforms or broader organizational attitudes that are not specific to the reform. Furthermore, only two studies examine causality between perceptions in one time period and perceptions in a later strobe (Pearce and Perry, 1983; Kellough and Nigro, 2002). Linking reform to actual behavior is a significant step forward for public personnel scholars interested in reform efforts. Likewise, the findings that alternative personnel systems decrease the filing of complaints should give pause to those who are wholly critical of the changes.



A number of explanations could account for the differences between agencies with and without alternative personnel systems. First, one could argue that a self-selection bias exists—namely, agencies with alternative personnel systems are systematically different in other ways that are not captured in the model. In terms of procedural justice indicators, this would not be an appropriate assumption. Of the highest performing agencies, neither NASA nor the Office of the Comptroller of the Currency have an alternative personnel system under the definition used here, while the Army Corps of Engineers does. Furthermore, the lowest performing agencies on the Leventhal Index all have either an alternative personnel system authorized or implemented.

A second reason for the negative relationship may be that the implementation of new personnel systems is often accompanied with a significant amount of training for both managers and line employees. It is possible that the training is leading to better management, and therefore, reducing the activities that lead to complaints. From a pessimistic point of view, the negative relationship could indicate that the cultures in organizations with alternative personnel systems suppress the filing of complaints, through perceived threats of retaliation, for example. Still another option is that the new systems provide opportunities for addressing problems before they would enter the ADR or formal complaint system. For example, many agencies with alternative performance appraisal systems have internal review committees that assess the distribution of performance ratings to identify problems, such as a gender or ethnicity imbalance in the distribution of the ratings, so that they can be corrected before performance ratings are finalized.

ADR usage provided additional interesting results. The distinct lack of a relationship between the use of ADR and the filing of complaints in all of the models is particularly surprising. ADR is designed as a mechanism for confronting disputes so that they do not become formal complaints. To accomplish the goals set out in legislation, there should be a negative

relationship between the use of ADR and complaints. Despite this, the sign on the coefficients for ADR was positive in all three regression models. Agencies are required to file both the complaint data and the ADR data with the Equal Employment Opportunity Commission. Clearly, more detailed research can be done to evaluate the impact of ADR on the filing of complaints. The results here indicate that ADR may not be as effective as hoped.

### Summary of Findings for Research Question Three

Overall, Research Question 3 provided a mixed set of findings (Table 7.26). First, the Leventhal Index is related to levels of satisfaction, turnover intentions, and the propensity to engage in citizenship behavior in the hypothesized directions, consistent with existing research (Colquitt et al., 2001; Cohen Charash and Spector, 2001). Importantly, the Leventhal Index exhibits a larger association than any other variable used in part one of the analysis. Second, management status matters in different circumstances, and the direction of the association is more nuanced than the hypotheses suggested. Results here indicate the importance of not assuming that all managers exhibit similar perceptions. In fact, the more detailed results indicate that supervisors' perceptions are lower than line employees under some circumstances, while manager and executive perceptions are higher in some cases. These results are different from those of Rubin (2009) which suggested that grouping the multiple levels of management was appropriate and that it would achieve positive significance.

Table 7.26  
Hypotheses for Third Research Question

		Reject	Can Not Reject
H <sub>3.1.1</sub>	An increase in determinants of procedural justice perceptions will be associated with an increase in levels of job satisfaction.		X

		Reject	Can Not Reject
H <sub>3.1.2</sub>	An increase in determinants of procedural justice perceptions will be associated with an increased willingness to engage in organizational citizenship behavior.		X
H <sub>3.1.3</sub>	An increase in determinants of procedural justice perceptions will be associated with a decrease in turnover intentions.		X
H <sub>3.2a</sub>	Being a manager has an added positive effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions; or	X	
H <sub>3.2b</sub>	Being a manager has an added negative effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions.	X	
H <sub>3.3a</sub>	Being an employee who pays union dues has an added positive effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions; or	X	
H <sub>3.3b</sub>	Being an employee who pays union dues has an added negative effect on the relationship between determinants of procedural justice perceptions and levels of satisfaction, the propensity to engage in citizenship behavior, and turnover intentions.	X	
H <sub>3.4.1a</sub>	As determinants of procedural justice perceptions decrease, the filing of complaints will decrease;	X	
H <sub>3.4.1b</sub>	As determinants of procedural justice perceptions decrease, the filing of complaints will increase; or	X	
H <sub>3.4.1c</sub>	As determinants of procedural justice perceptions decrease, the filing of complaints will initially increase, but then decrease.		X
H <sub>3.4.2</sub>	As the use of ADR increases, the filing of complaints will decrease.	X	
H <sub>3.4.3a</sub>	The presence of alternative personnel systems will be associated with increased complaint filings; or	X	
H <sub>3.4.3b</sub>	The presence of alternative personnel systems will be associated with lower complaint filings.		X

Third, levels of unionization, regardless of how it is measured, appear to have little differential impact on the relationship between procedural justice determinants and workplace attitudes. Again, determinants of justice perceptions are important to both unionized and non-unionized employees, regardless of how unionization is defined, but it does not translate into different workplace attitudes. Fairness attitudes are no better among unionized employees—not a flattering prospect for federal employee unions—but they also do not fare any worse.

Finally, procedural justice determinants influence the level of complaints filed in a curvilinear manner. As noted above, organizational justice scholars do not frequently study the association with behavior, nor has published research considered a curvilinear relationship. This reflects a more sophisticated calculation on the part of the individual in deciding whether or not to file a complaint with their organization. Likewise, the decrease in complaints in organizations with alternative personnel systems is a significant new finding for public personnel scholars.

Clearly, more testing is needed to assess the efficacy of the findings. Research isolated to single organizations may reveal that management or unionization status does play a large role in the relationship between procedural justice determinants and important workplace attitudes. Culture may determine the significance of this relationship—a relationship that may be washed out when analyzing multiple organizations simultaneously. Alternatively, it may turn out that culture is more important than either management designation or union density. Scholars are further challenged to revisit studies on the filing of complaints to determine if previous findings indicating linear relationships were actually masking quadratic associations.

## CHAPTER 8

### CONCLUSION

Procedures guide every action taken by government. Fundamentally, procedures are used to ensure the actions of the bureaucratic state are legitimate and in accordance with the Constitution. They limit the discretion of civil servants both in their dealings with the public and in their interactions with each other. One area in which procedures are shown to be uniquely complex in government is the area of personnel management (Rainey and Bozeman, 2000; Rainey, Facer, and Bozeman, 1995). Court-derived procedures, rules imposed by labor contracts, and voluminous policy regulations create the perception that personnel rules stifle management discretion unnecessarily. Many proposals for personnel reforms rest on an argument that managers need more flexibility to reward high performers, correct or remove poor performers, and that this is accomplished by reducing “red tape.” Likewise, reforms outside of the personnel arena focusing on results-based management ignore the important role of procedures. Unfortunately, these changes are happening without considering the positive psychological value that rules contribute to an organization.

The theory of procedural justice provides public administration scholars an analytical lens for assessing the positive effects of rules. Procedural justice perceptions were broadly defined as judgments on the degree to which decisionmaking within an organization is viewed as just and fair (Lind and Tyler, 1988; Cohen-Charash and Spector, 2001; Colquitt, Conlan, Wessen, Porter, and Ng, 2001). These judgments, in turn, impact other attitudes and behaviors of employees. Theory on procedural justice perceptions considers both formal rules and the interpersonal

treatment that occurs during decisionmaking, linking objective and subjective elements (Tyler and Balder, 2003; DeCramer and Tyler, 2005). Procedural justice theory reminds scholars that an agency can be in compliance with procedural requirements, while at the same time its employees or clients may report low levels of procedural justice perceptions.

The concept is often measured using a scheme developed by Leventhal (1980), who proposed six criteria by which procedural justice could be measured: consistency, bias-suppression, accuracy, correctability, voice, and ethicality. Frequently, these criteria are used as determinants of other workplace attitudes and behaviors such as satisfaction, organizational citizenship behavior, and turnover. Across a variety of settings, these justice rules are used to make procedural justice evaluations; procedural justice evaluations influence levels of group commitment and loyalty; and justice-informed levels of commitment and loyalty motivate people to act jointly in support of the groups to which they belong (Lind and Tyler, 1988; Lind, Kulik, Ambrose, and deVera Park, 1993; Lind, 2001; Tyler and Lind, 1992; Tyler and Blader, 2003; Blader and Tyler, 2003).

Despite its relevance to public administration research, few public administration or public personnel scholars explicitly examine the concept of procedural justice in government settings. Furthermore, social psychologists conducting research on social justice overlook public employees, ignoring the significant amount of survey data available. Although the research presented here included analyses that verified published findings, it also contributed unique assessments. Management status and the degree to which unionization influences organization-directed attitudes is largely ignored in the literature. Case studies evaluating the unique contributions of organizational culture are also not found in existing research. Likewise, the

degree to which behavior is affected by procedural justice perceptions is theorized, poorly measured, and conflicting. This study addresses these shortcomings.

### Summary of Results

The objectives of this dissertation were three-fold: to describe the perceptions of procedural justice determinants of federal employees in 2005, to understand what influences procedural justice perceptions, and to assess how procedural justice determinants influence other attitudes and behaviors important to organizational effectiveness. Federal employees were found to have perceptions of procedural justice determinants that were more positive than negative. Furthermore, significant differences existed between managers and employees, and between employees paying union dues and those who did not.

Perceptions of voice, consistency, bias-suppression, correctability, ethicality, and accuracy influenced perceptions of procedural justice. Case studies at NASA and TSA underscored the importance of organizational context in understanding what influences procedural justice determinants. In particular, the case studies revealed that, although NASA is at the top of the federal government in terms of fairness perceptions, it does not mean that everything runs smoothly in the eyes of employees. Conversely, TSA is highly troubled in terms of employee perceptions of procedural justice indicators. Because of its security-driven mission, decisionmaking cannot be entirely transparent to employees, influencing perceptions that actions are arbitrary and biased.

Existing research findings indicating procedural justice determinants would have a positive relationship with satisfaction and the propensity to engage in citizenship behavior, and a negative relationship with turnover intentions were obtained. The unique analyses regarding the

effect of management status provided only partial confirmation of hypotheses. First, procedural justice determinants of managers and employees make a significant contribution to organizational attitudes. Second, the relationship between management status, procedural justice determinants, and other attitudes is best studied by differentiating between levels of management. Third, the direction and significance of the association varies according to management status, underscoring the importance of differentiating between levels of management. Fourth, when management levels are grouped together, the association between employee perceptions of fairness determinants and other attitudes is no different from manager perceptions of fairness determinants and other attitudes. These findings are important because position in the organization is either ignored altogether (for example see Ambrose and Schminke 2003; Moorman 1991; Alexander and Ruderman 1987; Blader and Tyler 2003), focused exclusively on line employees' procedural justice perceptions (for example see Folger and Konovsky 1989; Ball Trevino and Sims 1993), or exclusively on managers' procedural justice perceptions (for example see Korsgaard, Schweiger, and Sapienza 1995; Wade, O'Reilly and Pollock 2006; Bagdadli, Roberson and Paoletti 2006).

The management findings suggest a number of implications. The lack of differences when management status is grouped into one large category would lead us to believe that managers do not have different information on the fairness with which decisions are made. However, the more detailed analysis reveals the opposite. Different perceptions of fairness among employees, supervisors, managers, and executives create interesting challenges for agencies trying to institute various reforms. Lower supervisor perceptions are particularly troublesome. If supervisors do not trust change initiatives, it decreases the likelihood that the line employees reporting directly to them will be supportive of the changes, limiting the success of



initiatives. Likewise, managers and executives will be compelled to work harder to convince line employees that their more optimistic view of organizational fairness is worth trusting, despite the misgivings of immediate supervisors.

Procedural justice determinants are important to both unionized and non-unionized line employees. However, these differences only exhibit a meaningful impact when assessing turnover intentions, which is not the case for either satisfaction or the propensity to engage in citizenship behavior. This result was consistent regardless of how unionization was defined or when the sample was limited to organizations with a minimal level of union density. Unions, in and of themselves, do not make the relationship between procedural justice determinants, satisfaction, and the propensity to engage in citizenship behavior any better. Importantly, however, unions also do not make the situation any worse. As noted previously, this result may be due to the weakness of federal unions. Research considering procedural justice and unions typically focuses on the impact of procedural justice perceptions on attitudes and behaviors directed towards the union (Skarlicki and Latham 1996 and 1997; Fryxell and Gordon 1989; Fuller and Hester 2001; Mellor, Barnes-Farrell, and Stanton 1999; Miceli and Mulvey 2000; Tremblay and Roussel 2001; Aryee and Chay 2001) and not the extent to which unionization may moderate the impact of procedural justice determinants on employer-directed attitudes and behaviors.

In addition to the management and union analyses making unique contributions to organizational justice research, the analysis of the relationship between procedural justice determinants reported in 2005 and complaint rates in 2006 provided important results. First, a causal relationship exists and the nature of the association is curvilinear; as procedural justice determinants increase, the filing of complaints initially increases and then decreases. This new

finding helps to explain conflicting results in existing literature (Youngblood, Trevino, and Favia, 1992; Milliken, Morrison, and Hewlin, 2003; Rudman, Borgida, and Robertson, 1995). Second, ADR efforts exhibit no impact on complaint rates. This is disappointing because the policy was designed specifically to reduce complaint rates. Agencies view this as an important goal because of the perception that complaint procedures that are expensive, time-consuming, and confrontational. Third, alternative personnel systems, whether implemented or authorized, reduced the filing of complaints. As noted previously, no other study of civil service reform assesses the impact of reform on actual behavior.

The findings presented here are derived from the 2005 Merit Principles Survey, which targeted a stratified random sample of federal employees. As a result, survey weights were applied for all analyses. Survey items were selected for inclusion in an additive index of procedural justice determinants based on their consistency with Leventhal (1980) and survey items used by other scholars (Colquitt, 2001; Moorman, 1991; Folger and Konovsky, 1989). The external validity of the design is arguably higher than in previous studies examining procedural justice. It included a large number of organizations, in multiple locations, with diverse missions, a large variety of professions, and across all levels of organizational hierarchies. Furthermore, the stratified random sample design and the application of design weights ensure that the sample is representative of the federal employee population. Typically, procedural justice research focuses on one organization or a small number of organizations with similar missions – manufacturing or grocery stores for example (Mayer et al., 2007; Ehrhart, 2004; Burton et al., 2008). As a result of the design and the inclusion of multiple organizations, the results are highly generalizable across the public sector.

### Directions for Future Research

The results, while supporting some hypotheses and refuting others, provide suggestions for future research. In particular, the association between procedural justice determinants and civil service reforms deserves further study. Namely, do employees have different fairness perceptions of various aspects of reform and what are the implications of this? Decisionmakers could use this information when designing policies. Additionally, procedural justice determinants could be assessed as agencies implement new policies to identify and resolve problems. The six procedural justice criteria can serve as a toolkit for addressing poor fairness perceptions either in preparation for reform, or in response to reforms that are not performing as intended.

Public administration research includes examination of the differences between the public and private sector. One avenue for future research includes the consideration of differences between procedural justice perceptions of the public and private sector. Namely, with the added rules for personnel management in the public sector, does this then translate into higher levels of procedural justice perceptions among public sector employees?

Since procedures are a key tool for ensuring the accountability of the bureaucracy, it may also be useful to return to earlier procedural justice research which assessed the relationship between various government program decisionmaking procedures and public perceptions of government. In particular, researchers could link a program's rules and implementation to procedural justice determinants, and then to the satisfaction of program participants and/or program performance. This may be particularly important for programs in which fair process is an important goal, such as the hearing of appeals for disability benefits, the resolution of discrimination complaints, or the application for immigration status.

The relationship between procedural justice determinants and unionization deserves further study. Traditional labor economist models assume that unions can negotiate for better pay and benefits and that people join unions when they believe unions can increase wages. However, this is not the case for a vast majority of federal employees. In fact, there is a large free-rider problem: employees are covered by union agreements but neither choose to pay union dues nor are they required to pay any sort of minimal maintenance fee. Models from the labor economist literature do not consider psychological factors such as perceptions of procedural fairness or its determinants in the workplace which may be important in environments in which pay is not negotiable. Likewise, research on perceptions of procedural fairness considers why unions are formed but ignores the topic of dues payment. One possibility is that an increase of fairness perceptions could be associated with the payment of union dues if the individual attributes the justice climate in the organization to the union. Alternatively, union dues payment may increase when procedural justice perceptions decrease as individuals decide to support unions to either represent their grievances or improve the work environment.

Finally, the analyses raise a number of questions about measurement. For example, as organizations become more flexible and the power of organizational hierarchy is lessened as the reach of policy networks increases and formalizes, it is time scholars revisit the six procedural justice indicators. As questioned previously, is it appropriate to assume the Leventhal criteria are *all* relevant in organizations that are more flexible and responsive than organizations in the past, or should some be retained, others abandoned, and still others added? It has been suggested that, in organic organizations, concerns about consistency and correctability may become less important as the organization becomes less interested in institutionalized procedures (Ambrose and Schminke, 2001). For example, as organizational structure becomes more fluid and less

hierarchical, is it appropriate to assume that employees should be treated in a one-size-fits all manner? Is it reasonable to expect agencies to have stable policies on grievances and appeals when project priorities and reporting relationships change more frequently than in the past? It may be time for procedural justice scholars to develop a measurement scheme that varies according to the degree of institutionalization or hierarchy in the organization, or the frequency of organizational change.

Measurement questions are additionally pressing when considering the contribution of case studies. Procedural justice research is characterized by a notable absence of qualitative research. Except for two early studies using the critical incident method (Greenberg, 1986; Sheppard and Lewicki, 1987), scholars do not typically conduct in-depth examination of the norms and culture of organizations which directly influence procedural justice perceptions, especially in terms of how rules are implemented and how people are treated during implementation. Although Colquitt (2001) validated a set of survey items to capture procedural justice indicators, a similar set of questions or protocols is missing for qualitative research. In the research conducted here, answers to questions about one criterion could easily have been provided in response to another criterion. A qualitative standard could also serve as a diagnostic and training tool to be used by managers. These case studies could also inform efforts to determine the appropriateness of the Leventhal criteria in more flexible and responsive organizations.

### Conclusion

Procedural justice theory provides public administration scholars a tool for evaluating the positive psychological value of organizational rules. While some view these rules as “red tape,”

others see rules as protections against arbitrary management decisionmaking. On the whole, more federal employees exhibit higher perceptions of procedural justice determinants than exhibit low perceptions. More study is needed on the association between unionization and procedural justice determinants. Findings indicated the importance of differentiating between multiple levels of management and suggested that the perceptions of managers will not be entirely consistent with each other. Importantly, procedural justice determinants exhibited a curvilinear relationship with the filing of complaints, and alternative personnel systems appear to decrease the filing of complaints. These results inform important public administration questions and address gaps in organizational justice research. Individuals preoccupied with granting management flexibility and managing for results would benefit by not underestimating the contribution of procedures to important measures of workplace attitudes. Simply abolishing rules without thoughtful study may actually do more harm than good.

## WORKS CITED

- Aberbach, J., & Rockman, B. (2002). Conducting and Coding Elite Interviews. *PS: Political Science and Politics*, 35(4), 673-676.
- Adams, J. S. (1965). Iniquity in Social Exchange. *Advances in Experimental Social Psychology*, 2, 167-297.
- Adams-Roy, J., & Barling, J. (1998). Predicting the Decision to Confront or Report Sexual Harassment. *Journal of Organizational Behavior*, 19, 329-336.
- Agresti, A., & Finlay, B. (1997). *Statistical Methods for the Social Sciences* (3rd ed.). Upper Saddle River, NJ: Prentice-Hall.
- Ai, C., & Norton, E. (2003). Interaction Terms in Logit and Probit Models. *Economic Letters*, 8, 123-129.
- Alexander, S., & Ruderman, M. (1987). The Role of Procedural and Distributive Justice in Organization Behavior. *Social Justice Research*, 1, 117-198.
- Allison, P. (2001). *Missing Data* (Sage University Papers Series on Quantitative Applications in the Social Sciences, series no. 07-136). Thousand Oaks, CA: Sage Publications.
- Ambrose, M., & Schminke, M. (2001). Are Flexible Organizations the Death Knell for the Future of Procedural Justice? In R. Cropanzano (Ed.), *Justice in the Workplace: From Theory to Practice, vol. II* (pp. 229-244). Mahwah River, NJ: Lawrence Erlbaum Associates, Publishers.
- Ambrose, M. L., & Schminke, M. (2003). Organization Structure as a Moderator of the Relationship Between Procedural Justice, Interactional Justice, Perceived Organizational Support, and Supervisory Trust. *Journal of Applied Psychology*, 88(2), 295-305.
- Aryee, S., & Chay, Y. (2001). Workplace Justice, Citizenship Behavior, and Turnover Intentions in a Union Context: Examining the Mediating Role of Perceived Union Support and Union Instrumentality. *Journal of Applied Psychology*, 86(1), 154-160.
- Bagdadli, S., Roberson, Q., & Paoletti, F. (2006). The Mediating Role of Procedural Justice in Responses to Promotion Decisions. *Journal of Business and Psychology*, 21(1), 83-102.

- Ball, G., Trevino, L., & Sims, H. (1993). Justice and Organizational Punishment: Attitudinal Outcomes of Disciplinary Events. *Social Justice Research*, 6(1), 39-67.
- Barling, J., Fullager, C., & Kelloway, E. (1992). *The Union and Its Members: A Psychological Approach*. New York: Oxford University Press.
- Bauer, T. N., Truxillo, D. M., Sanchez, R. J., Craig, J. M., Ferrar, P., & Campion, M. A. (2001). Applicant Reactions to Selection: Development of the Selection Procedural Justice Scale. *Personnel Psychology*, 54, 387-419.
- Bertelli, A. (2007). Determinants of Bureaucratic Turnover Intention: Evidence from the Department of the Treasury. *Journal of Public Administration Research and Theory*, 17(2), 235-258.
- Bingham, L., Chesmore, G., Moon, Y., & Napoli, L. (2000). Mediating Employment Disputes at the United States Postal Service: A Comparison of In-House and Outside Neutral Mediator Models. *Review of Public Personnel Administration*, 20(1), 5-19.
- Blader, S. L. (2007). What Determines People's Fairness Judgments? Identification and Outcomes Influence Procedural Justice Evaluations Under Uncertainty. *Journal of Experimental Social Psychology*, 43(2007), 986-994.
- Blader, S. L., & Tyler, T. R. (2003a). A Four-Component Model of Procedural Justice: Defining the Meaning of a "Fair" Process. *Personality and Social Psychology Review*, 29(6), 747-758.
- Blader, S. L., & Tyler, T. R. (2003b). What Constitutes Fairness in Work Settings? A Four-Component Model of Procedural Justice. *Human Resource Management Review*, 13, 107-126.
- Blau, P. (1964). *Exchange and Power in Social Life*. New York: Wiley.
- Board of Regents v. Roth* (1972). 408 U.S. 564.
- Bozeman, B. (2000). *Bureaucracy and Red Tape*. New Jersey: Prentice Hall.
- Brambor, T., Clark, W., & Golder, M. (2006). Understanding Interaction Models: Improving Empirical Analyses. *Political Analysis*, 14, 63-82.
- Brass, D., Galaskiewick, J., Greve, H., & Tsai, W. (2004). Taking Stock of Networks and Organizations: A Multilevel Perspective. *Academy of Management Journal*, 47(6), 795-817.
- Brockner, J., Ackerman, G., & Fairchild, G. (2001). When Do Elements of Procedural Fairness Make a Difference? A Classification of Moderating Influences. In J. Greenberg & R.



- Cropanzano (Eds.), *Advances in Organizational Justice*. Palo Alto, CA: Stanford University Press.
- Burton, J. P., Sablinski, C. J., & Sekiguchi, T. (2008). Linking Justice, Performance, and Citizenship via Leader-Member Exchange. *Journal of Business and Psychology*, 23(2008), 51-61.
- Choi, J. (2008). Event Justice Perceptions and Employees' Reactions: Perceptions of Social Entity Justice as a Moderator. *Journal of Applied Psychology*, 93(3), 513-528.
- Cleveland Board of Education v. Lauderhill* (1985). 470 U.S. 532.
- Cohen-Charash, Y., & Spector, P. E. (2001). The Role of Justice in Organizations: A Meta-Analysis. *Organizational Behavior and Human Decision Processes*, 86(2), 278-321.
- Colquitt, J. A. (2001). On the Dimensionality of Organizational Justice: A Construct Validation of a Measure. *Journal of Applied Psychology*, 86(3), 386-400.
- Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the Millennium: A Meta Analytic Review of 25 Years of Organizational Justice Research. *Journal of Applied Psychology*, 86(3), 425-445.
- Colquitt, J. A., Greenberg, J., & Zapata-Phelan, C. P. (2005). What is Organizational Justice? A Historical Overview. In J. Greenberg & J. A. Colquitt (Eds.), *Handbook of Organizational Justice* (pp. 3-58). London: Routledge.
- Congressional Budget Office (2004). *S. 2484 Department of Veterans Affairs Health Care Personnel Enhancement Act of 2004*. Washington, D.C.: U.S. Government Printing Office.
- Congressional Research Service (2004). *Legal Overview of P.L. 107-174, the Notification and Federal Employee Antidiscrimination and Retaliation Act of 2002* (Order Code RS21778). Washington, D.C.: U.S. Government Printing Office.
- Congressional Research Service (2005). *DOD's National Security Personnel System: Provisions of Law and Implementation Plans* (Order Code RL31954). Washington, D.C.: U.S. Government Printing Office.
- Congressional Research Service (2008). *Pay-for-Performance: The National Security Personnel System* (Order Code RL34673). Washington, D.C.: U.S. Government Printing Office.
- Connick v. Myers* (1983). 75 L. Ed 2d 708.
- Cooper, P. (1985). Conflict or Constructive Tension: The Changing Relationship of Judges and Administrators. *Public Administrative Review*, 45, 643-652.

- Cropanzano, R., Perhar, C. A., & Chen, P. (2002). Using Social Exchange Theory to Distinguish Procedural from Interactional Justice. *Group Organization Management*, 27(3), 324-351.
- Dailey, R. C., & Kirk, D. J. (1992). Distributive and Procedural Justice as Antecedents of Job Satisfaction and Intent to Turnover. *Human Relations*, 45(3), 305-317.
- Daley, D. (2007). If a Tree Falls in the Forest: The Effect of Grievances on Employee Perceptions of Performance Appraisal, Efficacy, and Job Satisfaction. *Review of Public Personnel Administration*, 27, 281-296.
- Deckop, J. R., Mangel, R., & Circa, C. C. (1999). Getting More Than You Pay For: Organizational Citizenship Behavior and Pay for Performance Plans. *Academy of Management Journal*, 42, 420-428.
- DeCremer, D., & Tyler, T. R. (2005). Managing Group Behavior: The Interplay Between Procedural Fairness, Self, and Cooperation. In M. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 37, pp. 151-218). New York: Academic Press.
- DeVillis, R. (2003). *Scale Development: Theory and Applications* (2nd ed.). Thousand Oaks: Sage Publications.
- Dexter, L. (1970). *Elite and Specialized Interviewing*. Evanston, IL: Northwestern University Press.
- Dillman, D., Eltinge, J., Groves, R., & Little, R. (2002). Survey Nonresponse in Design, Data Collection, and Analysis. In R. Groves, D. Dillman, J. Eltinge & R. Little (Eds.), *Survey Nonresponse* (pp. 3-26). New York: John Wiley and Sons, Inc.
- Dorofeev, S., & Grant, P. (2006). *Statistics for Real-Life Sample Surveys: Non-Simple Random Samples and Weighted Data*. Cambridge, UK: Cambridge University Press.
- Ehrhart, M. G. (2004). Leadership and Procedural Justice Climate as Antecedents of Unit-Level Organizational Citizenship Behavior. *Personnel Psychology*, 57, 61-94.
- Fahr, J.-L., Earley, P. C., & Lin, S.-C. (1997). Impetus for Action: A Cultural Analysis of Justice and Organizational Citizenship Behavior in Chinese Society. *Administrative Science Quarterly*, 42, 421-444.
- Fassina, N. E., Jones, D. A., & Uggerslev, K. L. (2008). Relationship Clean-Up Time: Using Meta-Analysis and Path Analysis to Clarify Relationships Among Job Satisfaction, Perceived Fairness, and Citizenship Behaviors. *Journal of Management*, 34(2), 161-188.
- Felstiner, W., Abel, R., & Sarat, A. (1980). The Emergence and Transformation of Disputes: Naming, Blaming, Claiming. *Law and Society Review*, 15(3), 631-654.

- Flyvbjerg, B. (2001). *Making Social Science Matter: Why Social Inquiry Fails and How it Can Succeed Again*. Cambridge, UK: Cambridge University Press.
- Folger, R., & Cropanzano, R. (2001). Fairness Theory: Justice as Accountability. In J. Greenberg & R. Cropanzano (Eds.), *Advances in Organizational Justice* (pp. 1-55). Palo Alto, CA: Stanford University Press.
- Folger, R., & Konovsky, M. A. (1989). Effects of Procedural and Distributive Justice on Reactions to Pay Raise Decisions. *Academy of Management Journal*, 32(1), 115-130.
- Fryxell, G., & Gordon, M. E. (1989). Workplace Justice and Job Satisfaction as Predictors of Satisfaction with Union and Management. *Academy of Management Journal*, 32(4), 851-866.
- Fuller, J. B., & Hester, K. (1998). The Effect of Labor Relations Climate on the Union Participation Process. *Journal of Labor Research*, 19(1), 1096-1105.
- Fuller, J. B., & Hester, K. (2001). A Closer Look at the Relationship Between Justice Perceptions and Union Participation. *Journal of Applied Psychology*, 86(6), 1096-1105.
- Giles, W. F., Findley, H. M., & Field, H. S. (1997). Procedural Fairness in Performance Appraisal: Beyond the Review Session. *Journal of Business and Psychology*, 11, 493-506.
- Goldman, B. M. (2003). The Application of Referent Cognitions Theory to Legal-Claiming by Terminated Workers: The Role of Organizational Justice and Anger. *Journal of Management*, 29(5), 705-728.
- Gordon, M. E., & Fryxell, G. (1993). The role of interpersonal justice in organizational grievance systems. In R. Cropanzano (Ed.), *Justice in the Workplace: Approaching Fairness in Human Resource Management* (pp. 231-256). Hillsdale, NJ: Lawrence Elbaum Associates.
- Greenberg, J. (1986). Determinants of Perceived Fairness of Performance Evaluations. *Journal of Applied Psychology*, 71(2), 340-342.
- Greenberg, J. (1990). Organizational Justice: Yesterday, Today, and Tomorrow. *Journal of Management*, 16(2), 399-432.
- Groves, R., Fowler, F., Couper, M., Lepkowski, J., Singer, E., & Tourangeau, R. (2004). *Survey Methodology*. Hoboken, NJ: John Wiley and Sons, Inc.
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth Generation Evaluation*. Thousand Oaks, CA: Sage Publications.

- Hays, S., & Sowa, J. (2006). A Broader Look at the "Accountability" Movement: Some Grim Realities in State Civil Service Systems. *Review of Public Personnel Administration*, 26(2), 102-117.
- Higham, S., & O'Harrow, R. (2005, June 30). The High Cost of the Rush to Security: TSA Lost Control of Over \$300 Million Spent by Contractor to Hire Airport Screeners After 9/11. *The Washington Post*, p. A1.
- Hindera, J., & Young, C. (1998). Representative Bureaucracy: The theoretical Implications of Statistical Interaction. *Political Research Quarterly*, 51(3), 655-671.
- Hirschman, A. O. (1970). *Exit, Voice, and Loyalty*. Boston, MA: Harvard University Press.
- Hitt, M., & Tyler, B. (1991). Strategic Decision Models: Integrating Different Perspectives. *Strategic Management Journal*, 12, 327-351.
- Homans, G. C. (1981). *Social Behaviour: Its Elementary Forms*. London: Routledge and Kegan Paul.
- Houlden, P., LaTour, S., Walker, L., & Thibaut, J. (1978). Preferences for Modes of Dispute Resolution as a Function of Process and Decision Control. *Journal of Experimental Social Psychology*, 14, 13-30.
- Ibarra, H., & Andrews, A. (1993). Power, Social Influence, and Sense Making: Effects of Network Centrality and Proximity on Employee Perceptions. *Administrative Science Quarterly*, 38(2), 277-303.
- James, K. (1993). The Social Context of Organizational Justice: Cultural, Intergroup, and Structural Effects on Justice Behaviors and Perceptions. In R. Cropanzano (Ed.), *Justice in the Workplace: Approaching Fairness in Human Resources Management* (pp. 21-50). Hillsdale, NJ: Erlbaum.
- Jawahar, I. M. (2007). The Influence of Perceptions of Fairness on Performance Appraisal Reactions. *Journal of Labor Research*, 28, 735-754.
- Kalton, G., & Cervantes, I. (2003). Weighting Methods. *Journal of Official Statistics*, 19(2), 81-97.
- Kanfer, R., Sawyer, J., Earley, P. C., & Lind, E. A. (1987). Participation in Task Evaluation Procedures: The Effect of Influential Opinion Expression and Knowledge of Evaluative Criteria on Attitudes and Performance. *Social Justice Research*, 1, 235-249.
- Kaufman, H. (1977). *Red Tape: Its Origins, Uses and Abuses*. Washington, D.C.: The Brookings Institution.

- Kellough, J. E., & Nigro, L. G. (2002). Pay for Performance in Goergia State Government: Employee Perspectives on GeorgiaGain After 5 Years. *Review of Public Personnel Administration*, 22, 146-166.
- Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of Behavioral Research*. New York: Thomson Learning.
- Kiesler, S., & Cummings, J. (2002). What Do We Know about Proximity and Distance in Work Groups? A Legacy of Research. In P. Hinds & S. Kiesler (Eds.), *Distrubted Work* (pp. 21-50). Cambridge, MA: MIT Press.
- Kim, J., & Mueller, C. (1978). *Introduction to Factor Analysis: What It Is and How to Do It* (Sage University Paper Series on Quantitative Applications in the Social Sciences, series no. 07-13). Thousand Oaks, CA: Sage Publications.
- Kim, W. C., & Mauborgne, R. A. (1993). Procedural Justice, Attitudes, and Subsidiary Top Management Compliance with Multinationals' Corporate Strategic Decisions. *Academy of Management Journal*, 36(3), 502-526.
- Kohlberg, L. (1969). Stage and Sequence: The Cognitive-Developmental Approach to Socialization. In D. A. Goslin (Ed.), *Handbook of Socialization Theory and Research* (pp. 347-480). New York: Rand McNally.
- Konovsky, M. A., & Folger, R. (1991). The Effects of Procedures, Social Accounts, and Benefits Level on Victims' Layoff Reactions. *Journal of Applied Psychology*, 21, 630-650.
- Konovsky, M. A., & Pugh, S. D. (1994). Citizenship Behavior and Social Exchange. *Academy of Management Journal*, 37(3), 656-669.
- Korsgaard, M. A., & Roberson, L. (1995). Procedural Justice in Performance Evaluation: The Role of Instrumental and Non-Instrumental Voice in Performance Appraisal Discussions. *Journal of Management*, 21(4), 657-669.
- Korsgaard, M. A., Schweimer, D. M., & Spazienza, H. (1995). Building Commitment, Attachment and Trust in Strategic Decision-Making Teams: The Role of Procedural Justice. *Academy of Management Journal*, 38(1), 60-84.
- LaTour, S. (1978). Determinants of Participant and Observer Satisfaction with Adversary and Inquisitorial Modes of Adjudication. *Journal of Personality and Social Psychology*, 36, 1531-1545.
- LaTour, S., Houlden, P., Walker, L., & Thibaut, J. (1976). Procedure: Transnational Perspectives and Preferences. *Yale Law Review*, 86, 258-290.

- Lee, C. (1995). Prosocial Organizational Behaviors: The Roles of Workplace Justice, Achievement Striving, and Pay Satisfaction. *Journal of Business and Psychology*, 10(2), 197-206.
- Lee, C., & Farh, J.-L. (1999). The Effects of Gender in Organizational Justice Perception. *Journal of Organizational Behavior*, 20, 133-143.
- Leventhal, G. (1980). What Should be Done with Equity Theory? New Approaches to the Study of Fairness in Social Relationships. In K. Gergen, M. Greenbers & R. Willis (Eds.), *Social Exchange: Advances in Theory and Research* (pp. 27-55). New York: Plenum Press.
- Leventhal, G., Karuza, J., & Fry, W. R. (1980). Beyond Fairness: A Theory of Allocation Preferences. In G. Mikula (Ed.), *Justice and Social Interaction* (pp. 167-218). New York: Springer-Verlag.
- Lewin, D. (1987). Dispute Resolution in the Nonunion Firm: A Theoretical and Empirical Analysis. *The Journal of Conflict Resolution*, 31(3), 465-502.
- Lind, E. A. (2001). Fairness Heuristic Theory: Justice Judgments as Pivotal Cognitions in Organizational Relations. In J. Greenberg & R. Cropanzano (Eds.), *Advances in Organizational Justice* (pp. 56-88). Palo Alto, CA: Stanford University Press.
- Lind, E. A., Erickson, B. E., Friedland, N., & Dickensburger, M. (1987). Reactions to Procedural Models for Adjudicative Conflict Resolution: A Cross-National Study. *Journal of Conflict Resolution*, 22, 318-341.
- Lind, E. A., Kulik, C. T., Ambrose, M., & deVera Park, M. V. (1993). Individual and Corporate Dispute Resolution: Using Procedural Fairness as a Decision Heuristic. *Administrative Science Quarterly*, 38, 224-251.
- Lind, E. A., Kurtz, S., Musante, L., Walker, L., & Thibaut, J. (1980). Procedure and Outcome Effects on Reactions to Adjudicated Resolution of Conflicts of Interest. *Journal of Personality and Social Psychology*, 39, 643-653.
- Lind, E. A., & Lissak, R. I. (1985). Apparent impropriety and and procedural fairness judgments. *Journal of Experimental Social Psychology*, 21, 19-29.
- Lind, E. A., Lissak, R. I., & Conlan, D. E. (1983). Decision Control and Process Control Effects on Procedural Fairness Judgments. *Journal of Applied Social Psychology*, 13, 338-350.
- Lind, E. A., & Tyler, T. R. (1988). *The Social Psychology of Procedural Justice*. New York: Plenum Press.
- Lindquist, S., and Condrey, S. (2006). Public Employment Reforms and Constitutional Due

- Process. In J. Kellough and L. Nigro (Eds.), *Civil Service Reform in the States: Personnel Policy and Politics at the Subnational Level* (pp. 95-116). Albany, NY: SUNY Press.
- Lohr, S. (1999). *Sampling: Design and Analysis*. Pacific Grove, CA: Brooks/Cole Publishing Company.
- Long, J. (1997). *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage Publications.
- Long, J.S., & Freese, J. (2006). *Regression Models for Categorical Dependent Variables Using STATA* (2<sup>nd</sup> ed.). College Station: TX: STATA Press.
- Mani, B. (2004). The Employer's Advantage in Sexual Harassment Cases: How the Courts have Discouraged the Victims of Sexual Harassment. *Review of Public Personnel Administration*, 24(1), 41-69.
- Marker, D., Judkins, D., & Wonglee, M. (2002). Large-Scale Imputation for Complex Surveys. In R. Groves, D. Dillman, J. Eltinge & R. Little (Eds.), *Survey Nonresponse* (pp. 329-342). New York: John Wiley and Sons, Inc.
- Marshall, C. (1984). Elites, Bureaucrats, Ostriches and Pussycats: Managing Research in Policy Settings. *Anthropology and Education Quarterly*, 15, 235-251.
- Mason, R., Lesser, V., & Traugott, M. (2002). Effect of Item Nonresponse on Nonresponse Error and Inference. In R. Groves, D. Dillman, J. Eltinge & R. Little (Eds.), *Survey Nonresponse* (pp. 149-162). New York: John Wiley and Sons, Inc.
- Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating Justice and Social Exchange: The Differing Effects of Fair Procedures and Treatment on Work Relationships. *Academy of Management Journal*, 4(4), 738-748.
- Matthews v. Eldridge* (1976). 424 U.S. 319.
- Maxwell, J. (2005). *Qualitative Research Design: An Interactive Approach* (2nd ed. 41). Thousand Oaks, CA: Sage Publications.
- Mayer, D., Nishii, L., Schneider, B., & Goldstein, H. (2007). Precursors and Products of Justice Climates: Group Leader Antecedents and Employee Attitudinal Consequences. *Personnel Psychology*, 60, 929-963.
- McFarlin, D. B., & Sweeney, P. D. (1992). Distributive and Procedural Justice as Predictors of Satisfaction with Personal and Organizational Outcomes. *Academy of Management Journal*, 35, 626-637.

- Meier, K., & O'Toole, L. (2006). *Bureaucracy in a Democratic State: A Governance Perspective*. Baltimore, MD: Johns Hopkins University Press.
- Mellor, S., Barnes-Farrell, J., & Stanton, J. (1999). Unions as Justice-Promoting Organizations: The Interactive Effect of Ethnicity, Gender, and Perceived Union Effectiveness. *Sex Roles*, 40(5-6), 331-346.
- Miceli, M. P., & Mulvey, P. (2000). Consequences of Satisfaction With Pay Systems: Two Field Studies. *Industrial Relations*, 39(1), 62-87.
- Miles, M., & Huberman, A. (1994). *An Expanded Sourcebook: Qualitative Data Analysis* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Milliken, F. J., Morrison, E. W., & Hewlin, P. F. (2003). An Exploratory Study of Employee Silence: Issues that Employees Don't Communicate Upward and Why. *Journal of Management Studies*, 40(6), 1453-1476.
- Moorman, R. H. (1991). Relationship Between Organizational Justice and Organizational Citizenship Behaviors: Do Fairness Perceptions Influence Employee Citizenship? *Journal of Applied Psychology*, 76(6), 845-855.
- Morrison, E. W., & Milliken, F. J. (2000). Organizational Silence: A Barrier to Change and Development in a Pluralistic World. *Academy of Management Review*, 25(4), 706-725.
- Naumann, S. E., & Bennett, N. (2000). A Case for Procedural Justice Climate: Development and Test of a Multilevel Model. *Academy of Management Journal*, 43(5), 881-889.
- Near, J., & Miceli, M. P. (2008). Wrongdoing, Whistle-Blowing, and Retaliation in the U.S. Government: What Have Researchers Learned From the Merit Systems Protection Board (MSPB) Survey Results? *Review of Public Personnel Administration*, 28, 263-281.
- Niehoff, B. P., & Moorman, R. H. (1993). Justice as a Mediator of the Relationship Between Methods of Monitoring and Organizational Citizenship Behavior. *Academy of Management Journal*, 36(3), 527-556.
- Nigro, L. G., & Kellough, J. E. (2000). Civil Service Reform in Georgia: Going to the Edge? *Review of Public Personnel Administration*, 20(4), 41-54.
- Nigro, L. G., Nigro, F., & Kellough, J. E. (2007). *The New Public Personnel Administration* (6th ed.). Belmont, CA: Thompson Wadsworth.
- Norton, E., Wang, H., & Ai, C. (2004). Computing Interaction Effects and Standard Errors in Logit and Probit Models. *The Stata Journal*, 4(2), 154-167.



- O'Toole Jr, L. J., & Meier, K. J. (2003). Plus ça Change: Public Management, Personnel Stability, and Organizational Performance. *Journal of Public Administration Research and Theory*, 13(1), 43.
- Organ, D. (1988). *Organizational Citizenship Behavior: The Good Soldier Syndrome*. Lexington, MA: D.C. Heath.
- Organ, D., Podsakoff, P., & MacKenzie, S. (2005). *Organizational Citizenship Behavior: Its Nature, Antecedents, and Consequences*. Thousand Oaks, CA: Sage.
- Pagan, J., & Franklin, A. (2003). Understanding Variation in the Practice of Employee Discipline. *Review of Public Personnel Administration*, 23(1), 61-77.
- Park, S., & Rainey, H. (2007). Antecedents, Mediators, and Consequences of Affective, Normative, and Continuance Commitment: Empirical Tests of Commitment Effects in Federal Agencies. *Review of Public Personnel Administration*, 27(3), 197-226.
- Pearce, & Perry (1983). Federal Merit Pay: A Longitudinal Analysis. *Public Administrative Review*, 43, 315-325.
- Pfeffer, J. (1983). Organizational Demography. *Research in Organizational Behavior*, 5, 299-357.
- Pfefferman, D. (1993). The Role of Sampling Weights When Modeling Survey Data. *International Statistical Review*, 61(2), 317-337.
- Podsakoff, P., & MacKenzie, S. (1994). An Examination of the Psychometric Properties and Nomological Validity of Some Revised and Reduced Substitutes for Leadership Scales. *Journal of Applied Psychology*, 79(5), 702-713.
- Rainey, H. (1997). The "How Much Process is Due" Debate. In P. Cooper & C. Newland (Eds.), *Handbook of Public Administration and Law*. San Francisco, CA: Jossey-Bass Publishers.
- Rainey, H. (2003). *Understanding and Managing Public Organizations* (3rd ed.). San Francisco, CA: Jossey-Bass Publishers.
- Rainey, H., & Bozeman, B. (2000). Comparing Public and Private Organizations: Empirical Research and the Power of the A Priori. *Journal of Public Administration Research and Theory*, 10(2), 447-469.
- Rainey, H., Facer, R., & Bozeman, B. (1995). *Repeated Findings of Sharp Differences Between Public and Private Managers' Perceptions of Personnel Rules*. Paper presented at the American Political Science Association.

- Reese, L., & Lindenberg, K. (2003). The Importance of Training on Sexual Harassment Policy Outcomes. *Review of Public Personnel Administration*, 23(3), 175-191.
- Reinke, S. (2003). Does the Form Really Matter? Leadership, Trust and the Acceptance of the Performance Appraisal Process. *Review of Public Personnel Administration*, 23(1), 23-27.
- Rice, R., & Aydin, C. (1991). Attitudes Toward New Organizational Technology: Network Proximity As a Mechanism for Social Information Processing. *Administrative Science Quarterly*, 36(2), 219-244.
- Roberts, K., & Young, W. (1997). Procedural Fairness, Return to Work, and the Decision to Dispute in Workers' Compensation. *Employee Responsibilities and Rights Journal*, 10(3), 193-212.
- Rosenbloom, D., & Bailey, M. (2003). What Every Public Personnel Manager Should Know About the Sonstitution. In S. Hays & R. Kearney (Eds.), *Public Personnel Administration: Problems and Prospects* (4th ed.). Upper Saddle River, NJ: Prentice-Hall.
- Rothwell, G., & Baldwin, J. (2006). Ethical Climates and Contextual Predictors of Whistleblowing. *Review of Public Personnel Administration*, 26(3), 216-244.
- Rubin, E. (2009). The Role of Procedural Justice in Public Personnel Management: Empirical Results From the Department of Defense. *Journal of Public Administration Research & Theory*, 19, 125-143.
- Rudman, L., Borgida, E., & Robertson, B. (1995). Suffering in Silence: Procedural Justice Versus Gender Socialization Issues in University Sexual Harassment Grievance Procedures. *Basic and Applied Social Psychology*, 17(4), 519-541.
- Scandura, T. A. (1997). Mentoring and Organizational Justice: An Empirical Investigation. *Journal of Vocational Behavior*, 51, 58-69.
- Scarpello, V., & Jones, F. F. (1996). Why Justice Matters in Compensation Decision Making. *Journal of Organizational Behavior*, 17, 285-299.
- Selden, S. (2006). The Impact of Discipline on the Use and Rapidity of Dismissal in State Governments. *Review of Public Personnel Administration*, 26(4), 335-355.
- Shapiro, D. L., & Kirkman, B. L. (1999). Employees' Reaction to the Change to Work Teams: The Influence of "Anticipatory" Injustice. *Journal of Organizational Change Management*, 12(1), 51-66.

- Sheppard, B. H., & Lewicki, R. J. (1987). Toward General Principles of Managerial Fairness. *Social Justice Research, 1*(2), 161-175.
- Skarlicki, D. P., & Folger, R. (1997). Retaliation in the Workplace: The Roles of Distributive, Procedural, and Interactional Justice. *Journal of Applied Psychology, 82*(3), 434-443.
- Skarlicki, D. P., & Latham, G. P. (1996). Increasing Citizenship Behavior Within a Labor Union: A Test of Organizational Justice Theory. *Journal of Applied Psychology, 81*(2), 161-169.
- Skarlicki, D. P., & Latham, G. P. (1997). Leadership Training in Organizational Justice to Increase Citizenship Behavior Within a Labor Union: A Replication. *Personnel Psychology, 50*, 617-633.
- Skitka, L. J. (2003). Of Different Minds: An Accessibility Identity Model of Justice Reasoning. *Personality and Social Psychology Review, 7*, 286-297.
- Smith, C., Organ, D., & Near, J. (1983). Organizational Citizenship Behavior: Its Nature and Antecedents. *Journal of Applied Psychology, 68*(4), 653-663.
- Spector, P. E. (2002). *Summated Rating Scale Construction* (Sage University Paper Series on Quantitative Applications in the Social Sciences, series no. 07-82). Thousand Oaks, CA: Sage Publications.
- Spell, C. S., & Arnold, T. J. (2007). Multi-Level Analysis of Organizational Justice Climate, Structure, and Employee Mental Health. *Journal of Management, 33*(5), 724-751.
- Steel, R. P., & Ovalle, N. K. (1984). A Review and Meta-Analysis of Research on the Relationship Between Behavioral Intentions and Employee Turnover. *Journal of Applied Psychology, 69*, 673-686.
- Stouffer, S. A., Suchman, E. A., DeVinney, L. C., Star, S. A., & Williams, R. M. J. (1949). *The American Soldier: Adjustment During Army Life, Volume 1*. Clinton, MA: Colonial Press.
- Sweeney, P. D., & McFarlin, D. B. (1997). Process and Outcome: Gender Differences in the Assessment of Justice. *Journal of Organizational Behavior, 18*, 83-98.
- Tajfel, H., & Turner, J. (1979). An Integrative Theory of Intergroup Conflict. In W. Austin & S. Worchel (Eds.), *The Social Psychology of Intergroup Relations* (pp. 56-65). Monterey, CA: Brooks Cole Publishing.
- Tett, R. P., & Meyer, J. P. (1993). Job Satisfaction, Organizational Commitment, Turnover Intention, and Turnover: Path Analyses Based on Meta-Analytic Findings. *Personnel Psychology, 46*, 259-290.
- Thibaut, J., & Walker, L. (1978). A Theory of Procedure. *California Law Review, 66*, 541-566.

- Thibaut, J., Walker, L., LaTour, S., & Houlden, P. (1974). Procedural Justice as Fairness. *Stanford Law Review*, 26(6), 1271-1289.
- Thompson, J., & Rainey, H. (2003). *Modernizing Human Capital Management in the Federal Government: The IRS Model*. Washington, D.C.: IBM Endowment for the Business of Government.
- Tremblay, M., & Roussel, P. (2001). Modeling the Role of Organizational Justice: Effects on Satisfaction and Unionization Propensity of Canadian Managers. *International Journal of Human Resource Management*, 12(5), 717-737.
- Truxillo, D. M., & Bauer, T. N. (1999). Applicant Reactions to Test Score Banding in Entry-Level and Promotional Contexts. *Journal of Applied Psychology*, 84, 322-339.
- Tsui, A., Egan, T., & O'Reilley, C. (1992). Being Different: Relational Demography and Organizational Attachment. *Administrative Science Quarterly*, 37, 549-579.
- Tversky, A., & Kahneman, D. (1974). Judgment Under Uncertainty: Heuristics and Biases. *Science*, 185(4157), 1124-1131.
- Tyler, T. R. (1989). The Psychology of Procedural Justice: A Test of the Group Value Model. *Journal of Personality and Social Psychology*, 57(5), 830-838.
- Tyler, T. R., & Blader, S. L. (2003). The Group Engagement Model: Procedural Justice, Social Identity, and Cooperative Behavior. *Personality and Social Psychology Review*, 7(4), 349-361.
- Tyler, T. R., & Caine, A. (1981). The Influence of Outcomes and Procedures on Satisfaction with Former Leaders. *Journal of Personality and Social Psychology*, 41, 642-655.
- Tyler, T. R., & Lind, E. A. (1992). A Relational Model of Authority in Groups. *Advances in Experimental Social Psychology*, 25, 115-191.
- Tyler, T. R., Rasinski, K., & McGraw, K. (1985). The Influence of Perceived Injustice on Support for Political Authorities. *Journal of Applied Social Psychology*, 15, 700-725.
- Tyler, T. R., & Schuller, R. (1990). A Relational Model of Authority in Work Organizations: The Psychology of Procedural Justice. Unpublished work from the American Bar Foundation.
- U.S. Department of Homeland Security Office of Inspector General (2005a). *Follow-up Audit of Passenger and Baggage Screening Procedures at Domestic Airports (Unclassified Summary)* (OIG-05-16). Washington, D.C.: U.S. Government Printing Office.

- U.S. Department of Homeland Security Office of Inspector General (2005b). *Irregularities in the Development of the Transportation Security Operations Center* (OIG-05-18). Washington, D.C.: U.S. Government Printing Office.
- U.S. Department of Homeland Security Office of Inspector General (2005c). *Review of the Transportation Security Administration's Management Controls Over the Screener Recruitment Program* (OIG-06-18). Washington, D.C.: U.S. Government Printing Office.
- U.S. General Accounting Office (2002). *A Model of Strategic Human Capital Management* (GAO-02-373SP). Washington, D.C.: U.S. Government Printing Office.
- U.S. General Accounting Office (2003). *Human Capital Management: FAA's Reform Effort Requires a More Strategic Approach* (GAO-03-156). Washington, D.C.: U.S. Government Printing Office.
- U.S. Government Accountability Office (2004). *Human Capital: Preliminary Observations on Proposed DHS Human Capital Regulations* (GAO-040479T). Washington, D.C.: U.S. Government Printing Office.
- U.S. Government Accountability Office (2005). *Aviation Security: Screener Training and Performance Measurement Strengthened, but More Work Remains* (GAO-05-457). Washington, D.C.: U.S. Government Printing Office.
- U.S. Government Accountability Office (2007). *NASA: Progress Made on Strategic Human Capital Management, but Future Program Challenges Remain* (GAO-07-1004). Washington, D.C.: U.S. Government Printing Office.
- U.S. Merit Systems Protection Board (1997). *Adherence to the Merit Principles in the Workplace: Federal Employees' Views* Washington, D.C.: U.S. Government Printing Office.
- U.S. Merit Systems Protection Board (2001). *The U.S. Office of Personnel Management in Retrospect: Achievements and Challenges After Two Decades* Washington, D.C.: U.S. Government Printing Office.
- U.S. Merit Systems Protection Board (2007). *Accomplishing Our Mission: Results of the Merit Principles Survey 2005* Washington, D.C.: U.S. Government Printing Office.
- U.S. Office of Personnel Management (2005). *Alternative Personnel Systems In Practice and a Guide to the Future* Washington, D.C.: U.S. Government Printing Office.
- U.S. Office of Personnel Management (2007a). *Alternative Personnel Systems in the Federal Government: A Status Report on Demonstration Projects and Other Performance-Based Pay Systems* Washington, D.C.: U.S. Government Printing Office.

- U.S. Office of Personnel Management (2007b). *Creating a Foundation for the 21st Century Workforce: An Assessment of the Implementation of the Department of Homeland Security Alternative Personnel System*. Washington, D.C.: U.S. Government Printing Office.
- VanDyne, L., Graham, J., & Dienesch, R. (1994). Organizational Citizenship Behavior: Construct Redefinition, Measurement, and Validation. *Academy of Management Journal*, 37(4), 765-802.
- Wade, J., O'Reilley, C., & Pollock, T. (2006). Overpaid CEOs and Underpaid Managers: Fairness and Executive Compensation. *Organization Science*, 17(5), 527-544.
- Walker, L., LaTour, S., Lind, E. A., & Thibaut, J. (1974). Reactions of Participants and Observers to Modes of Adjudication. *Journal of Applied Social Psychology*, 4(4), 295-310.
- Walker, L., Lind, E. A., & Thibaut, J. (1979). The Relation between Procedural and Distributive Justice. *Virginia Law Review*, 65(8), 1401-1420.
- Weslowski, M. A., & Mossholder, K. W. (1997). Relational Demography in Supervisor-Subordinate Dyads: Impact on Subordinate Job Satisfaction, Burnout, and Perceived Procedural Justice. *Journal of Organizational Behavior*, 18, 351-362.
- Williams, K., & O'Reilley, C. (1998). Demography and Diversity in Organizations: A Review of 40 Years of Research. *Research in Organizational Behavior*, 20, 77-140.
- Williams, L. J., & Anderson, S. E. (1991). Satisfaction and Organizational Commitment as Predictors of Organizational Citizenship and In-Role Behaviors. *Journal of Management*, 17(3), 601-617.
- Wooldridge, J. (2003). *Introductory Econometrics: A Modern Approach* (2nd ed.). Mason, OH: South-Western, Thompson Learning.
- Youngblood, S., Trevino, L., & Favia, M. (1992). Reactions to Unjust Dismissal and Third Party Dispute Resolution: A Justice Framework. *Employee Responsibilities and Rights Journal*, 5(4), 283-307.

## APPENDIX A: CASE STUDY MATERIALS

### Interview Protocol for TSA

1. Introduction explaining procedural justice, its components and my data.
2. What is your name, title, and how long have you been with the agency and in your current position?
3. Based on survey responses, TSA seems to have bigger challenges than the rest of the federal government in terms of reducing perceptions that personal *bias* influences decisionmaking. Why do you think this is? Did something happen in 2005 to make this a particularly sensitive issue among employees?
4. Based on survey responses, TSA seems to have bigger challenges than the rest of the federal government in terms of improving perceptions that decisions are made *consistently* across individuals. Why do you think this is? Did something happen in 2005 to make this a particularly sensitive issue among employees?
5. Based on survey responses, TSA performs slightly better in terms of *correctability*, ie employees have slightly higher perceptions that inappropriate or inaccurate decisions can be *appealed*, either formally or informally. Why do you think this is? Did something happen in 2005 to make this less of a concern?
6. Is there anything else you think I should know about the department's efforts to foster an environment characterized by procedural justice?
7. Who else would you recommend I speak to about this?

8. Are there any supporting documents that may shed more light on these issues? (internal employee survey summary)

One-Page Summary Sent to TSA Officials before Interview<sup>25</sup>

Research Summary in Preparation for Interviews

Ellen Rubin, PhD Candidate

University of Georgia

March 13, 2008

My dissertation focuses on the procedural justice perceptions of federal employees. Procedural justice perceptions can be broadly defined as judgments on the degree to which decisionmaking within an organization is viewed as just and fair. These perceptions incorporate both the rules themselves and the manner in which the rules are implemented. Importantly, procedural justice perceptions are related to levels of trust in the workplace, levels of satisfaction, turnover intentions, and a willingness to engage in activities that are outside the normal duties of one's position, such as recruiting future employees. Research identifies six criteria that individuals use to assess the procedural fairness of a situation:

- *Voice*: do individuals have an opportunity to express their view during decisionmaking or present evidence supporting their arguments;
- *Consistency*: are decisions made in similar manner across individuals and time;
- *Bias Suppression*: do the personal interests or prejudices of decisionmakers guide their actions;

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<sup>25</sup> The document was one page in length when single-spaced.



- *Accuracy*: is information used for decisionmaking factually correct and does the information come from reliable sources;
- *Correctability*: can inaccurate or inappropriate decisions be modified or appealed, either formally or informally; and
- *Ethicality*: is the procedure used to reach a decision consistent with an individual's personal sense of professional conduct.

To measure perceptions of procedural justice among federal employees, I am using responses to the 2005 Merit Principles Survey.<sup>26</sup> For each of the six procedural justice criteria I selected three questions from the survey. Responses from all employees, including both managers and staff, are included in the analysis. The survey questions are provided in the other document attached to the email.

During our interview, I would like to discuss two items. First, one of my models statistically predicts that TSA employee perceptions of procedural justice should be higher than the average federal employee. However, the summarized survey data indicate that the average TSA response for each of the six criteria are low, compared to the rest of the federal government. Why do you think this is? Second, I would like to talk about TSA employee perceptions of bias, consistency, and correctability in particular. Why do you think TSA seems to be challenged in terms of minimizing bias and improving consistency? Why do you think TSA performs better when it comes to issues of correctability?

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<sup>26</sup> More information on this survey can be found at [www.mspb.gov](http://www.mspb.gov).

Table A.1  
TSA Interviewee Details

Interviewee	Date of Interview	Method of Interview	Gender
GAO Analysts A and B	3/21/08	Phone	A: Female B: Male
GAO Analyst C	3/25/08	Phone	Male
Human Capital Officials A and B	3/18/08	In-Person	A: Female B: Male
Human Capital Official C	3/24/08	Phone	Male
NTEU Representative A	3/17/08	In-Person	Male
NTEU Representative B	3/18/08	Phone	Male
NTEU Representative C	3/21/08	Phone	Male
AFGE Representative	3/26/08	Phone	Male

#### Interview Protocol for NASA

1. Introduction explaining procedural justice, its components and my data
2. What is your name, title, and how long have you been with the agency and in your current position?
3. Based on survey responses, NASA performs well compared to the rest of the federal government in terms of reducing perceptions that personal *bias* influences decisionmaking. Why do you think this is?

4. Based on survey responses, NASA performs well compared to the rest of the federal government in terms of fostering perceptions that decisions are made *consistently* across individuals. Why do you think this is?
5. Based on survey responses, the biggest challenge in terms of procedural justice perceptions for NASA seems to be providing employees with opportunities to *appeal or correct* decisions viewed as inappropriate or incorrect, either formally or informally. Why do you think this is? Did something happen in 2005 to make this more of a concern than bias or consistency of decisionmaking?
6. Is there anything else you think I should know about the department's efforts to foster an environment characterized by procedural justice?
7. Who else would you recommend I speak to about this?
8. Are there any supporting documents that may shed more light on these issues? (internal employee survey summary)

#### One-Page Summary Sent to NASA Officials before Interview

Research Summary in Preparation for Interviews

Ellen Rubin, PhD Candidate

University of Georgia

March 13, 2008

My dissertation focuses on the procedural justice perceptions of federal employees. Procedural justice perceptions can be broadly defined as judgments on the degree to which decisionmaking within an organization is viewed as just and fair. These perceptions incorporate both the rules themselves and the manner in which the rules are

implemented. Importantly, procedural justice perceptions are related to levels of trust in the workplace, levels of satisfaction, turnover intentions, and a willingness to engage in activities that are outside the normal duties of one's position, such as recruiting future employees. Research identifies six criteria that individuals use to assess the procedural fairness of a situation:

- *Voice*: do individuals have an opportunity to express their view during decisionmaking or present evidence supporting their arguments;
- *Consistency*: are decisions made in similar manner across individuals and time;
- *Bias Suppression*: do the personal interests or prejudices of decisionmakers guide their actions;
- *Accuracy*: is information used for decisionmaking factually correct and does the information come from reliable sources;
- *Correctability*: can inaccurate or inappropriate decisions be modified or appealed, either formally or informally; and
- *Ethicality*: is the procedure used to reach a decision consistent with an individual's personal sense of professional conduct.

To measure perceptions of procedural justice among federal employees, I am using responses to the 2005 Merit Principles Survey.<sup>27</sup> For each of the six procedural justice criteria I selected three questions from the survey. Responses from all employees, including both managers and staff are included in my analysis. The survey questions are provided in the other document attached to the email.

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<sup>27</sup> More information on this survey can be found at [www.mspb.gov](http://www.mspb.gov).

During our interview, I would like to discuss the following two items. First, one of my models statistically predicts that NASA employee perceptions of procedural justice should be lower than the average federal employee. However, the summarized survey data indicate that the average NASA response for each of the six criteria are high, compared to the rest of the federal government. Why do you think this is? Second, I would like to talk about NASA employee perceptions of bias, consistency, and correctability in particular. Why do you think NASA seems to be successful in terms of minimizing bias and improving consistency? Why do you think NASA is challenged when it comes to issues of correctability?

Table A.2  
NASA Interviewee Details

Interviewee	Date of Interview	Method of Interview	Gender
GAO Analysts A and B	3/17/08	In Person	A: Female B: Male
Human Capital Official A	3/17/08	In Person	Female
Human Capital Official B	3/28/08	Phone	Female
AFGE Representatives A and B	3/26/08	Phone	Both Male
IFPTE Representative A	4/28, 4/29, and 5/6/08	Phone	Male
IFPTE Representative B	5/1 and 5/9/08	Phone	Female
IFPTE Representative C	5/4 and 5/6/08	Phone	Male

IFPTE  
Representative D

5/19/08

Phone

Female

### Example of Initial Email Contact<sup>28</sup>

On 4/22/08 5:04 PM, "Ellen Rubin" <evrubin@uga.edu> wrote:

Dear XXXX,

My name is Ellen Rubin and I am a PhD Candidate at the University of Georgia, where I am studying public personnel management. I am contacting you to see if you might be able or willing to help with my current research project which focuses on employee perceptions of fairness in the federal government.

While part of my research examines fairness perceptions governmentwide, I am also doing some more in-depth work on a few agencies, including NASA. As part of this examination, I would like to speak with employee representatives to provide a balance to information from agency officials.

Would it be possible to schedule a phone interview with you? My schedule is flexible over the next three weeks so I am happy to accommodate you. If you are not the appropriate person for me to speak with, please let me know who I should contact.

I would be happy to provide you with more information about my research topic and send a summary of topics to discuss ahead of time. Additionally, I can send my resume or a letter from my advisor, Dr. Ed Kellough, detailing my research interests.

I can be contacted directly at evrubin@uga.edu or 706 548 3198. I hope we have the opportunity to speak soon.

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<sup>28</sup> Personal information has been removed to protect confidentiality.

Sincerely, Ellen Rubin

PhD Candidate

Department of Public Administration and Policy

University of Georgia

Date: Wed, 23 Apr 2008 07:22:49 -0400

From: XXXX

Subject: Re: seeking research assistance

To: Ellen Rubin <evrubin@uga.edu>

Dear Ms. Rubin,

I would appreciate your providing more information about your research topic and a resume or letter from your advisor, Dr. Ed Kellough, detailing your research interests. Please explain your interest in NASA and identify other officials and employee representatives contacted. I would also appreciate receiving a summary of topics to discuss ahead of time. We will then decide if and how to proceed.

Date: Wed 23 Apr 13:35:24 EDT 2008

From: Ellen Rubin <evrubin@uga.edu>

Subject: Re: seeking research assistance

To: XXXX

Dear XXXX,

Thank you for your response. As requested, two documents are attached for your review: my resume and a one-page description of my research. The one-pager also briefly describes the topics I would like to discuss with you. If you would like a letter from my advisor, please let me

know.

Although most of my study is quantitative and examining governmentwide perceptions of fairness, I am conducting qualitative research on two agencies: NASA and TSA. NASA was selected because it has the highest average score on my fairness perception index of the 50+ agencies in my study. TSA has the lowest score. My data is briefly described in the attached one-pager. The purpose of the interviews is to try to find out what is driving NASA's scores.

At this point, I have interviewed two officials in NASA headquarters and one NASA AFGE union official. I have also spoken with AFGE local representatives.

However, I know that IFPTE represents more employees at more locations in NASA, which is why I contacted you and the other following local IFPTE leaders: YYYY and ZZZZ. In the month of March I exchanged emails with AAAA, but we lost track of each other as we tried to reschedule meetings, which is why I decided to contact you.

It is important to my research to gather employee perspectives from multiple locations to both balance the information provided by agency officials and to ensure I have a solid picture of what is happening (or not) at NASA. If you do agree to speak with me over the phone, I can assure you that I will not use your name in my research, and will instead refer to you as a NASA IFPTE representative. The phone interview will take between 30 to 45 minutes, depending on how talkative you feel.

I hope you will consider helping with my project.

Sincerely, Ellen Rubin