

1-1-2017

The Influence of Organizational Demographics and Whistleblowing Factors on Employee Perceptions of Procedural Justice

Patrick Clark Exmeyer

Follow this and additional works at: <https://scholarsjunction.msstate.edu/td>

Recommended Citation

Exmeyer, Patrick Clark, "The Influence of Organizational Demographics and Whistleblowing Factors on Employee Perceptions of Procedural Justice" (2017). *Theses and Dissertations*. 4540.
<https://scholarsjunction.msstate.edu/td/4540>

This Dissertation - Open Access is brought to you for free and open access by the Theses and Dissertations at Scholars Junction. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholars Junction. For more information, please contact scholcomm@msstate.libanswers.com.

The influence of organizational demographics and whistleblowing factors on employee
perceptions of procedural justice

By

Patrick C. Exmeyer

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Public Policy and Administration
in the Department of Political Science and Public Administration

Mississippi State, Mississippi

May 2017

Copyright by
Patrick C. Exmeyer
2017

The influence of organizational demographics and whistleblowing factors on employee
perceptions of procedural justice

By

Patrick C. Exmeyer

Approved:

Christine L. Rush
(Major Professor)

P. Edward French
(Committee Member/Graduate Coordinator)

Gerald A. Emison
(Committee Member)

Stephen D. Shaffer
(Committee Member)

Rick Travis
Interim Dean
College of Arts & Sciences

Name: Patrick C. Exmeyer

Date of Degree: May 6, 2017

Institution: Mississippi State University

Major Field: Public Policy and Administration

Major Professor: Dr. Christine Rush

Title of Study: The influence of organizational demographics and whistleblowing factors on employee perceptions of procedural justice

Pages in Study 169

Candidate for Degree of Doctor of Philosophy

This dissertation seeks to advance the base of both whistleblowing and procedural justice literature. Building upon previous whistleblowing and procedural justice literature is accomplished through analysis of how organizational, demographic, and legislative factors contributing to whistleblowing shape employee perceptions of procedural justice.

The act of whistleblowing has garnered considerable attention over the course of the past several decades. Employee disclosures of organizational wrongdoing have shaped influential research focusing on the characteristics of whistleblowers, organizational conditions contributing to whistleblowing, the motivations and intentions of whistleblowers, as well as both the personal and professional consequences of employees engaging in whistleblowing. These literary advancements have contributed to a robust base of scholarly knowledge concerning whistleblowing. However, previous research has neglected employee perceptions of procedural justice as it relates to the processing of whistleblowing disclosures.

Utilizing data derived from regulatory agency employee responses to the Federal Employee Viewpoint Survey, along with Office of Special Counsel Annual Reports to Congress, this research aims to fill a literary gap concerning both whistleblowing and procedural justice research. This research examines the role of organizational, demographic, and legislative factors as they influence employee perceptions of procedural justice within a whistleblowing context. The findings of this research suggest that while the annual proportion of whistleblower disclosures substantiated by agency review and the introduction of federal whistleblower legislation does not correlate with increased employee perceptions of procedural justice, organizational demographics such as supervisory status and employee intention to remain with their respective agency consistently contribute to higher annual perceptions of procedural justice.

DEDICATION

This dissertation is dedicated to my family and friends which have shown unconditional love and support throughout this journey. Accomplishing this goal would be impossible without my wife, Leslie, who has shown me unparalleled love, patience, and encouragement throughout this process.

This dissertation is also dedicated to my parents, Clark and Terri Exmeyer, who have shown me unwavering support and love throughout the years. You instilled in me the determination to overcome adversity and the ambition to fulfill my potential, and for that I cannot thank you enough. To my sister, Leah Exmeyer, who has always astonished me with her achievements and perseverance. May you continue to find success in all your endeavors, little sister. To my aunt and uncle, Susan and Bill Kromann, thank you for all love and support throughout the years. Let this dissertation stand in memory of loved ones who are no longer with us: Marjorie and Leland Exmeyer, John Green, and Conrad Green. A special thank you goes out to my cousin, Dr. Hyatt Green, for his insight and wisdom throughout the doctoral process.

ACKNOWLEDGEMENTS

The great sportswriter Henry Grantland Rice once wrote “For when the One Great Scorer comes to mark against your name, he writes not that you won or lost, but how you played the game.” My father would remind me of this quote often growing up, as reflected upon a plaque containing these very words which hung upon the wall of the Clark Lumber Yard office in New Harmony, Indiana so many years ago. The dissertation process is very much like a game, and I would like to believe I played it well. This adventure has taught me a great deal about not only life, but about myself as well.

I would like to acknowledge the efforts and dedication of many people which have made this accomplishment possible. A special thank you goes to my dissertation chair, Dr. Christine Rush, who has shown me more about research, writing, and academic life than I thought was possible. To my dissertation committee members, including Dr. P. Edward French, Dr. Steve Shaffer, and Dr. Jerry Emison, thank you for your invaluable insight and contributions to this research. The influence of these scholars extends beyond this dissertation in ways which I can never fully illustrate. I would like to also thank Dr. Michael ‘Doc’ Brown, Professor of Criminal Justice and Criminology at Ball State University. For 10 years, Dr. Brown has served as both a mentor and inspiration for what being a member of academia truly is, as well as a trusted confidant and friend. Additionally, I would like to thank Dr. Matthew Hanka, who dedicated his time and energy to helping me exceed my own expectations during my time as a graduate

student in the Master of Public Administration program at the University of Southern Indiana.

Finally, I would like to extend my thanks and gratitude to those who have made this dissertation a reality through their professionalism and dedication to public service. A special thank you goes out to Mr. Nick Schwellenbach, Senior Communications Specialist with the United States Office of Special Counsel, for his outstanding effort in relaying information and data which are central to this research effort. Furthermore, I would like to thank the members of the Federal Employee Viewpoint Survey (FEVS) team within the United States Office of Personnel Management, who demonstrated exemplary public service through their efforts to accommodate requests for this project.

TABLE OF CONTENTS

| | |
|--|-----|
| DEDICATION | ii |
| ACKNOWLEDGEMENTS | iii |
| LIST OF TABLES | ix |
| LIST OF FIGURES | xi |
| CHAPTER | |
| I. INTRODUCTION | 1 |
| Research Questions | 4 |
| Significance of Research Questions | 5 |
| II. LITERATURE REVIEW AND RESEARCH FRAMEWORK | 7 |
| Whistleblowing | 7 |
| Defining Whistleblowing | 8 |
| Elements of Whistleblowing | 8 |
| Whistleblowing Motives & Consequences | 10 |
| Federal Whistleblower Legislation | 11 |
| The False Claims Act | 11 |
| Legislative Shift from Reward to Retaliation Protections | 14 |
| The Value of Whistleblower Information | 18 |
| Procedural Justice Theory | 19 |
| Procedural Fairness Safeguards | 22 |
| Model and Hypotheses | 24 |
| III. RESEARCH METHODS | 25 |
| Unit of Analysis | 25 |
| Data | 27 |
| Federal Employee Viewpoint Survey (FEVS) | 27 |
| Office of Special Counsel (OSC) Annual Reports to Congress | 30 |
| Dependent Variable | 31 |
| Dependent Variable: Procedural Justice Index Score | 31 |
| Independent Variables and Hypotheses | 36 |
| Independent Variable: Agency Substantiated OSC Disclosures | 36 |

| | |
|---|-----------|
| Independent Variable: Employee Years of Government Tenure | 37 |
| Independent Variable: Agency Employee Age | 37 |
| Independent Variable: Employment Intention | 38 |
| Independent Variable: Agency Employee Supervisory Status..... | 39 |
| Independent Variable: Whistleblower Protection Enhancement Act of 2012 | 39 |
| Operationalization of Independent Variables for Hypotheses 1-6 | 40 |
| Independent Variable: Agency Substantiated OSC Disclosures | 40 |
| Independent Variable: Employee Years of Government Tenure | 40 |
| Independent Variable: Agency Employee Age | 41 |
| Independent Variable: Employment Intention | 41 |
| Independent Variable: Agency Employee Supervisory Status..... | 42 |
| Independent Variable: Whistleblower Protection Enhancement Act of 2012 | 42 |
| Statistical Analysis | 43 |
| Methodology..... | 43 |
| Data Preparation | 44 |
| Data Analysis..... | 46 |
| IV. RESULTS AND ANALYSIS | 47 |
| Construct Validity | 47 |
| OSC Substantiated Disclosure Proportion..... | 50 |
| Regulatory Agency Employee Procedural Justice Index Scores..... | 51 |
| Research Findings | 52 |
| Hypothesis 1: Agency Substantiated OSC Disclosures..... | 52 |
| Hypotheses 2-5: Organizational Demographics..... | 53 |
| Hypothesis 6: Whistleblower Protection Enhancement Act | 60 |
| Findings from Hypothesis 1 | 61 |
| PJI Scores and OSC Disclosure Substantiation Proportion..... | 61 |
| Findings from Hypotheses 2-5 | 62 |
| Independent Variable: Employee Tenure..... | 62 |
| Independent Variable: Employee Age..... | 63 |
| Independent Variable: Employment Intention | 63 |
| Independent Variable: Employee Supervisory Status | 64 |
| Findings from Hypothesis 6 | 64 |
| Procedural Justice Index Scores Prior to and Following the WPEA..... | 65 |
| V. CONCLUSION..... | 67 |
| Discussion..... | 67 |
| Summary of Findings | 70 |
| Theoretical Implications of the Research | 73 |
| OSC Substantiated Disclosure Proportion..... | 73 |
| Organizational Demographics | 74 |

| | |
|--|-----|
| Federal Whistleblower Legislation..... | 77 |
| Contributions to the Field of Public Administration | 79 |
| Practical Implications of Research Findings | 81 |
| Limitations and Future Research..... | 83 |
| REFERENCES | 86 |
| APPENDIX | |
| A. FEVS CODING VALUES: HYPOTHESES 2-5 | 96 |
| Hypothesis 2 Coding Values – Employee Tenure..... | 97 |
| FEVS Question: How long have you been with the Federal Government (excluding military service)?..... | 97 |
| Hypothesis 3 Coding Values – Employee Age | 97 |
| FEVS Question: What is your age group? | 97 |
| Hypothesis 4 Coding Values – Employment Intention | 98 |
| FEVS Question: Are you considering leaving your organization within the next year, and if so, why?..... | 98 |
| Hypothesis 5 Coding Values – Supervisory Status | 98 |
| FEVS Question: What is your supervisory status?..... | 98 |
| B. FEVS RESPONSE FREQUENCY TABLES..... | 99 |
| NRC FEVS Response Frequency Tables | 100 |
| 2010 Procedural Justice Index Item Responses..... | 100 |
| 2010 Demographic Question Responses | 103 |
| 2011 Procedural Justice Index Item Responses..... | 105 |
| 2011 Demographic Question Responses | 109 |
| 2012 Procedural Justice Index Item Responses..... | 111 |
| 2012 Demographic Question Responses | 114 |
| 2013 Procedural Justice Index Item Responses..... | 115 |
| 2013 Demographic Question Responses | 119 |
| 2014 Procedural Justice Index Item Responses..... | 120 |
| 2014 Demographic Question Responses | 124 |
| 2015 Procedural Justice Index Item Responses..... | 125 |
| 2015 Demographics Question Responses | 129 |
| SEC FEVS Response Frequency Tables | 130 |
| 2010 Procedural Justice Index Item Responses..... | 130 |
| 2010 Demographic Question Responses | 134 |
| 2011 Procedural Justice Index Item Responses..... | 136 |
| 2011 Demographic Question Responses | 139 |
| 2012 Procedural Justice Index Item Responses..... | 141 |
| 2012 Demographic Question Responses | 144 |
| 2013 Procedural Justice Index Item Responses..... | 145 |
| 2013 Demographic Question Responses | 149 |

| | |
|---|-----|
| 2014 Procedural Justice Index Item Responses..... | 150 |
| 2014 Demographic Question Responses | 154 |
| 2015 Procedural Justice Index Item Responses..... | 155 |
| 2015 Demographic Question Responses | 159 |
| C. OLS REGRESSION MODEL TESTS FOR MULTICOLLINEARITY | 161 |
| NRC Regression Model Collinearity Diagnostics..... | 162 |
| 2010 | 162 |
| 2011 | 162 |
| 2012 | 163 |
| 2013 | 164 |
| 2014 | 164 |
| 2015 | 165 |
| SEC Regression Model Collinearity Diagnostics..... | 166 |
| 2010 | 166 |
| 2011 | 166 |
| 2012 | 167 |
| 2013 | 168 |
| 2014 | 168 |
| 2015 | 169 |

LIST OF TABLES

| | | |
|------|--|----|
| 3.1 | Nuclear Regulatory Commission Total Employment and FEVS Participation, 2010-2015..... | 27 |
| 3.2 | Securities Exchange Commission Total Employment and FEVS Participation, 2010-2015..... | 27 |
| 3.3 | FEVS Procedural Justice Index Items..... | 34 |
| 3.4 | NRC Employee Response Totals: PJI, PJI and Demographics, and Deleted 2010-2015..... | 45 |
| 3.5 | SEC Employee Response Totals: PJI, PJI and Demographics, and Deleted 2010-2015..... | 45 |
| 4.1 | NRC Procedural Justice Index Factor Analysis, 2010-2015 | 48 |
| 4.2 | SEC Procedural Justice Factor Analysis, 2010-2015 | 49 |
| 4.3 | Cronbach's alpha for Procedural Justice Index per Agency for FEVS Years Selected..... | 50 |
| 4.4 | OSC Substantiated Disclosure Proportion, 2010-2015..... | 51 |
| 4.5 | NRC Procedural Justice Index Scores, 2010-2015..... | 52 |
| 4.6 | SEC Procedural Justice Index Scores, 2010-2015..... | 52 |
| 4.7 | Annual Regulatory Agency Mean PJI Scores and OSC Substantiated Disclosure Proportions, 2010-2015 | 53 |
| 4.8 | 2010 OLS Regression Results (Weighted) | 54 |
| 4.9 | 2011 OLS Regression Results (Weighted) | 55 |
| 4.10 | 2012 OLS Regression Results (Weighted) | 56 |
| 4.11 | 2013 OLS Regression Results (Weighted) | 57 |
| 4.12 | 2014 OLS Regression Results (Weighted) | 58 |

| | | |
|------|--|----|
| 4.13 | 2015 OLS Regression Results (Weighted) | 59 |
| 4.14 | Regulatory Agency Mean PJI Scores, 2010-2015 | 61 |
| 4.15 | Hypotheses 1-6: Confirmed or Unconfirmed | 66 |

LIST OF FIGURES

| | | |
|-----|-------------------------------------|----|
| 2.1 | Research Model and Hypotheses | 24 |
|-----|-------------------------------------|----|

CHAPTER I

INTRODUCTION

Maintaining high ethical standards is paramount towards facilitating trust between government agencies and the public they serve. Recent instances of misconduct in federal agencies disclosed by whistleblowing, such as the reported wrongdoing in Veterans Affairs (VA) Hospitals and the National Security Agency (NSA), directly impacts citizen perceptions of trust in government organizations (Caillier, 2016, p. 1). Employee actions to disclose suspected wrongdoing may also relate to their perceptions of an organization's level of procedural justice. This research conceptualizes procedural justice in terms of how employees view the fairness and equity of their organization's process for mediating "competing interests" (Rawls, 1951, p. 177). Scholars have previously examined whistleblower characteristics, the nature of suspected wrongdoing, and organizational conditions which make whistleblowing more likely. However, research has not yet considered connections between whistleblowing and employee perceptions of procedural justice.

Recent research has examined common characteristics of whistleblowers and factors contributing to employees engaging in whistleblowing. Near and Miceli (2016) point out that whistleblowers are typically "long-term and loyal employees who care most about their organizations and are trying to protect them from continuing on a dangerous path" (p. 107). Additionally, employees who choose to blow the whistle on

their employers are often those who are seemingly placed in the wrong place at the wrong time to discover the suspected wrongdoing, forcing them into a precarious situation where the disclosure of the wrongdoing to those able to effect change may be the most applicable course to stop the actions in question (Near & Miceli, 1996). Caillier (2013) suggests that older employees with greater organizational tenure holding management position are the most likely to engage in whistleblowing without fear of retaliation.

Multiple factors contribute to employee decisions to disclose wrongdoing, suggesting whistleblowing does not play out within the confines of a single action. Whistleblowing is often the product of a culmination of various factors resulting in "...an extremely complex process that may play out over a period of years and involve many parties, particularly if a lawsuit is filed" (Miceli, 2004, p. 364). Employees who disclose suspected wrongdoing frequently utilize various channels for submitting whistleblower claims.

One of these contributing factors is the choice of where to disclosure. Disclosure channels for federal employees are commonly distinguished as either internal or external. Internal channels for whistleblowing include submitting disclosures to individuals or units within their respective organization capable of initiating change. Examples of internal whistleblower channels include, but are not limited to, employees in management, human resources personnel, and agency Inspector's General. Alternatively, external whistleblowing enables an employee to retain anonymity and report to officials outside of the sphere of the alleged wrongdoing. Employees choosing to disclose suspected wrongdoing may use formalized external channels such as the United States

Office of Special Counsel (OSC), the United States Merit Systems Protection Board (MSPB), law enforcement agencies, and media outlets.

Created under the Civil Service Reform Act (CSRA, 5 U.S.C. §11) of 1979, MSPB and OSC were established to safeguard merit system principles of federal government employees. The CSRA granted authority to MSPB to develop and implement due process procedures for federal agencies and their employees, as well as conduct independent studies focusing on the federal merit system and human capital management issues (MSPB, 2016, p. 3). Created as a subunit of MSPB, the OSC served as an autonomous investigative and prosecutorial arm of MSPB by receiving and investigating complaints relating to federal employee allegations of prohibited personnel practices, unethical political activities, and whistleblowing disclosures concerning governmental wrongdoing (OSC, 2016, p. 9).

Following passage of the Whistleblower Protection Act (WPA, 5 U.S.C. §§ 1201 – 1222) in 1989, OSC became an independent agency within the executive branch. Establishing OSC as an agency independent of MSPB allowed OSC to retain their delegated authority while shifting their primary focus towards receiving and investigating suspected violations of prohibited personnel practices, political activity, and whistleblowing disclosures. Furthermore, the OSC presents a unique outlet for external whistleblowing, as once OSC conducts an initial investigation into disclosures that have merit, the Office remits the disclosure back to the agency alleged of wrongdoing for further investigation and possible corrective action.

Scholarly research has yet to examine the relationship between employee perceptions of procedural justice and the OSC recognition of merited disclosures, agency

decision to take corrective action, and agency demographics. This research seeks to advance both the whistleblowing and procedural justice literature by examining how the proportion of OSC merited whistleblowing disclosures and agency substantiation of disclosures combine with agency demographics to influence employee perceptions of procedural justice.

Research Questions

- 1. Do agency decisions to affirm OSC merited whistleblowing disclosures influence employee perceptions of procedural justice?*
- 2. What role do demographic variables play in employee perceptions of procedural justice?*

The project begins by indicating the significance of the research question at hand. This introduction is followed by review of existing literature concerning the theoretical foundation of whistleblowing, the history of federal whistleblowing legislation, and an explanation of procedural justice theory. Next, the research develops hypotheses based on previous literature relating whistleblowing and procedural justice. The research then describes the unit of analysis and data utilized, operationalization of the hypotheses, and explains applicable methodology for examining the research questions posed. Finally, results of statistical analysis of the research are presented, concluding with discussion of the significance of the research findings, limitations of the research, and introduction of future research initiatives which build upon the findings of the current research.

Significance of Research Questions

Existing research on whistleblowing has considerably expanded our knowledge of the subject. However, literary gaps continue to present a barrier to a more comprehensive understanding of whistleblowing. Contemporary whistleblowing research has frequently centered on organizational factors contributing to whistleblowing, characteristics of whistleblowers, and employee perceptions of retaliation for engaging in whistleblowing. Furthermore, whistleblowing literature has relied heavily on legal analysis of whistleblower suits and data from federal agencies tasked with investigating prohibited personnel practices arising from whistleblower retaliation. The literature has not fully considered the influence of agency decisions to support the disclosure of information and employee perceptions of this agency support.

Advancement of whistleblowing research requires an analysis of agencies dedicated to investigation and adjudication of whistleblowing disclosures, rather than retaliation. This research examines the influence of agency substantiated whistleblowing disclosures and agency demographics on employee perceptions of procedural justice. As OSC determines which employee whistleblowing disclosures are merited and warrant submission back to the originating agency for investigation and review, examination of employee perceptions of the fairness and equity their employers exhibit in reviewing these disclosures represents a missing link in understanding the faith which employees place within their organization when reporting wrongdoing.

This study seeks to supplement existing procedural justice research through examination of selected whistleblower demographic variables such as employee tenure, age, supervisory status, and employment intentions. By examining whistleblower

demographic variables in conjunction with legislative and organizational conditions, the study aims to identify influential whistleblowing factors that contribute to employee perceptions of procedural justice.

CHAPTER II

LITERATURE REVIEW AND RESEARCH FRAMEWORK

This chapter examines the theoretical foundations of whistleblowing, the evolution of federal whistleblower legislation, and the development and application of procedural justice theory. The theoretical framework of the research and accompanying hypotheses follow.

Whistleblowing

Both private and public sectors have experienced instances of whistleblowing over the past several decades (Ting, 2008, p. 249). More particularly, public sector whistleblowing has gained substantial notoriety through expanding media expose (Wahl-Jorgensen & Hunt, 2012). These revelations concerning organizational wrongdoing have generated considerable interest and discussion of the topic. Regardless of the sector in which whistleblowing occurs, these instances of wrongdoing result in polarizing characterizations of whistleblowers and the intent behind their disclosures.

Heightened interest in whistleblowing has facilitated a growing base of literature concerning the impact of whistleblowing on a wide scope of topics. Some of the issues most frequently addressed concerning public administration and whistleblowing range from organizational ethics and policy change to motivational factors for public employees and characteristics of the whistleblowers themselves.

Defining Whistleblowing

One of the earliest definitions of whistleblowing comes from Nader, Petkas, and Blackwell (1972), who describe whistleblowing as “the act of a man or woman, who believing that the public interest overrides the interest of the organization he [*sic*] serves, publicly ‘blows the whistle’ if the organization is involved in corrupt, illegal, fraudulent or harmful activity” (p. vii). Their definition characterizes whistleblowing as a public act taken by an individual or individuals (Nader, et al., 1972). The scope of this early definition limits whistleblowers to *individuals* who disclose wrongdoing through *publicization*.

Near and Miceli (1985) expanded upon the definition of whistleblowing to include actions occurring in both the public and private sectors that are disclosed to agents of change. Their work offers a universally applicable and widely accepted definition of whistleblowing, centering on “the disclosure by organization members (former or current) of illegal, immoral, or illegitimate practices under the control of their employers, to persons or organizations that may be able to effect action” (p. 4). Notably, this definition grounds the act of whistleblowing on the disclosure of wrongdoing to persons or organizations capable of effecting change.

Elements of Whistleblowing

Near and Miceli (1985) suggest four elements are involved in the act of whistleblowing: the whistle-blower, the whistle-blowing act or complaint, the party to whom the complaint is made, and the organization against which the complaint is lodged (p. 2). The broad characterization of these elements are significant when considering the variety of ways in which these elements manifest. For example, the whistleblowing act

or complaint itself may be made formally or informally, or the complaint recipient may rest within the organization (internal) or outside of the organization (external). This permits a fluid interpretation of whistleblowing within both public and private spheres.

The advancement of whistleblowing literature results in a stream of literature relating whistleblowing to forms of employee dissent. Building upon the foundational theory of whistleblowing, Martin and Rifkin (2004) deconstruct the concept, noting that whistleblowing “can be used very broadly to refer to an act of dissent or defined in a precise way” (p. 222). In order to categorize whistleblowing as a form of employee dissent, Johnson and Kraft (1990) indicate four components which characterize whistleblowing. These components include the disclosed information pertaining to possible or actual wrongdoing, intention to make the whistleblowing information public, information becoming public record, and that the whistleblower is a member or former member of the organization in question (pp. 850-851). The components indicated by Johnson and Kraft that characterize whistleblowing as an act perpetrated by an individual align with the concept of whistleblowing as an individual action concerning ethical behavior outlined by Elliston et al. (1985). From this context, whistleblowing can be viewed as a mechanism for employee dissent.

Subsequent research has linked Public Service Motivation (PSM) with positive attitudes towards public sector whistleblowing and organizational commitment. Caillier (2015) proposes that as employees experience higher levels of PSM, organizational commitment will increase as well, leading high-PSM level employees to “protect the organization from a potentially damaging situation” (p. 468). Understanding why employees with greater organizational loyalty and tenure engage in whistleblowing

requires an understanding of the motives behind the choice to disclose organizational wrongdoing and the potential consequences of doing so.

Whistleblowing Motives & Consequences

Motives to engage in whistleblowing may be significantly influenced by factors concerning ethicality, virtue, morality, and potential retaliatory consequences of engaging in whistleblowing. As the decision to engage in whistleblowing rests within a situational context, the moral intensity and ethicality may vary significantly depending on the situation being addressed (Singer, Mitchell, & Turner, 1998). However, both implicit and implied codes of morality may ultimately dictate the decision to engage in whistleblowing activity (Bouville, 2008, p. 581), leading to whistleblowing actions being undertaken in accordance with moral obligations despite the possibility of retaliation.

Retaliation in response to whistleblowing is categorized as “[the] undesirable action taken against a whistle-blower – and in direct response to the whistle-blowing – who reported wrongdoing internally (i.e., within the organization) or externally (i.e., outside the organization)” (Near & Miceli, 2008, p. 267). Retaliation may vary in both form and source, ranging from adverse work-related actions to undocumented anti-social behavior (Cortina & Magley, 2003). The consequences of engaging in whistleblowing has been linked to reductions in psychological well-being, contributing to substance abuse, and negatively impacted close personal relationships (Alford, 2007; Glazer & Glazer, 1989; Miethe, 1999).

To combat organizational wrongdoing and deter whistleblower retaliation, federal legislation encourages the reporting of suspected wrongdoing. The following section explores the history of federal whistleblowing legislation in the United States. Beginning

with the False Claims Act (FCA) and the viability of *qui tam*¹ suits following legal challenges to the statute, the section illustrates the evolution of federal whistleblowing legislation leading up to the most recent piece of comprehensive federal whistleblower legislation, the Whistleblower Protection Enhancement Act (WPEA) of 2012.

Federal Whistleblower Legislation

Modern federal whistleblowing legislation embodies two separate statutory approaches to encouraging whistleblowing: financial incentives and protection against retaliation. The traditional approach, exemplified by the FCA, provided financial rewards for whistleblowers. Alternatively, modern legislative approaches have strengthened legal protections for whistleblower to discourage employer retaliation (Callahan & Dworkin, 1992). Analysis of federal whistleblowing legislation begins with changes to whistleblowing legislation through financial incentives, followed by review of recent legislation expanding personnel protections from whistleblower retaliation.

The False Claims Act

The False Claims Act (FCA) of 1863 (31 U.S.C. §§ 3729-3733) provided citizens the option to bring *qui tam* suits on behalf of themselves and the federal government to combat procurement fraud by contractors supplying Union forces during the Civil War. Successful *qui tam* suits under the FCA awarded a percentage of the funds recovered by the federal government to claimants, incentivizing enforcement of the law (Callahan & Dworkin, 1992, p. 302). The use of *qui tam* suits provides a glimpse of public and

¹ “Qui Tam” is taken from the Latin phrase “qui tam pro domino rege quam pro si ipso hac parte sequitur”, translating to “who sues on behalf of the king as well as for himself” (Purcell, 1993, p. 983).

private sector relations as it relates to whistleblowing, as the *qui tam* mechanism is distinctive in its application concerning a wide range of conduct by deputizing citizens to sue on behalf of the federal government through the use of financial incentives (Kovacic, 1996, p. 1809).

Amendments to the FCA followed the Supreme Court's ruling in *United States ex rel. Marcus v. Hess* (317 U.S. 537, 1943), after the Court upheld the viability of *qui tam* suits where the government was already aware of the alleged fraud. Congress responded by amending the FCA (31 U.S.C. §§232-235) to bar suits based on previously known government information and reducing the amount of potential whistleblower compensation (Eaton & Akers, 2007). FCA *qui tam* suits diminished considerably in the decades following the 1943 amendments due to enhanced information requirements and reductions to potential financial rewards for successful suits.

Highly publicized instances of whistleblowing in both the public and private sectors in the 1970s and 1980s renewed congressional interest in combating organizational wrongdoing and encouraging whistleblowing (Purcell, 1993). Increased federal spending on national defense, including research and development contracting, resulted in multiple instances of contracting fraud. These instances of fraud prompted Congress to question the effectiveness of current anti-fraud legislation and enforcement mechanisms. Compounding these concerns were reports generated by the General Accounting Office (GAO) and Department of Justice (DOJ), estimating that only a small fraction of the billions of dollars of undetected fraud against the government were being recovered (Raspanti & Laigaie, 1988, p. 26). In response to these growing concerns, Congress passed the False Claims Amendments Act (31 U.S.C. §§ 3729 – 3733) in 1986

seeking to “enhance the ability of the federal government to prosecute fraud effectively and to provide an incentive for private citizens with knowledge of fraud to expose the violations” (Purcell, Jr., 1993, p. 944).

The FCAA expanded the abilities of *qui tam* claimants and their legal counsel to aid in cases where the federal government intervenes, allowing for enhanced investigation, litigation, and processing of whistleblower cases. As a result, *qui tam* claimants experienced successful litigation in instances where the federal government declined to intervene in the case, including cases concerning military contractors falsifying inspection records and misrepresenting safety plans in military defense systems (Raspanti & Laigaie, 1998, p. 44). Reports for the years following passage of the FCAA suggest the legislation resulted in a significant impact concerning claims of government fraud. The number of *qui tam* suits filed with the federal government increased annually, peaking at 533 suits filed in 1997 followed by six years of moderate decline. By 2003, nearly 4,300 *qui tam* suits had been filed under the FCAA, with federal government recoveries surpassing \$7.8 billion dollars (Carson, Verdu, & Wokutch, 2008). During this period, a vast majority of *qui tam* suits filed centered on Medicare and Medicaid fraud within the Department of Health and Human Service (DHHS) and against Department of Defense (DoD) contractors (p. 363).

Although the FCAA allowed for greater accessibility in the filing of *qui tam* suits and resulted in considerable recoveries by the federal government, the legislation fell short in affording additional personnel protections to whistleblowers. Aside from the inclusion of subsection (h), providing that “Any employee who is discharged, demoted, suspended, threatened, harassed, or in any other manner discriminated against...because

of lawful acts done by the employee...shall be entitled to all relief necessary to make the employee whole” (§4-3730), statutory language providing procedural remedies and outlining formal whistleblowing support was largely absent. The absence of such statutory language providing resources to potential whistleblowers concerning their rights, personnel protections, and mechanisms for reporting wrongdoing is unusual considering the development of both the MSPB and OSC through passage of the Civil Service Reform Act (5 U.S.C. §11) in 1978. Subsequent whistleblowing legislation would seek to improve personnel protections for whistleblowers in the years to follow.

Legislative Shift from Reward to Retaliation Protections

Congress passed the Whistleblower Protection Act (WPA) in 1989 (5 U.S.C.A. §1201) to address shortcomings in whistleblower protections absent in previous legislation. The WPA signaled a shift in federal whistleblowing legislation by focusing on providing expanded personnel protections to whistleblowers instead of financial incentives for disclosures. Expanded protections for whistleblowers within the WPA are premised on the betterment of civil service, as such disclosures “serve the public interest by assisting in the elimination of fraud, waste, abuse, and unnecessary Government expenditures...” and that “the protection of individuals who are the subject of prohibited personnel practices remains the paramount consideration” (5 U.S.C.A. §1201-1202).

The WPA strengthened protections to whistleblowers through expansion of discretionary authority and investigative powers granted to MSPB and OSC regarding whistleblower disclosures. Additionally, enactment of the WPA effectively separated OSC from MSPB by establishing OSC as an independent federal agency. In light of the expanded personnel protections afforded to whistleblowers through the WPA, the

legislation continued to restrict employee eligibility for whistleblower protections, particularly for federal employees involved in the handling of classified information or national security interests. Whitaker (2007) indicates that these whistleblowing instances may only be protected under the WPA if the disclosures are “not specifically prohibited by law and if such information is not specifically required by an Executive Order to be kept secret in the interest of national defense or the conduct of foreign affairs” (p. 42).

The effectiveness of the WPA produced mixed results. Surveys conducted by the Merit System Protections Board (MSPB) revealed that while perceptions of organizational wrongdoing had declined, the number of respondents indicating that they had engaged in whistleblowing and experienced retaliation had increased following the passage of the WPA (Near & Miceli, 2008). The results of the surveys suggest while the WPA was effective in deterring organizational wrongdoing and supporting the disclosure of wrongdoing, it fell short in improving retaliatory protections for employees engaging in whistleblowing (Caillier, 2013, p. 30). Miceli et al. (1999) note that the effectiveness of the WPA may have been indirectly influenced by several factors, including changes to the statutory definition of organizational wrongdoing and a potential increase in the social acceptability of whistleblowing (p. 145). Amendments to the WPA in 1994 provided greater clarity to rules concerning information disclosure by OSC to whistleblowers relating to case status, time limits for agency action, and adequate access to evidence to claimants should they submit their case to MSPB (S. Rep. No. 103-358, 1994).

Introduced in 2002, the Notification and Federal Employee Antidiscrimination and Retaliation (NoFEAR) Act (5 U.S.C. §2301) shifted focus towards organizational and managerial accountability relating to whistleblower retaliation. This focus contrasts

to earlier federal whistleblowing legislation that centered on individual whistleblower protections and incentivization. The primary mechanisms for enforcing organizational and managerial accountability through the NoFEAR Act include agency reimbursement of Judgment Fund resources for successful whistleblower cases and informing agency employees of whistleblower and anti-discriminatory rights (Borak, 2005). Additionally, the NoFEAR Act implemented agency mandated annual education of whistleblowing rights for all agency employees, ensuring federal employees access to information concerning whistleblower protections.

Passage of the Whistleblower Protection Enhancement Act (5 U.S.C. §§ 1201 – 1222), or WPEA, of 2012 signaled a return to whistleblower legislation focusing on individual protections from retaliation. The Act was a central platform of the presidential campaign of Senator Barack Obama in 2008, who had previously represented whistleblowers in *qui tam* suits. Passage of the WPEA represented a culmination of the efforts of the Obama administration towards strengthening protections afforded to whistleblowers who disclose wrongdoing (Moberly, 2012, p. 12). The WPEA provided greater clarity to the types of disclosures protected, refined definitions of prohibited personnel actions, and expanded the scope of judicial review processes relating to whistleblower disclosures. Moreover, the WPEA expanded OSC support for employees appealing MSPB rulings, employee whistleblowing education through Inspector General Office ombudsmen, and improved transparency in the reporting of MSPB whistleblower case outcomes (Peffer et al., 2015, p. 74). While the WPEA expanded whistleblower protections through the inclusion of federal employees of national security agencies such as the Transportation Security Administration (TSA), personnel within agencies such as

the National Security Administration (NSA) and Central Intelligence Agency (CIA) remain outside the scope of the WPEA.

Federally contracted employees and private sector employees are afforded varying degrees of protection from whistleblower disclosures. Ramirez (2007) cites the expansion of federal regulation of businesses in the 1960s and 1970s, enhanced protections for at-will employees, and a shift from retaliatory remedies through governmental enforcement to civil courts as the basis for early whistleblower protections for non-federal employees (p. 193). Whistleblower protection for non-governmental employees has typically been contained within separate, narrowly focused legislation featuring ancillary whistleblower retaliation protection provisions. Recent examples of such legislation include both the Sarbanes-Oxley Act of 2002 (18 U.S.C. §1514A) and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (124 U.S.C. §§1376-2223).

The inclusion of whistleblower protections for private sector employees illustrates the importance of regulatory agencies tasked with industry oversight. Provisions containing private sector employee whistleblowing protections in both the Sarbanes-Oxley Act (18 U.S.C. §1514A, 2002) and the Dodd-Frank Wall Street Reform and Consumer Protection Act (124 U.S.C. §§1376-2223, 2010) delegate responsibility to independent regulatory agencies such as the Securities Exchange Commission (SEC) for receiving and investigating disclosures of violations of law. As private sector employees of regulated industries are not afforded the formalized whistleblowing channels provided to federal employees, the link between independent regulatory agencies and information

pertaining to wrongdoing carries significant implications for the value of the information contained within whistleblowing disclosures.

The Value of Whistleblower Information

Expanded personnel protections against retaliation and guidelines for organizational accountability serve to encourage whistleblowing. However, recent whistleblowing legislation overlooks the primary objective of whistleblowing as a source of information. Underscoring the need for balance between whistleblower protection and utility of disclosed information, Borak (2005) suggests the development of legal measures which “maximize benefits to the public because the law’s reference point will gauge the quality of a whistleblower’s information and not their credibility” (p. 658). This perspective of whistleblowing shifts focus from the factors contributing to the disclosure to the information concerning the wrongdoing itself.

The quality of information contained within whistleblowing disclosures finds its greatest applicability when it indicates wrongdoing which may otherwise go unnoticed. Such information provides an invaluable resource for federal regulatory agencies. Whistleblowers with insider information concerning wrongdoing provide crucial knowledge of suspect activity which regulators may not be fully aware of or understand due to the complexity of organizational dynamics (Bucy, 2002, p. 940). Devine (1999) notes that the actions of the wrongdoing in question may be secondary to the value of the information submitted, stating “[E]ven dissenters with the basest of motives can make positive contributions if their disclosures are accurate and significant” (p. 532).

While public employees are provided with inter-organizational channels for airing concerns regarding wrongdoing, Shaprio and Kirkman (1999) suggest that employees in

organizations which exhibit conditions of bias or distrust may ultimately discourage individuals from submitting disclosures relating to wrongdoing. The accompanying employee silence, concerning employee decisions to withhold information about wrongdoing, supports previous research relating non-communication and information withholding to employee perceptions of organizational mistrust (Pinder & Harlos, 2001; Tangirala & Ramanujam, 2008).

Conversely, disclosing wrongdoing to formal channels may signify employee beliefs of fairness and equity in disclosure processing systems. Rubin and Perez-Chiques (2015) note that employees submitting whistleblowing disclosures to external recipients indicates varied perceptions in the fairness of disclosure processing between inter-organizational channels and external channels, as "...the filing of complaints may signal that individuals believe the grievance systems will handle claims in a balanced and fair manner" (p. 552). Examination of external channels for employee whistleblowing disclosures highlights the significance of employee perceptions of fairness and equity of how disclosures are processed, suggesting the viability of applying of procedural justice theory towards whistleblowing disclosure recipients.

Procedural Justice Theory

Procedural justice theory centers on the theoretical underpinnings of equity and equality. Although the concepts of equity and equality are commonly considered synonymous, it is important to distinguish the two concepts. Stone (2002) describes equality as denoting sameness and signification of the part of the distribution process that contains uniformity (p. 42). In this context, equality centers on the receipt of equal parts or proportionality of distributions. Conversely, the concept of equity relates to the

structure and execution of distribution processes. Equity, then, can be conceptualized not as the proportionality of distribution, but rather the inclusion, accessibility, or eligibility for the distribution process.

Substantial theoretical contributions closely examine the relationship between the two concepts. The development of social exchange theory, led by Thibaut and Kelley (1959), Blau (1964), and Homans (1974), introduced factors of interaction between individuals and groups as sources influencing equity and equality in the distribution process. Although the development of social exchange theory and equity theory provided conceptual foundations for further understanding social construction of perceptions of equity and equality, the underlying assumptions on which the theories derive raised questions as to the universal applicability of these theories. In a critique of social exchange and equity theory, Leventhal (1980) explored the theory's one-dimensional concept of fairness, singular focus on reward distribution, and exaggeration of the role of fairness within social relationships (p. 2). The resulting analysis of the shortcoming of social exchange theory and equity theory provide the foundation for procedural justice theory through two concepts: procedural fairness and the justice rules which guide them.

According to Leventhal (1980), the concept of procedural fairness concerns "...an individual's perception of the fairness of procedural component of the social system that regulate the allocative process" (p. 16), acting as a cognitive guide for the elements of reward distribution. To evaluate the equity and equality of distribution systems, Leventhal suggests that individuals utilize justice rules to develop perceptions of fairness. Satisfied justice rules indicate that individuals perceive allocative or distributive systems as fair and equitable. Leventhal developed six procedural justice rules that, when

satisfied, signal individual acceptance of allocative or distributive processes as fair and equitable: consistency, bias suppression, accuracy, correctability, representativeness, and ethicality.

Additionally, Leventhal outlined several factors which may significantly influence an individual's level of concern about the fairness or equity of an allocative or distributive process: the effect of social role, importance of adjacent goals, the probability of violation, and monolithic versus pluralist social systems.

Leventhal's construction of justice rules supplements Rawls' (1951) development of a theoretical procedure for ethical decision making. According to Rawls, a procedure which could be considered as being moral in judgment rested on seven factors: neutrality to the consequences of the decision, the decision is devoid of personal benefit, decisions are based upon fact, decisions follow a thorough investigation and review process, decisions are made with confidence, decisions exhibit consistency and universal applicability, and decisions are made in consideration with the applicable ethics principles of the situation (pp. 181 – 182). Furthermore, Rawls (1971) suggests that these factors exist within a 'veil of ignorance', wherein the parties involved in the process are unaware of how various influences will affect their case, obligating participants to evaluate principles based only on general considerations (p. 118). Considering these conditions, the factors contributing to an individual's perception of procedural justice and ethical fairness lend themselves towards examination of channels processing whistleblowing disclosures exhibiting the characteristics of fairness, equity, and justice.

Procedural Fairness Safeguards

Passage of the Civil Service Reform Act (CSRA) (5 U.S.C. §11) in 1978 initiated substantial reforms to the American civil service system, as well as the creation of organizations dedicated to safeguarding personnel protections established by the Act. Evidence of this initiative is visible through the agencies created through implementation of the CSRA. Independent, quasi-judicial agencies such as MSPB and OSC were developed to provide federal employees with formal channels for reporting potential violations of established public personnel protections and wrongdoing through impartial entities.

The establishment of formal personnel procedures for reporting and appealing organizational wrongdoing and suspected violations of public personnel protections has generated both support and opposition from critics of civil service standards. Opponents point out such procedural safeguards as barriers towards efficient and effective management of public sector employees. Despite objections to the implementation of additional personnel procedures, which opponents frequently view as excessive 'red tape', Rubin (2007) notes that the development of such procedures act as protections against prohibited personnel actions and function as a core element of merit system values (p. 125).

Research focusing on civil service reform and employee perceptions of procedural justice gains considerable importance when factoring for the potential of employee whistleblowing. Kolarska and Aldrich (1980) found that employees who indicate high levels of organizational commitment and job security are more likely to refrain from whistleblowing, which may be construed as straying from established organizational

norms and values. However, subsequent empirical research suggests that whistleblowing employees often exhibit greater organizational commitment, indicate lower fear of whistleblowing retaliation, and believe that disclosures of wrongdoing will be viewed as a proactive measure (Brewer & Selden, 1998; Jos et al., 1989; Near & Miceli, 1985).

Previous procedural justice research has focused primarily on internal organizational factors influencing employee perceptions of procedural justice. Similarly, surveys conducted by MSPB supplement research concerning employee perceptions of ethical organizational climates, bias suppression, equity, and managerial integrity. However, little research currently exists concerning changes in employee perceptions of procedural justice when factoring for both internal and external factors, such as agencies tasked with receiving, reviewing, and investigating whistleblower disclosures for federal employees.

This research examines the relationship between demographic factors contributing to employee perceptions of procedural justice and external factors such as formalized disclosure systems and whistleblowing legislation to understand the dynamics between disclosure systems and employee perceptions of organizational fairness and equity. Figure 2.1 illustrates the research model exploring the impact of organizational demographic and external whistleblowing factors on employee perceptions of procedural justice within their organization.

Model and Hypotheses

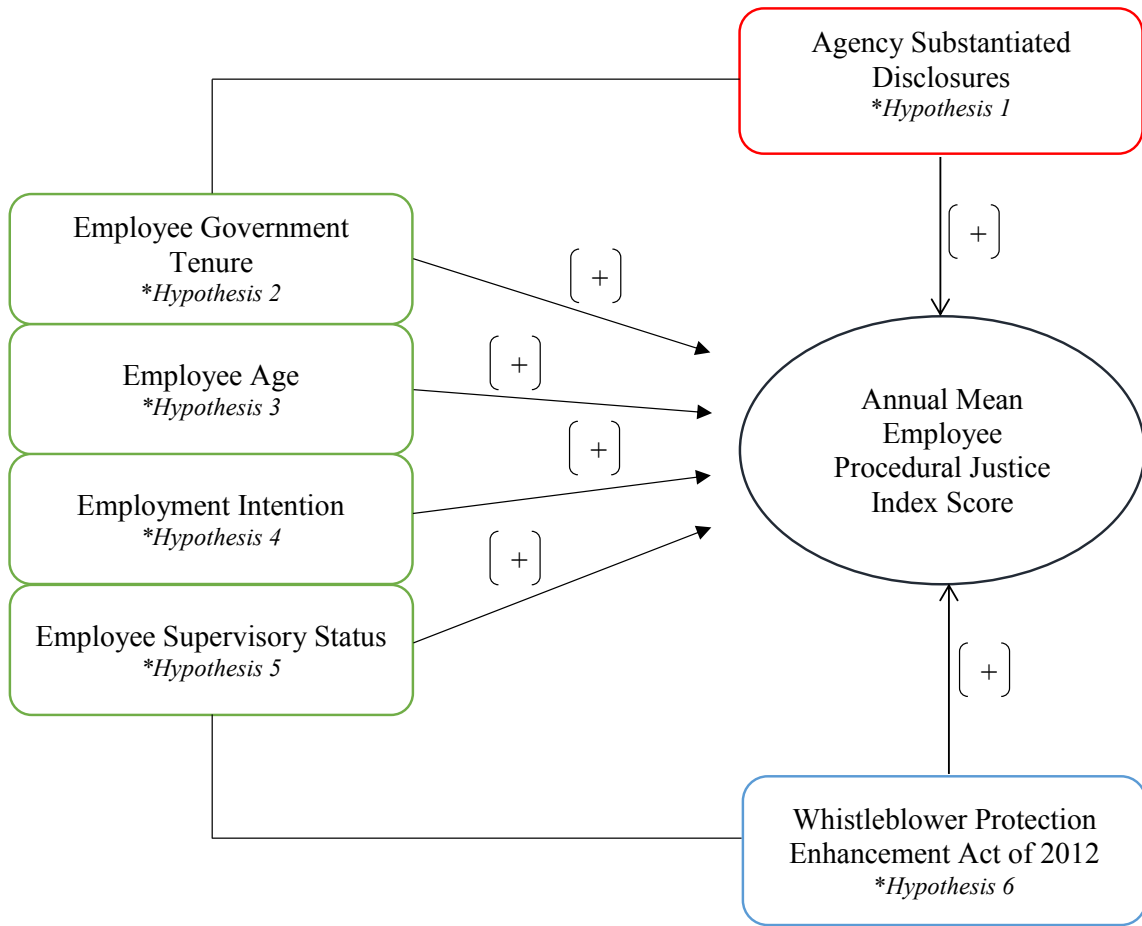


Figure 2.1 Research Model and Hypotheses

CHAPTER III

RESEARCH METHODS

This chapter introduces the unit of analysis and data used for the research, describes the variables incorporated in the research, and explains the operationalization of each of the variables included in the hypotheses.

Unit of Analysis

This research focuses on perceptions of organizational procedural justice by examining individual Federal Employee Viewpoint Survey (FEVS) responses for employees of federal independent regulatory agencies. Federal regulatory agencies play an integral role in the disclosure of wrongdoing between the public and private sectors. Expansion of federal regulation and regulatory accountability in the financial, health care, occupational safety, and environmental sectors increased substantially during the 1970s and 1980s (Dudley & Warren, 2015). Examining perceptions of external whistleblowing following regulatory expansion, Barnett (1992) notes that private companies perceived a higher level of employee voiced concerns to regulatory agencies and greater overall level of external whistleblowing (p. 956), illustrating the informational processing role of regulatory agencies in whistleblowing (Bucy, 2002, p. 18).

Independent regulatory agencies selected for analysis fall into two separate regulatory categories outlined by Dudley and Warren (2015): social regulation and economic regulation. Large independent regulatory agencies illustrate the impact of

governmental oversight over private industry, lending applicability to analysis of such agencies within this research. Compatibility of regulatory agencies selected for analysis is determined through both the availability of FEVS data and organizational employment size for agencies considered. Data for regulatory agency employee FEVS responses is retrieved from the U.S. Office of Personnel Management (OPM) website

<https://www.fedview.opm.gov/>. Data concerning regulatory agency employment size derives from OPM's federal human resources data FedScope repository website <https://www.fedscope.opm.gov/>.

Based on availability of FEVS data and similarities of agency size, this research examines perceptions of procedural justice for employees of the Nuclear Regulatory Commission (NRC) and the Securities and Exchange Commission (SEC). Within this research, the NRC represents a social regulatory agency while the SEC represents an economic regulatory agency. Selection of the NRC and SEC as units of analysis allows for comparative examination of independent regulatory agency employee perceptions of procedural justice based on regulatory sector. Both independent regulatory agencies selected are categorized as Large agencies employing 1,000 or more total civil service employees and share a comparable number of total employees and FEVS employee responses for the years selected. Tables 3.1 and 3.2 illustrate total agency employment and employee FEVS participation for the years selected.

Table 3.1 Nuclear Regulatory Commission Total Employment and FEVS Participation, 2010-2015.

| Year | Total # of Employees | # of Employees Surveyed | # of Employee Responses | % Response Rate |
|------|----------------------|-------------------------|-------------------------|-----------------|
| 2010 | 4,207 | N/A | 2,503 | N/A |
| 2011 | 4,106 | 3,779 | 2,612 | 69.1% |
| 2012 | 3,903 | 3,778 | 2,709 | 71.7% |
| 2013 | 3,846 | 3,599 | 2,509 | 69.7% |
| 2014 | 3,865 | 3,624 | 2,467 | 68.1% |
| 2015 | 3,802 | 3,590 | 2,675 | 74.5% |

Source: OPM, <https://www.fedview.opm.gov/>, <https://www.fedscope.opm.gov/>.

Table 3.2 Securities Exchange Commission Total Employment and FEVS Participation, 2010-2015.

| Year | Total # of Employees | # of Employees Surveyed | # of Employee Responses | % Response Rate |
|------|----------------------|-------------------------|-------------------------|-----------------|
| 2010 | 3,917 | N/A | 2,151 | N/A |
| 2011 | 3,846 | 1,514 | 809 | 53.4% |
| 2012 | 3,907 | 3,578 | 2,492 | 69.6% |
| 2013 | 4,135 | 3,665 | 2,422 | 66.1% |
| 2014 | 4,207 | 3,931 | 2,472 | 62.9% |
| 2015 | 4,413 | 2,675 | 1,921 | 71.8% |

Source: OPM, <https://www.fedview.opm.gov/>, <https://www.fedscope.opm.gov/>.

Data

Federal Employee Viewpoint Survey (FEVS)

To examine changes in employee perceptions of organizational procedural justice in conjunction with the proportion of agency substantiated disclosures, this research includes data from the Federal Employee Viewpoint Survey (FEVS) for the years preceding and following the introduction of federal whistleblowing legislation, 2010 – 2015. This approach allows for comparative analysis of the anticipated impact of federal

whistleblowing legislation on federal employees. The FEVS is an annually administered survey conducted by the Office of Personnel Management which seeks to “measure employees’ perceptions of whether, and to what extent, conditions characterizing successful organizations are present in their agencies” (US OPM, 2016). Earlier versions of the survey were titled the Federal Human Capital Survey (FHCS) and conducted by OPM on a bi-annual basis. Raw datasets and results from previous iterations of both the FHCS and FEVS are publicly available from OPM.

This research measures independent regulatory agency employee perceptions of procedural justice utilizing responses to FEV surveys from fiscal years 2010 through 2015. Years of FEVS responses selected represent equal points of data collection prior to and following the introduction of the WPEA, allowing for examination of proportion of agency substantiated disclosures referred by OSC in the years selected before and after the implementation of the WPEA in January 2013.

The methodology of the FEVS has remained largely unchanged since the deployment of the 2012 iteration of the survey. However, there are several changes to the items and sampling methods of the survey which distinguish the 2010 and 2011 versions of the survey from the current version of the survey introduced in 2012. Since the development and current version of the 2012 FEVS, the survey has incorporated 98 total survey items, including 84 items designed to measure employee perceptions of effective agency management and 14 items capturing demographic information. The FEVS administered in 2011 contained 95 survey items, with 84 items dedicated to the measurement of effective agency management and 11 items capturing demographic information. Additionally, the 2010 version of the FEVS incorporated 11 survey items

concerning demographic information, though the survey utilized six fewer items concerning employee perceptions of effective agency management, resulting in 89 total items included in the survey.

Secondly, the survey sample for the FEV survey for 2010 and 2011 contrasts to more recent versions of the survey in that the survey was directed towards full-time, permanent federal employees. Beginning with the 2012 version of the FEVS, the survey sample was expanded to include employees in full-time, part-time, permanent, and non-seasonal positions. The resulting change in sampling technique resulted in an increase in the number of Cabinet level and large agencies eligible to participate in the survey from 13 for the 2010 FEVS to 37 for the 2015 FEVS. Conversely, the change in sampling technique resulted in a decrease in the number of small or independent agencies participating in the survey from 53 during the 2011 FEVS to 44 in the 2015 FEVS. Expanded inclusion of agencies participating, as well as the increased number of employees selected to take the survey, has not resulted in significant changes to the overall response rate to the survey. Response rates to the FEVS have ranged from a low of 46.1% in 2012 to a high of 52% in 2010.

Use of FEVS data to analyze trends in federal employment has proven to be a significant area of interest for both practitioners and scholars alike. Fernandez et al. (2015) illustrate the rapidly expanding use of FEVS data through identifying a growing number of published research articles using FEVS data, citing representativeness, generalizability, and breadth of public management measurement items as considerable strengths of the survey lending itself to scholarly research (p. 387). The resulting scholarship stemming from FEVS data has contributed significant insight into issues of

leadership (Fernandez, 2008; Fernandez, Cho, & Perry, 2010; Kellis & Ran, 2013; Kim & Schachter, 2013; Lee, Cayer, & Lan, 2006; Oberfield, 2014; Oh & Lewis, 2008; Park, 2012; Trottier, Van Wart, & Wang, 2008), performance (Cho & Ringquist, 2011; Jung & Lee, 2012; Pitts, 2009; Yang, 2011), and job satisfaction (Choi, 2013; Pitts, Marvel, & Fernandez, 2011; Yang & Kassekert, 2010). Additionally, the use of FEVS data has resulted in notable advancements in literature focusing specifically on factors concerning employee perceptions of fairness and justice within both organizational and procedural contexts (Cho & Sai, 2012; Choi & Rainey, 2014; Rubin, 2007; Sabharwal, 2013).

Office of Special Counsel (OSC) Annual Reports to Congress

The number of whistleblowing disclosures referred to agency heads for investigation and report are extracted from the Office of Special Counsel Annual Reports to Congress from 2010 through 2015. These Annual Reports to Congress submitted by OSC contain detailed analysis of the budgetary agency operation, procedural impact of judicial cases concerning employee disclosures, statistical volume of cases received and processed per agency subunit, and the outcome of cases processed. Data concerning the number of whistleblowing disclosures for each year selected are reported by the OSC's Disclosure Unit (DU), which is responsible for preliminary review of disclosures to "...evaluate whether there is a 'substantial likelihood' that the information discloses one or more of the categories of wrongdoing described in 5 U.S.C. § 1213" (OSC, 2015, p. 33).

Employee disclosures where the DU finds reasonable belief that wrongdoing has occurred are referred to the head of the respective agency for review and investigation. Agency investigation and review of referred disclosures are reported as either

substantiated in whole, in part, or unsubstantiated. Once the agency has completed their review and investigation of the referred disclosure, a report is submitted back for review by the OSC and DU to determine the reasonableness of the agency's findings. Following final review of the agency report detailing review and investigation of the disclosure, OSC submits the report to the President and respective congressional oversight committees for the agency in question.

Dependent Variable

Dependent Variable: Procedural Justice Index Score

To measure employee perceptions of organizational procedural justice, this research utilizes FEVS survey questions exhibiting the strongest correlation to procedural justice "rules" originally developed by Leventhal (1980, p. 22). Leventhal's rules, including consistency, bias suppression, accuracy, correctability, representativeness, and ethicality, are described as:

- *Consistency*: "An individual's judgments of procedural fairness may be based on a consistency rule which dictates that allocated procedures should be consistent across persons and over time...[L]ack of consistency in procedure may lead an individual to believe that procedural fairness is being violated" (p. 23);

- *Bias Suppression*: “An individual’s judgments of procedural fairness may be based on a bias-suppression rule which dictates that personal self-interest and blind allegiance to narrow preconceptions should be prevented at all points in the allocative process....[A]n individual is likely to believe that procedural fairness is violated when there is unrestrained self-interest or devotion to doctrinaire views” (p. 24);
- *Accuracy*: “An individual’s judgments of procedural fairness may be based on an accuracy rule which dictates it is necessary to base the allocative process on as much good information and informed opinion as possible....[I]nformation and opinion must be gathered and processed with a minimum of error” (p. 25);
- *Correctability*: “The correctability rule dictates that opportunities must exist to modify and reverse decisions made at various points in the allocative process....A perceiver will attribute greater fairness to groups and organizations that provide legitimate avenues for challenging and overturning decisions” (p. 27);
- *Representativeness*: “An individual’s judgments of procedural fairness may be based on a representativeness rule which dictates that all phases of the allocative process must reflect the basic concerns, values, and outlook of important groups in the population of individuals affected by the allocative process” (p. 28); and

- *Ethicality*: “An individual’s judgments on procedural fairness may be based on an ethicality rule which dictates that allocative procedures must be compatible with the fundamental moral and ethical values accepted by that individual. Perceived fairness will be reduced where allocative procedures violate personal standards of ethics and morality”. (1980, p. 31).

In order to assess employee perceptions of representativeness within their organization, this research uses a tested measure of employee voice contained within Colquitt’s (2001) items of justice measurement based on Thibaut and Walker’s (1975) process control component of procedural justice. Leventhal’s correctability justice rule is represented by the appeal criteria, as both concepts relate to the rectification of concerns disclosed by employees central to whistleblowing.

Previous research utilizing FEVS data suggests that the survey results are valid constructs for determining levels of procedural justice perceptions amongst federal employees (*see*: Rubin & Weinberg, 2016). This research incorporates the procedural justice index containing established procedural justice criteria developed by Rubin and Weinberg (2016). Procedural justice criteria items selected and their corresponding FEVS questions are listed in Table 3.3.

Table 3.3 FEVS Procedural Justice Index Items

| Procedural Justice Criteria (FEVS Question #) | Survey Question |
|--|---|
| Accuracy Q15 | My performance appraisal is a fair representation of my performance. <i>All responses: 5 Strongly Agree, 4 Agree, 3 Neither Agree nor Disagree, 2 Disagree, 1 Strongly Disagree, X Do Not Know</i> |
| Appeal Q17 | I can disclose a suspected violation of law, rule, or regulation without fear of reprisal. <i>All responses: 5 Strongly Agree, 4 Agree, 3 Neither Agree nor Disagree, 2 Disagree, 1 Strongly Disagree, X Do Not Know</i> |
| Consistency Q22 | Promotions in my work unit are based on merit. <i>All responses: 5 Strongly Agree, 4 Agree, 3 Neither Agree nor Disagree, 2 Disagree, 1 Strongly Disagree, X Do Not Know</i> |
| Bias Suppression Q45 | My supervisor is committed to a workforce representative of all segments of society. <i>All responses: 5 Strongly Agree, 4 Agree, 3 Neither Agree nor Disagree, 2 Disagree, 1 Strongly Disagree, X Do Not Know</i> |
| Ethics Q54 | My organization's senior leaders maintain high standards of honesty and integrity. <i>All responses: 5 Strongly Agree, 4 Agree, 3 Neither Agree nor Disagree, 2 Disagree, 1 Strongly Disagree, X Do Not Know</i> |
| Voice Q63 | How satisfied are you with your involvement in decisions that effect your work? <i>All responses: 5 = Very Satisfied, 4 = Satisfied, 3 = Neither Satisfied nor Dissatisfied, 2 = Dissatisfied, 1 = Very Dissatisfied</i> |

Source: Rubin & Weinberg (2016)

FEVS questions selected as criteria for measurement of employee perceptions of procedural justice derive from the FEV surveys administered annually from 2010 through 2015. The questions selected for this research maintain uniformity across the years selected. Survey question numbering, question wording, and Likert scale response choices remain unchanged for the FEVS years selected. Of the survey items selected, five questions utilize 5-point Likert-type scales, with available responses ranging from 1 indicating the strongest negative response available (*strongly disagree*) to 5 for answers indicating the strongest positive responses available (*strongly agree*). One survey item, question #63, varies from the common response structure. This question, concerning the Voice criteria of procedural justice, uses a 5-point Likert-type scale similar to the remaining criteria questions selected. However, responses to the question indicate levels of satisfaction, ranging from 1 representing the most negative responses (*strongly dissatisfied*) to 5 indicating the strongest positive responses (*very satisfied*).

Initial construction of the procedural justice index results in a cumulative score for employee perceptions of organizational procedural justice ranging from 6 to 30. The sum of respondent scores is reduced by 6, so that the resulting procedural justice index produces a range from 0 to 24, with a score of 0 indicating the lowest employee perceptions of procedural justice and a score of 24 indicating the highest employee perceptions of procedural justice. As the procedural justice index measures employee perceptions of procedural justice within their respective organization, it cannot measure employee perceptions of procedural justice for external factors such as federal whistleblowing legislation or external organization activity.

The use of an additive index, as opposed to individual survey questions or factor structures, serves as a superior method of measuring employee perceptions of procedural justice (Rubin, 2011, p. 133). Spector (2002) notes that the primary benefit of additive index construction results from the canceling out of errors across survey items included within an index. Measurement validity of the procedural justice index is achieved through analysis of Cronbach's alpha scores for each of the FEVS years selected for the research.

Independent Variables and Hypotheses

Independent Variable: Agency Substantiated OSC Disclosures

To identify the influence of employee perceptions of procedural justice, this research uses the proportion of the OSC-substantiated disclosures and the total number of disclosures referred to agency heads. This metric is created by dividing the number of agency substantiated whistleblowing disclosures by the number of OSC merited disclosures which are remitted back to the origin agency for investigation and review.

The results of agency investigations and reports concerning whistleblowing disclosures referred by OSC are reported within two categories. Agency reviews and investigations which confirm merit are reported as disclosures substantiated in whole or in part, indicating a violation of law or policy as outlined in 5 U.S.C. § 1213.

Alternatively, results of agency reviews and investigations which conclude that the employee whistleblowing disclosure to OSC was without merit are reported to OSC as an unsubstantiated disclosure. Employee disclosures which are determined by agency review and investigation as unsubstantiated are then dismissed by OSC.

Hypothesis 1: The greater the annual proportion of OSC disclosures substantiated by agency review, the higher the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Employee Years of Government Tenure

Building upon the established connection between employee PSM and level of organizational commitment, the second independent variable will examine the relationship between the length of employee government tenure and levels of procedural justice. Caillier (2016) argues that employees with greater organizational tenure, agency commitment, and elevated interest in public safety and integrity may be more likely to engage in whistleblowing when compared to less tenured employees (p. 8). Employees submitting disclosures of suspected wrongdoing may signal employee confidence in the impartiality of the recipients of the disclosures. Additionally, employees with greater interest in public safety and integrity should also exhibit higher procedural justice scores.

Hypothesis 2: Increased employee government tenure positively influences the annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Agency Employee Age

Employee age has yet to be extensively examined as a potential factor contributing to perceptions of procedural justice and whistleblowing tendencies. Previous research by McFarlin and Sweeney (1992) identifies age as a significant predictor of employee perceptions of both distributive and procedural justice relating to personal and organizational outcomes. As whistleblowing research has established

organizational commitment as a key determinant of employee whistleblowing, the positive relationship between employee age and organizational commitment suggests a theoretical link connecting employee age, perceptions of procedural justice, and whistleblowing.

Hypothesis 3: Increased agency employee age positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Employment Intention

The relationship between employee loyalty and whistleblowing intentions has been subject to debate. Duska (1997) suggests that an employee's duty to engage in whistleblowing directly contradicts their duty to remain loyal to their organization. However, Vandekerckhove and Commers (2004) note this contradiction between employee organizational loyalty and responsibility to engage in whistleblowing can be averted through an adequate conceptualization of employee loyalty. This conceptualization of employee loyalty supplements the work of Near and Miceli (2016), who note that whistleblowers are often loyal employees who express concern for organizational integrity through engaging in whistleblowing behavior.

Hypothesis 4: Increased employee intention to remain with their agency positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Agency Employee Supervisory Status

This hypothesis is consistent with the findings of Keenan (1990), who found that managers with lower levels of service had inadequate information concerning disclosure of suspected wrongdoing when compared to managers with higher levels of service.

Hypothesis 5: Higher agency employee supervisory status positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Whistleblower Protection Enhancement Act of 2012

The influence of federal whistleblower legislation on employee perceptions of procedural justice has not been extensively examined. However, Miceli et al. (1999) indicate that employees reporting perceived wrongdoing decline over time following the introduction of whistleblowing legislation (p. 141). As employee perceptions of organizational wrongdoing decline over time, this research hypothesizes that employee perceptions of procedural justice will increase following the introduction of federal whistleblower legislation.

Hypothesis 6: The annual average procedural justice score for employees of each regulatory agency for years following the enactment of the WPEA will be greater than the annual average procedural justice score for employees of each regulatory agency for years prior to the enactment of the WPEA.

Operationalization of Independent Variables for Hypotheses 1-6

This section details the operationalization of hypotheses 1 – 6. Agency Employee Procedural Justice Score is the dependent variable associated with these hypotheses. A list of coding values of survey questions for hypotheses 2 through 5 are provided in Appendix B.

Independent Variable: Agency Substantiated OSC Disclosures

This independent variable represents the proportion of total annual disclosures referred by OSC to agencies for investigation and report which are substantiated in part or whole. It is anticipated that annual employee procedural justice scores will be greater in years which have a higher proportion of agency substantiated disclosures referred by OSC.

Hypothesis 1: The greater the annual proportion of OSC disclosures substantiated by agency review, the higher the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Employee Years of Government Tenure

Question: How long have you been with the Federal Government?

This variable represents an organizational demographic. Ordinal response values are coded into numerical values for analysis for FEVS years 2010, 2011, 2013, 2014, and 2015. Dichotomous response values are coded into numerical values for analysis for FEVS year 2012. It is anticipated that increased regulatory agency employee government tenure will positively influence annual employee procedural justice scores.

Hypothesis 2: Increased employee government tenure positively influences the annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Agency Employee Age

Question: What is your age group?

This variable represents an organizational demographic. Ordinal response values are coded into numerical values for analysis for FEVS years 2010, 2011, 2013, 2014, and 2015. Dichotomous response values are coded into numerical values for analysis for FEVS year 2012. It is anticipated that increased regulatory agency employee age will positively influence annual employee procedural justice scores.

Hypothesis 3: Increased agency employee age positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Employment Intention

Question: Are you considering leaving your organization within the next year, and if so, why?

This variable represents an organizational demographic. Ordinal response values are coded into five numerical values for analysis of FEVS years 2010 and 2011, and coded into four numerical values for analysis of FEVS years 2012 through 2015. Given the reverse coding values assigned to the survey response items, regression coefficient values are predicted to be negative. It is anticipated that increased intention of employees

of regulatory agencies to remain with their agency will positively influence annual employee procedural justice scores.

Hypothesis 4: Increased employee intention to remain with their agency positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Agency Employee Supervisory Status

Question: What is your supervisory status?

This variable represents an organizational demographic. Ordinal response values are coded into three numerical values for analysis of FEVS years 2010 and 2011.

Dichotomous response values are coded into two numerical values for analysis of FEVS years 2012 through 2015. It is anticipated that higher employee supervisory status of regulatory agencies will positively influence annual employee procedural justice scores.

Hypothesis 5: Higher agency employee supervisory status positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

Independent Variable: Whistleblower Protection Enhancement Act of 2012

This variable serves as an observational variable. It is anticipated that employees of each independent regulatory agency will report higher annual procedural justice scores the years following enactment of the WPEA compared to annually reported procedural justice scores prior to enactment of the WPEA.

Hypothesis 6: The annual average procedural justice score for employees of each regulatory agency for years following the enactment of the WPEA will be

greater than the annual average procedural justice score for employees of each regulatory agency for years prior to the enactment of the WPEA.

Statistical Analysis

Methodology

This research uses three approaches in the analysis of factors contributing to employee perceptions of procedural justice as they relate to whistleblowing factors.

First, employee procedural justice scores for each regulatory agency are calculated for FEVS years selected. Calculation of regulatory agency employee procedural justice scores for each of the years selected establishes the dependent variable of interest for this research. The first approach results in six (6) annual procedural justice scores per agency, with a total of twelve (12) annual procedural justice scores spanning the years selected for both agencies. The procedural justice scores are compared to the corresponding OSC Disclosure Substantiation Proportion for their respective years. This approach addresses Hypothesis 1.

Secondly, ordinary least squares (OLS) regression models are conducted for each of the years and agencies selected to identify independent variables suggesting a statistically significant impact on regulatory agency employee perceptions of procedural justice within their organization. OLS regression models are conducted for each agency and each year selected, with employee procedural justice score as the dependent variable and employee years of government tenure, employee age, employment intention, and employee managerial status as the independent variables. This results in six (6) OLS regression models per agency across the years selected totaling twelve (12) OLS regression models. The second approach address Hypotheses 2 through 5.

Lastly, inferential descriptive statistics are used to establish a connection between the average annual procedural justice index scores of independent regulatory agency employees prior to and following the introduction of the WPEA. The average annual procedural justice index score for independent regulatory agency employees for years 2010, 2011, and 2012 are compared to years 2013, 2014, and 2015 to account for the presence of federal whistleblower legislation and its hypothesized impact on employee perceptions of procedural justice. The final approach addresses Hypothesis 6.

Data Preparation

As analysis of the influence of the independent variables concerning organizational demographics for hypotheses 2-5 relies on employee responses to the corresponding FEVS demographic questions, complete case analysis is utilized for this research. Complete case analysis, which uses listwise deletion of missing values, results in cases being removed for incomplete or missing responses for both procedural justice index and organizational demographic survey items. Table 3.4 and 3.5 indicate complete independent regulatory agency employee responses for procedural justice index items only, employee responses for both procedural justice index items and organizational demographic survey items, and the number of cases deleted due to missing values or responses.

Table 3.4 NRC Employee Response Totals: PJI, PJI and Demographics, and Deleted 2010-2015

| Responses | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| PJI Only | 2037 | 2083 | 2169 | 1995 | 1942 | 2067 |
| PJI + Demographic | 1949 | 2007 | 2069 | 1878 | 1890 | 2000 |
| Cases Removed | 88 | 76 | 100 | 117 | 52 | 67 |

Table 3.5 SEC Employee Response Totals: PJI, PJI and Demographics, and Deleted 2010-2015

| Responses | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| PJI Only | 1562 | 608 | 1748 | 1699 | 1712 | 1389 |
| PJI + Demographic | 1496 | 573 | 1663 | 1587 | 1651 | 1090 |
| Cases Removed | 66 | 35 | 85 | 112 | 61 | 299 |

Due to variations in responses available concerning organizational demographic questions contained with the FEVS across the years selected, available responses to demographic FEVS questions are converted from string variables to numerical variables. Variances in available responses to demographic questions prevents the use of time series analysis to examine the impact of the WPEA in hypothesis 6 through the use of the legislation as an intervening variable across merged datasets. However, this approach permits the use of individual Ordinary Least Squares (OLS) regression models for each agency across the FEVS years selected, allowing for the construction of descriptive and inferential statistics which are used for observational analysis of procedural justice index scores prior to and following the enactment of the WPEA.

To prevent potential estimate bias of the sampled population statistics, data weights provided by FEVS are used in the OLS regression models for hypotheses 2 through 5. Per OPM (2015), the FEVS weights are created to take into consideration “the variable properties of selection across sample domains, nonresponse, and known demographics characteristics of the survey population” (p. 25). The resulting weights produce data which reflects federal workforce demographics and composition +/- 1%.

Data Analysis

This research uses separate analytical approaches to investigate the outlined hypotheses. Descriptive statistics, including inferential statistics and statistical frequencies, are utilized to examine hypotheses 1 and 6. Multiple OLS regression models are used to test hypotheses 2 through 5 using SPSS 23.0 statistical software. FEVS data for years 2011 through 2015 utilize SPSS, allowing for analysis of the data using the native statistical software package. FEVS data for 2010, available as an SAS file, was converted to an SPSS file using StatTransfer software.

CHAPTER IV

RESULTS AND ANALYSIS

This chapter indicates both the results of the statistical analysis and the theoretical implications of the present research.

Construct Validity

Factor analysis is conducted to identify component factor loading and communality extraction scores to ensure the FEVS questions selected for construction of procedural justice measurement originally developed by Rubin and Weinberg (2016) support the creation of a singular index. Procedural justice index component factor loading scores based on the selected FEVS questions for both agency across the years selected exceed .700, supporting the questions selected as a strong indicator of procedural justice measurement. Table 4.1 and Table 4.2 present procedural justice index factor loading and communality extraction scores for both agencies across the FEVS years selected.

Table 4.1 NRC Procedural Justice Index Factor Analysis, 2010-2015

| FEVS Question | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Q15) My performance appraisal is a fair reflection of my performance. | (.740) <i>.548</i> | (.743) <i>.552</i> | (.766) <i>.587</i> | (.773) <i>.598</i> | (.764) <i>.584</i> | (.788) <i>.620</i> |
| Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal. | (.798) <i>.636</i> | (.779) <i>.607</i> | (.803) <i>.645</i> | (.788) <i>.621</i> | (.807) <i>.652</i> | (.789) <i>.622</i> |
| Q22) Promotions in my work unit are based on merit. | (.801) <i>.641</i> | (.807) <i>.651</i> | (.814) <i>.662</i> | (.801) <i>.641</i> | (.807) <i>.651</i> | (.797) <i>.635</i> |
| Q45) My supervisor/team leader is committed to a workforce representative of all segments of society. | (.748) <i>.560</i> | (.754) <i>.568</i> | (.766) <i>.586</i> | (.771) <i>.595</i> | (.750) <i>.562</i> | (.749) <i>.561</i> |
| Q54) My organization's leaders maintain high standards of honesty and integrity. | (.823) <i>.677</i> | (.815) <i>.663</i> | (.831) <i>.691</i> | (.833) <i>.693</i> | (.808) <i>.654</i> | (.835) <i>.698</i> |
| Q63) How satisfied are you with your involvement in decisions that affect your work? | (.822) <i>.676</i> | (.838) <i>.702</i> | (.828) <i>.685</i> | (.827) <i>.684</i> | (.828) <i>.686</i> | (.837) <i>.701</i> |
| KMO Measure of Sampling Adequacy | .900 | .896 | .901 | .897 | .904 | .899 |
| Factors (Eigenvalue) | 1 (3.738) | 1 (3.744) | 1 (3.857) | 1 (3.832) | 1 (3.789) | 1 (3.837) |

Notes: Component Factor Loading Scores indicated in parentheses; Communality Extraction Scores are italicized.

Table 4.2 SEC Procedural Justice Factor Analysis, 2010-2015

| FEVS Question | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Q15) My performance appraisal is a fair reflection of my performance. | (.746) <i>.557</i> | (.745) <i>.555</i> | (.798) <i>.638</i> | (.778) <i>.605</i> | (.768) <i>.590</i> | (.788) <i>.621</i> |
| Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal. | (.758) <i>.575</i> | (.762) <i>.581</i> | (.775) <i>.600</i> | (.789) <i>.622</i> | (.785) <i>.616</i> | (.810) <i>.656</i> |
| Q22) Promotions in my work unit are based on merit. | (.798) <i>.637</i> | (.766) <i>.587</i> | (.809) <i>.654</i> | (.821) <i>.674</i> | (.807) <i>.651</i> | (.836) <i>.698</i> |
| Q45) My supervisor/team leader is committed to a workforce representative of all segments of society. | (.758) <i>.574</i> | (.748) <i>.560</i> | (.755) <i>.570</i> | (.764) <i>.584</i> | (.759) <i>.576</i> | (.761) <i>.579</i> |
| Q54) My organization's leaders maintain high standards of honesty and integrity. | (.803) <i>.645</i> | (.789) <i>.623</i> | (.830) <i>.689</i> | (.827) <i>.684</i> | (.823) <i>.677</i> | (.831) <i>.690</i> |
| Q63) How satisfied are you with your involvement in decisions that affect your work? | (.802) <i>.644</i> | (.782) <i>.612</i> | (.820) <i>.673</i> | (.845) <i>.714</i> | (.818) <i>.669</i> | (.841) <i>.707</i> |
| KMO Measure of Sampling Adequacy | <i>.894</i> | <i>.881</i> | <i>.905</i> | <i>.904</i> | <i>.896</i> | <i>.902</i> |
| Factors (Eigenvalue) | 1 (3.632) | 1 (3.518) | 1 (3.823) | 1 (3.883) | 1 (3.778) | 1 (3.951) |

Notes: Component Factor Loading Score indicated in parentheses; Community Extraction Scores are italicized.

Measurement of the validity of the constructed procedural justice index is completed through calculation of Cronbach's alpha scores for both agencies across the FEVS years selected for analysis. Cronbach's alpha scores for both agencies across the years selected exceed .850 annually, suggesting strong validity and reliability of the survey questions contained within the index in measuring employee perceptions of procedural justice. Table 4.3 indicates Cronbach's alpha scores for each agency for FEVS years 2010-2015.

Table 4.3 Cronbach's alpha for Procedural Justice Index per Agency for FEVS Years Selected

| FEVS Year | Nuclear Regulatory Commission (NRC) | Securities Exchange Commission (SEC) |
|-----------|-------------------------------------|--------------------------------------|
| 2010 | .877 (n = 2037) | .869 (n = 1562) |
| 2011 | .878 (n = 2083) | .857 (n = 608) |
| 2012 | .888 (n = 2169) | .885 (n = 1748) |
| 2013 | .886 (n = 1995) | .890 (n = 1699) |
| 2014 | .882 (n = 1942) | .881 (n = 1712) |
| 2015 | .886 (n = 2067) | .896 (n = 1389) |

OSC Substantiated Disclosure Proportion

Based on OSC Annual Reports to Congress, the proportion of agency substantiated whistleblowing disclosures remitted by OSC is calculated. Analysis of data concerning whistleblowing disclosures submitted to OSC reveals a considerable increase in the number of both new disclosures received by OSC and the number of disclosures referred to agency heads for investigation and report beginning in fiscal year 2013.

Calculation of the OSC Substantiated Disclosure Proportion is achieved by dividing the number of annual whistleblowing disclosures substantiated in whole or part by the annual number of OSC merited whistleblowing disclosures referred to originating agencies for review and investigation. As disclosures referred to agencies for review by OSC within a given fiscal year may not be completed until the following fiscal year, years in which the number of disclosures substantiated by reviewing agencies exceed the number of disclosures referred by OSC for agency investigation are reflected as 1.0 to

represent the maximum likelihood of whistleblower disclosure substantiation. The resulting OSC Substantiated Disclosure Proportions for fiscal years 2010 through 2015 are indicated in Table 4.4.

Table 4.4 OSC Substantiated Disclosure Proportion, 2010-2015

| Category | FY 2010 | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 |
|--|------------|--------------|--------------|--------------|--------------|------------|
| New Disclosures Received | 961 | 928 | 1,148 | 1,129 | 1,554 | 1,965 |
| Disclosures Referred for Agency Investigation | 24 | 47 | 39 | 51 | 92 | 62 |
| Referrals to Agency IG's | 2 | 5 | 6 | 2 | 0 | 0 |
| Agency Head Reports Sent to President and Congress | 67 | 22 | 36 | 54 | 26 | 72 |
| Disclosures Substantiated in Whole or in Part | 62 | 21 | 31 | 49 | 25 | 63 |
| Disclosures Unsubstantiated | 5 | 1 | 5 | 5 | 1 | 9 |
| Disclosure Substantiation Proportion | 1.0 | 0.447 | 0.795 | 0.961 | 0.272 | 1.0 |

Regulatory Agency Employee Procedural Justice Index Scores

Applying the constructed index, procedural justice index scores for employees of both the NRC and SEC providing responses to demographic questions are calculated for FEVS years 2010 through 2015. Tables 4.5 and 4.6 present regulatory agency procedural justice index scores for the FEVS years selected.

Table 4.5 NRC Procedural Justice Index Scores, 2010-2015

| Year | Mean PJI Score | Std. Dev. | N |
|------|----------------|-----------|------|
| 2010 | 18.086 | 6.024 | 1949 |
| 2011 | 17.811 | 5.924 | 2007 |
| 2012 | 17.201 | 6.329 | 2069 |
| 2013 | 16.972 | 6.22 | 1878 |
| 2014 | 16.864 | 6.283 | 1890 |
| 2015 | 17.061 | 6.115 | 2000 |

Table 4.6 SEC Procedural Justice Index Scores, 2010-2015

| Year | Mean PJI Score | Std. Dev. | N |
|------|----------------|-----------|------|
| 2010 | 14.921 | 5.512 | 1496 |
| 2011 | 15.199 | 5.250 | 573 |
| 2012 | 14.129 | 5.837 | 1663 |
| 2013 | 14.482 | 5.914 | 1587 |
| 2014 | 15.027 | 5.786 | 1651 |
| 2015 | 15.503 | 5.859 | 1090 |

Research Findings

Hypothesis 1: Agency Substantiated OSC Disclosures

Hypothesis 1 utilizes descriptive statistics concerning the annual mean regulatory agency employee procedural justice score and the calculated OSC Substantiated Disclosure Proportion to examine the hypothesized correlation between employee perceptions of procedural justice and the propensity of whistleblower disclosures being substantiated by their origin agency. Results of this analysis presented in Table 4.7.

Table 4.7 Annual Regulatory Agency Mean PJI Scores and OSC Substantiated Disclosure Proportions, 2010-2015

| FEVS Year | NRC Mean PJI Score | SEC Mean PJI Score | OSC Substantiated Disclosure Proportion |
|-----------|--------------------|--------------------|---|
| 2010 | 18.086 (1) | 14.921 (4) | 1.0 (1) |
| 2011 | 17.811 (2) | 15.199 (2) | 0.447 (5) |
| 2012 | 17.201 (3) | 14.129 (6) | 0.795 (4) |
| 2013 | 16.972 (5) | 14.482 (5) | 0.961 (3) |
| 2014 | 16.864 (6) | 15.027 (3) | 0.272 (6) |
| 2015 | 17.061 (4) | 15.503 (1) | 1.0 (1) |

Note: Number in parentheses indicates order of annual PJI score and OSC Substantiated Disclosure Proportion from highest (1) to lowest (6).

Hypotheses 2-5: Organizational Demographics

Employee perceptions of procedural justice, as measured by the Procedural Justice Index scores calculated for employees of both the NRC and SEC across FEVS years selected, is the dependent variable for hypotheses two through five. The independent variables for hypotheses two through five relate to organizational employee demographic questions contained within the FEV surveys: government tenure, age, supervisory status, and employment intention. These hypotheses explore the influence of organizational demographics on employee perceptions of procedural justice. Analysis of the impact of organizational demographics on employee perceptions of procedural justice is accomplished using ordinary least squares (OLS) regression models for both agencies across the FEVS years selected. Tables 4.8 through 4.13 present the results of the OLS regression models.

Table 4.8 2010 OLS Regression Results (Weighted)

| Hypothesis | Demographic Variable | NRC | | | SEC | | |
|------------|----------------------|------------------------|------------|------------|------------------------|------------|------------|
| | | Coefficient | Std. Error | Beta Score | Coefficient | Std. Error | Beta Score |
| H2 | Government Tenure | -0.209 (-3.394)*** | 0.062 | -0.085 | -0.523 (-5.343)*** | 0.098 | -0.157 |
| H3 | Age Group | -0.171 (-1.703)* | 0.101 | -0.041 | 0.246 (-1.538) | 0.16 | 0.045 |
| H4 | Employment Intention | -1.872 (-17.746)*** | 0.105 | -0.361 | -1.538 (-13.568)*** | 0.113 | -0.317 |
| H5 | Supervisory Status | 1.978 (-11.547)*** | 0.171 | 0.244 | 2.546 (12.768)*** | 0.199 | 0.304 |
| | Constant | 19.77 (51.232)*** | 0.386 | | 15.71 (29.969)*** | 0.524 | |

Adjusted $R^2_{NRC} = 0.200$ Adjusted $R^2_{SEC} = 0.190$

F_{NRC} Statistics (4, 1944): 122.451 F_{SEC} Statistics (4, 1491): 88.582

F_{NRC} Significance: 0.0001 F_{SEC} Significance: 0.0001

$N_{NRC} = 1948$ $N_{SEC} = 1495$

Note: t-score in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Two-tailed tests

Table 4.8 presents results of OLS regression models for both agencies based on employee responses to the 2010 FEVS. Both models are statistically significant ($p < .01$), though Adjusted R^2 scores for each model suggest low explanatory power. Independent variables government tenure, employment intention, and supervisory status are statistically significant for both agencies ($p < .01$). Employee age was statistically significant in the NRC model ($p < .1$), though is not statistically significant in the SEC model. The constant within both agency models for 2010 is statistically significant at the .01 level.

Table 4.9 2011 OLS Regression Results (Weighted)

| Hypothesis | Demographic Variable | NRC | | | SEC | | |
|------------|----------------------|------------------------|------------|------------|------------------------|------------|------------|
| | | Coefficient | Std. Error | Beta Score | Coefficient | Std. Error | Beta Score |
| H2 | Government Tenure | -0.257 (-4.013)*** | 0.064 | -0.099 | -0.744 (-5.032)*** | 0.148 | -0.234 |
| H3 | Age Group | -0.164 (-1.645)* | 0.100 | -0.039 | 0.031 (-1.538) | 0.236 | 0.006 |
| H4 | Employment Intention | -1.843 (-18.290)*** | 0.101 | -0.369 | -1.226 (-13.568)*** | 0.158 | -0.292 |
| H5 | Supervisory Status | 1.717 (-10.083)*** | 0.170 | 0.212 | 3.041 (9.249)*** | 0.329 | 0.361 |
| | Constant | 19.796 (51.964)*** | 0.386 | | 14.970 (19.783)*** | 0.757 | |

Adjusted $R^2_{NRC} = 0.185$ Adjusted $R^2_{SEC} = 0.201$

F_{NRC} Statistics (4, 2002): 115.007 F_{SEC} Statistics (4, 568): 37.045

F_{NRC} Significance: 0.0001 F_{SEC} Significance: 0.0001

$N_{NRC} = 2006$ $N_{SEC} = 572$

Note: t-score in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Two-tailed tests

Table 4.9 presents results of OLS regression models for both agencies based on employee responses to the 2011 FEVS. Both models are statistically significant ($p < .01$), though Adjusted R^2 scores for each model suggest low explanatory power. Independent variables government tenure, employment intention, and supervisory status are statistically significant for both agencies ($p < .01$). Employee age was statistically significant in the NRC model ($p < .1$), though is not statistically significant in the SEC model. The constant within both agency models for 2011 is statistically significant at the .01 level.

Table 4.10 2012 OLS Regression Results (Weighted)

| Hypothesis | Demographic Variable | NRC | | | SEC | | |
|------------|----------------------|------------------------|------------|------------|------------------------|------------|------------|
| | | Coefficient | Std. Error | Beta Score | Coefficient | Std. Error | Beta Score |
| H2 | Government Tenure | -0.385 (-1.500) | 0.257 | -0.036 | -1.751 (-5.958)*** | 0.294 | -0.150 |
| H3 | Age Group | -0.638 (-2.190)** | 0.291 | -0.052 | -0.839 (-2.648)*** | 0.317 | -0.067 |
| H4 | Employment Intention | -1.534 (-13.129)*** | 0.117 | -0.274 | -1.532 (-11.327)*** | 0.135 | -0.253 |
| H5 | Supervisory Status | 2.611 (9.098)*** | 0.287 | 0.197 | 4.631 (13.816)*** | 0.316 | 0.312 |
| | Constant | 17.989 (32.984)*** | 0.386 | | 15.344 (23.586)*** | 0.651 | |

Adjusted $R^2_{NRC} = 0.112$ Adjusted $R^2_{SEC} = 0.176$

F_{NRC} Statistics (4, 2064): 66.181 F_{SEC} Statistics (4, 1658): 89.752

F_{NRC} Significance: 0.0001 F_{SEC} Significance: 0.0001

$N_{NRC} = 2068$ $N_{SEC} = 1662$

Note: t-score in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Two-tailed tests

Table 4.10 presents results of OLS regression models for both agencies based on employee responses to the 2012 FEVS. Both models are statistically significant ($p < .01$), though Adjusted R^2 scores for each model suggest low explanatory power. Independent variables employment intention and supervisory status are statistically significant for both agencies ($p < .01$). NRC employee age was statistically significant at the .05 level and statistically significant in the SEC model at the .01 level. Government tenure is statistically significant for SEC employees ($p < .01$), though not statistically significant for NRC employees for 2012. The constant within both agency models for 2012 is statistically significant at the .01 level.

Table 4.11 2013 OLS Regression Results (Weighted)

| Hypothesis | Demographic Variable | NRC | | | SEC | | |
|------------|----------------------|------------------------|------------|------------|------------------------|------------|------------|
| | | Coefficient | Std. Error | Beta Score | Coefficient | Std. Error | Beta Score |
| H2 | Government Tenure | -0.144 (-0.806) | 0.179 | -0.020 | -1.015 (-4.862)*** | 0.209 | -0.129 |
| H3 | Age Group | 0.036 (0.291) | 0.122 | 0.007 | -0.109 (-0.645) | 0.169 | -0.017 |
| H4 | Employment Intention | -1.484 (-11.889)*** | 0.125 | -0.261 | -1.625 (-11.031)*** | 0.147 | -0.253 |
| H5 | Supervisory Status | 2.582 (8.554)*** | 0.302 | 0.194 | 4.527 (13.641)*** | 0.332 | 0.318 |
| | Constant | 16.250 (33.309)*** | 0.488 | | 13.843 (23.960)*** | 0.578 | |

Adjusted $R^2_{NRC} = 0.102$ Adjusted $R^2_{SEC} = 0.171$

F_{NRC} Statistics (4, 1873): 54.386 F_{SEC} Statistics (4, 1582): 82.640

F_{NRC} Significance: 0.0001 F_{SEC} Significance: 0.0001

$N_{NRC} = 1877$ $N_{SEC} = 1586$

Note: t-score in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Two-tailed tests

Table 4.11 presents results of OLS regression models for both agencies based on employee responses to the 2013 FEVS. Both models are statistically significant ($p < .01$), though Adjusted R^2 scores for each model suggest low explanatory power. Independent variables employment intention and supervisory status are statistically significant for both agencies ($p < .01$). Employee age is not statistically significant for either agency model for 2013. Government tenure is statistically significant for SEC employees ($p < .01$), though not statistically significant for NRC employees for 2013. The constant within both agency models for 2013 is statistically significant at the .01 level.

Table 4.12 2014 OLS Regression Results (Weighted)

| Hypothesis | Demographic Variable | NRC | | | SEC | | |
|------------|----------------------|------------------------|------------|------------|------------------------|------------|------------|
| | | Coefficient | Std. Error | Beta Score | Coefficient | Std. Error | Beta Score |
| H2 | Government Tenure | -0.295 (-1.518) | 0.194 | -0.039 | -1.312 (-6.570)*** | 0.200 | -0.172 |
| H3 | Age Group | 0.023 (0.189) | 0.121 | 0.005 | -0.057 (-0.348) | 0.163 | -0.009 |
| H4 | Employment Intention | -1.446 (-12.332)*** | 0.117 | -0.271 | -1.566 (-10.886)*** | 0.144 | -0.249 |
| H5 | Supervisory Status | 2.049 (6.969)*** | 0.294 | 0.158 | 3.425 (10.677)*** | 0.321 | 0.249 |
| | Constant | 17.182 (34.275)*** | 0.501 | | 16.098 (28.825)*** | 0.558 | |

Adjusted $R^2_{NRC} = 0.096$ Adjusted $R^2_{SEC} = 0.142$

F_{NRC} Statistics (4, 1885): 50.951 F_{SEC} Statistics (4, 1646): 69.073

F_{NRC} Significance: 0.0001 F_{SEC} Significance: 0.0001

$N_{NRC} = 1889$ $N_{SEC} = 1650$

Note: t-score in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Two-tailed tests

Table 4.12 presents results of OLS regression models for both agencies based on employee responses to the 2014 FEVS. Both models are statistically significant ($p < .01$), though Adjusted R^2 scores for each model suggest low explanatory power. Independent variables employment intention and supervisory status are statistically significant for both agencies ($p < .01$). Employee age is not statistically significant for either agency model for 2014. Government tenure is statistically significant for SEC employees ($p < .01$), though not statistically significant for NRC employees for 2014. The constant within both agency models for 2014 is statistically significant at the .01 level.

Table 4.13 2015 OLS Regression Results (Weighted)

| Hypothesis | Demographic Variable | NRC | | | SEC | | |
|------------|----------------------|------------------------|------------|------------|------------------------|------------|------------|
| | | Coefficient | Std. Error | Beta Score | Coefficient | Std. Error | Beta Score |
| H2 | Government Tenure | -0.287 (-1.459) | 0.196 | -0.036 | -1.112 (-4.359)*** | 0.255 | -0.146 |
| H3 | Age Group | -0.014 (-0.113) | 0.120 | -0.003 | -0.295 (-1.368) | 0.215 | -0.046 |
| H4 | Employment Intention | -1.278 (-10.990)*** | 0.116 | -0.235 | -1.962 (-10.503)*** | 0.187 | -0.295 |
| H5 | Supervisory Status | 2.781 (9.456)*** | 0.294 | 0.206 | 3.029 (7.494)*** | 0.404 | 0.213 |
| | Constant | 16.342 (32.329)*** | 0.506 | | 17.474 (24.655)*** | 0.709 | |

Adjusted $R^2_{NRC} = 0.098$ Adjusted $R^2_{SEC} = 0.142$

F_{NRC} Statistics (4, 1995): 55.182 F_{SEC} Statistics (4, 1085): 46.130

F_{NRC} Significance: 0.0001 F_{SEC} Significance: 0.0001

$N_{NRC} = 1999$ $N_{SEC} = 1089$

Note: t-score in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Two-tailed tests

Table 4.13 presents results of OLS regression models for both agencies based on employee responses to the 2015 FEVS. Both models are statistically significant ($p < .01$), though Adjusted R^2 scores for each model suggest low explanatory power. Independent variables employment intention and supervisory status are statistically significant for both agencies ($p < .01$). Employee age is not statistically significant for either agency model for 2015. Government tenure is statistically significant for SEC employees ($p < .01$), though not statistically significant for NRC employees for 2015. The constant within both agency models for 2015 is statistically significant at the .01 level.

Testing for potential issues of multicollinearity within the models, variance inflation factor (VIF) tests are included within each model. Review of the VIF tests for each model provide no indication of multicollinearity issues, as VIF scores for each

model fall well below thresholds established by Fox (5.26) and Chatterjee (10.0). Additionally, variables included in the models do not fall below tolerance thresholds established by Fox (0.19) and Chatterjee (0.10), suggesting the models are free of multicollinearity. As multicollinearity within the models is not detected, no independent variables have been removed from the models. Results of multicollinearity tests for each of the proceeding models are provided in Appendix C.

Hypothesis 6: Whistleblower Protection Enhancement Act

Hypothesis 6 examines the potential influence of federal whistleblower legislation on changes in regulatory employee perceptions of procedural justice. Mean procedural justice index scores for employees of both regulatory agencies are calculated for the three (3) years prior to and the three (3) years following enactment of federal whistleblowing legislation. As the Whistleblower Protection Enhancement Act of 2012 was effective as of January 2013, FEV survey results for fiscal years 2013 through 2015 represent the three years under which regulatory agency employee procedural justice scores are captured under new whistleblower protections provided by the legislation. Table 4.14 outlines mean procedural justice index scores for employees of both regulatory agencies across FEVS years selected.

Table 4.14 Regulatory Agency Mean PJI Scores, 2010-2015

| FEVS Year | NRC Mean PJI Score | SEC Mean PJI Score | WPEA Enacted |
|-----------|--------------------|--------------------|--------------|
| 2010 | 18.086 (1) | 14.921 (4) | No |
| 2011 | 17.811 (2) | 15.199 (2) | No |
| 2012 | 17.201 (3) | 14.129 (6) | No |
| 2013 | 16.972 (5) | 14.482 (5) | Yes |
| 2014 | 16.864 (6) | 15.027 (3) | Yes |
| 2015 | 17.061 (4) | 15.503 (1) | Yes |

Note: Number in parentheses indicates order of procedural justice index score from highest (1) to lowest (6).

Findings from Hypothesis 1

This section details the findings of hypothesis 1. Values of the calculated regulatory agency employee procedural justice scores and OSC Disclosure Substantiation Proportions are observed to confirm or dismiss the hypothesis.

PJI Scores and OSC Disclosure Substantiation Proportion

Hypothesis 1: The greater the annual proportion of OSC disclosures substantiated by agency review, the higher the average annual procedural justice index score for employees of each regulatory agency.

The first hypothesis is not confirmed. The highest average regulatory employee procedural justice index scores do not coincide with years in which OSC Disclosure Substantiation Proportions are highest. Results of the Spearman Rank-Order Correlation test reveals no statistically significant correlation between NRC and SEC employee

procedural justice index scores and annual OSC Substantiated Disclosure Proportions. Although the highest reported regulatory agency employee procedural justice index scores did not coincide with the years in which OSC Disclosure Substantiation Proportions are highest, years which indicated the highest OSC Disclosure Substantiation Proportions are those following a full year of enactment of legislation containing whistleblowing provisions. Furthermore, regulatory agency employee procedural justice index scores increased in 2015 following a full year of WPEA implementation and the highest observed OSC Substantiated Disclosure Proportion (0.962).

Findings from Hypotheses 2-5

This section details the findings of hypotheses 2-5. Regulatory agency employee procedural justice index scores are the dependent variable for hypotheses 2-5.

Independent Variable: Employee Tenure

Hypothesis 2: Increased employee government tenure positively influences the annual procedural justice score for employees of each regulatory agency.

The second hypothesis is not confirmed. Although employee government tenure was statistically significant for FEVS respondents from the SEC across the years selected ($p < .01$), employee government tenure was only a statistically significant factor for employees of the NRC for the first two FEVS years observed ($p < .01$). The statistical significance of employee government tenure on perceptions of procedural justice of SEC employees across all FEVS years selected and for the first two FEVS years selected for NRC analysis lends some support to Caillier's (2016) assertion that employee tenure contributes to whistleblowing tendencies. However, the model results for the second

hypothesis warrant further investigation into discrepancies in employee perceptions of procedural justice contingent on regulatory sector.

Independent Variable: Employee Age

Hypothesis 3: Increased agency employee age positively influences the average annual procedural justice index score for employees of each regulatory agency.

The third hypothesis is not confirmed. Model results indicate employee age as a statistically significant influence on NRC employee perceptions of procedural justice for the first three FEVS years selected, though the variable does not remain statistically significant for FEVS years 2013-2015. Additionally, employee age was statistically significant for only one FEVS year analyzed for SEC employees (2012). These results run contrary to the work of McFarlin and Sweeney (1992), which suggests that employee age influences perceptions of both distributive and procedural justice concerning individual and organizational outcomes.

Independent Variable: Employment Intention

Hypothesis 4: Increased employee intention to remain with their agency positively influences the average annual procedural justice index score for employees of each regulatory agency.

The fourth hypothesis is confirmed. Results of the models for both employees of NRC and SEC indicate an employee's employment intention is a statistically significant variable in employee perceptions of procedural justice ($p < .01$). The statistical significance of employment intention as a factor in employee perceptions of procedural justice supplements the work of Near and Miceli (2016) which suggests that

whistleblowers are often employees who have strong organizational commitment and loyalty.

Independent Variable: Employee Supervisory Status

Hypothesis 5: Higher agency employee supervisory status positively influences the average annual procedural justice index score for employees of each independent regulatory agency.

The fifth hypothesis is confirmed. OLS regression models conducted for both regulatory agencies indicate employee supervisory status as a statistically significant influence on annual average employee procedural justice index scores ($p < .01$). The role of employee supervisory status as a consistently significant influence on employee perceptions of procedural justice supports the notion that supervisory status within federal agencies coincides with organizational satisfaction, confidence in the filing of complaints, and perceptions of organizational fairness and equity (Ashforth & Mael, 1989). Additionally, these findings bolster the empirical findings of Rubin & Perez-Chiques (2015) indicating the significance of organizational position on perceptions of procedural justice.

Findings from Hypothesis 6

This section details the findings of hypothesis 6. Values of the calculated regulatory agency employee procedural justice scores are observed for the three (3) years prior to and following the enactment of the Whistleblower Protection Enhancement Act of 2012 to confirm or dismiss the hypothesis.

Procedural Justice Index Scores Prior to and Following the WPEA

Hypothesis 6: The annual average procedural justice score for employees of each regulatory agency for years following the enactment of the WPEA will be greater than the annual average procedural justice score for employees of each regulatory agency for years prior to the enactment of the WPEA.

The sixth hypothesis is not confirmed. Calculated procedural justice index scores for employees of both the NRC and SEC reveal notable contrasts across the FEVS years observed. Average NRC employee procedural justice index scores indicate an annual decline in perceptions of procedural justice beginning in 2010 (18.086) until 2014 (16.864) before a slight increase in 2015 (17.061). Conversely, SEC employee procedural justice index scores increased from 14.921 in 2010 to 15.199 in 2011, followed by a considerable decline in 2012 (14.129). SEC employee procedural justice index scores increased annually from 2013 (14.482) to 2015 (15.503). However, neither agency recorded highest average annual procedural justice scores following enactment of the WPEA of 2012.

Table 4.15 visualizes the results of hypotheses 1-6 indicating whether the hypotheses were confirmed or unconfirmed. Hypotheses 1 and 6 represent whistleblowing factor variables, while Hypotheses 2 through 5 represent organizational demographic variables.

Table 4.15 Hypotheses 1-6: Confirmed or Unconfirmed

| Hypothesis | Confirmed or Unconfirmed |
|---|--------------------------|
| <i>H1</i> : The greater the annual proportion of OSC disclosures substantiated by agency review, the higher the average annual procedural justice score for employees of each regulatory agency. | Unconfirmed |
| <i>H2</i> : Increased employee government tenure positively influences the annual procedural justice index score for employees of each independent regulatory agency. | Unconfirmed |
| <i>H3</i> : Increased agency employee age positively influences the average annual procedural justice index score for employees of each independent regulatory agency. | Unconfirmed |
| <i>H4</i> : Increased employee intention to remain with their agency positively influences the average annual procedural justice index score for employees of each independent regulatory agency. | Confirmed |
| <i>H5</i> : Higher agency employee supervisory status positively influences the average annual procedural justice index score for employees of each independent regulatory agency. | Confirmed |
| <i>H6</i> : The annual average procedural justice score for employees of each regulatory agency will be greater in the years following enactment of the WPEA than for years prior to enactment of the WPEA. | Unconfirmed |

The following chapter expands upon the research findings outlined in Chapter 4. Summary of the key findings in Chapter 5 are followed by discussion of the implications and limitations of the research, along with future research concepts designed to build upon the current research findings.

CHAPTER V

CONCLUSION

This final dissertation chapter begins by discussing the relevance of the research and providing a summary of the research results, followed by both the theoretical and practical implications of the research findings. The chapter concludes with limitations to the current research and suggestions for advancing the findings through future research initiatives.

Discussion

The focus on this dissertation has centered on the critical role of ethics in public administration and emphasized the importance of employee perceptions of fairness and equity within their organization when factoring for whistleblowing elements. Considering the exploratory nature of this research concerning the potential relationship between procedural justice and whistleblowing, I chose to examine internal organizational demographics and external whistleblowing factors to determine if a relationship between employee perceptions of procedural justice and whistleblowing elements exists.

Examining the potential relationship between employee perceptions of procedural justice and external whistleblowing factors builds upon several concepts central to the field of public administration. First, this research illustrates the function of organizational ethics through identifying demographic factors which shape employee

perceptions of organizational fairness and equity in decision making processes. Secondly, this dissertation incorporates examination of an external whistleblowing channel, the Office of Special Counsel, which utilizes intra-agency review and investigation of whistleblowing disclosures to identify possible correlations between the propensity of agencies to substantiate employee whistleblowing disclosures and subsequent changes in employee perceptions of fairness and equity within organizational decision making actions. Lastly, this research investigates the possible influence of federal whistleblowing legislation on employee perceptions of procedural justice by observing changes to procedural justice index scores prior to and following the introduction of legislation designed to foster ethical organizational climates.

To examine employee perceptions of procedural justice within the context of whistleblowing, this research has focused on three key questions concerning the hypothesized relationship: does a correlation exist between the propensity of agencies to substantiate OSC merited whistleblowing claims and employee perceptions of procedural justice, what demographic factors influence regulatory agency employee perceptions of procedural justice, and are greater levels of procedural justice perceived by employees following the introduction of federal whistleblower legislation? Addressing these research questions required developing hypotheses representing three separate components merging procedural justice and whistleblowing literature. The resulting components allowed me to examine external, demographic, and legislative factors relating to both procedural justice and whistleblowing.

Identifying federal regulatory agency employee perceptions of procedural justice across the years selected required utilizing federally available survey data capturing

employee opinions concerning their organizational climate. Using FEVS data, I utilized an established procedural justice index used by Rubin and Weinberg (2016) which incorporated FEVS data to examine federal employee perceptions of procedural justice. Harnessing a previously established procedural justice index based on FEVS questions permitted me to apply the index to federal agencies participating in the FEVS for the years selected representing years prior to and following the enactment of federal whistleblower legislation.

In order to observe external factors which may indicate a correlation between employee perceptions of procedural justice and whistleblowing, I selected a federal agency whose mission is to process and review whistleblowing disclosures from federal employees. Data available by Office of Special Counsel provides a unique external factor indicator, as the proportion of OSC merited whistleblowing disclosures substantiated by origin agency review provides an indication of the propensity of federal agencies to support employee disclosures of wrongdoing. Procedural justice literature provided a critical link between employee perceptions of fairness and equity in organizational decision making and the trust placed within organizational leaders to justify employee concerns regarding organizational wrongdoing. Additionally, procedural justice literature has indicated that employee trust and organizational fairness are key contributors to positive employee perceptions of procedural justice. These indicators provide the connection between employee perceptions of procedural justice and organizational fairness and equity exhibited by the tendencies of agencies to substantiate whistleblower disclosures referred by OSC.

Introducing regulatory agency employee procedural justice index scores prior to and following the introduction of the WPEA allowed me to examine variations and trends in employee perceptions of procedural justice following comprehensive legislation designed to encourage whistleblowing disclosures through enhanced personnel protections. While it is not possible to determine a causal relationship between employee perceptions of procedural justice and the introduction of federal whistleblower legislation within this research, observations of procedural justice index scores before and after the enactment of the WPEA provides inference regarding a potential relationship, or lack thereof, between perceptions of procedural justice and whistleblowing legislation. Perhaps more importantly, this research represents the first scholarly attempt to examine federal employee perceptions of procedural justice when factoring for the introduction of legislation designed to encourage whistleblowing disclosures by federal employees and enhance the ethical climate of federal agencies.

Summary of Findings

Overall, the results of this dissertation suggest that internal organizational factors exert greater influence on employee perceptions of procedural justice compared to external factors. The results indicate that employee organizational position and employment intention significantly contribute to perceptions of procedural justice. Moreover, the research findings indicate non-organizational position demographic factors such as employee age and organizational tenure are not statistically significant contributors to perceptions of procedural justice.

The results of this research suggest that external whistleblowing factors, including the proportion of agency substantiated whistleblowing disclosures merited by OSC and

the introduction of federal whistleblower legislation, do not infer a correlation between external whistleblowing factors and employee perceptions of procedural justice. Comparative analysis of the constructed Annual OSC Substantiated Disclosure Proportion for the selected years prior to and following the introduction of federal whistleblowing legislation and average annual employee procedural justice index scores for regulatory agencies does not result in an observed relationship. Finally, the observed average annual employee procedural justice index scores for regulatory agency employees did not increase following introduction of the WPEA. Overall, the dissertation results suggest internal organizational factors provide the greatest influence on employee perceptions of procedural justice as opposed to external factors.

Specifically, the research findings support previous procedural justice literature indicating internal organizational factors such as employee supervisory status and intention to remain with their agency as the most significant contributors to positive perceptions of procedural justice. Notably, the results of the multiple regression analyses illustrate higher employee supervisory status and greater employee intention to remain with their agency exert the greatest influence towards positive perceptions of procedural justice. This position is supported by the annual statistical significance of both supervisory status and employment intention ($p < .01$) within regression models for both independent regulatory agencies across the years selected.

Conversely, the results of the multiple regression models for hypothesized whistleblower demographic variables employee age and employment tenure were not found to have a statistically significant influence on annual employee perceptions of procedural justice. Despite the failure of the models to confirm employee age and

employment tenure as whistleblower demographic variables consistently contributing to employee perceptions of procedural justice, the statistical significance of these variables in select regression models for the agencies analyzed provides unique opportunities for further examination. Factoring these findings, the research results suggest that demographic variables theoretically contributing to employee perceptions of procedural justice and whistleblowing may ultimately lie within separate spheres. Ultimately, the results of this research further reinforce established literature supporting organizational position and climate as primary contributors to employee perceptions of procedural justice.

Analysis of regulatory agency employee perceptions of procedural justice prior to and following the introduction of federal whistleblower legislation did not suggest the presence of a relationship. Contrary to the proposed hypothesis, the highest average annual employee procedural justice scores were not observed following the introduction of the WPEA. The lack of evidence suggesting a relationship between higher employee perceptions of procedural justice and the introduction of federal whistleblower legislation is not, however, a clear indication that the introduction of federal legislation influences employee perceptions of procedural justice to a certain degree.

Variations in average annual employee procedural justice index scores for the agencies observed provide intriguing leads towards analyzing the role of legislative intent and scope as it relates to employee perceptions of procedural justice and whistleblowing climates. The results of this exploratory research examining the hypothesized relationship between employee perceptions of procedural justice and whistleblowing legislation suggests that employee perceptions of procedural justice may be influenced

more by narrowly tailored legislation as opposed to whistleblowing legislation which is universally applicable to all federal employees.

Theoretical Implications of the Research

OSC Substantiated Disclosure Proportion

Miceli and Near (2002) point out that examining potential relationships between whistleblowers and various parties involved in the disclosure process are critical towards understanding the results of whistleblowing (p. 475). Previous whistleblowing research focusing on the relationship between whistleblowers and the parties participating in the disclosure process have frequently centered on self-reported data and surveys reflecting the perspectives of individuals within an organizational which may be subject to whistleblowing tendencies. While whistleblowing research viewing employee perceptions within an organizational context have found theoretical application, there exists no literature exploring employee perceptions of organizational fairness and equity within a whistleblowing context which consider the potential influence of external parties utilizing intra-organizational review processes.

The lack of an observable, inferred relationship between the annual proportion of OSC merited disclosure substantiated by origin agency review and federal employee perceptions of procedural justice raises several interesting questions as to why a relationship does not appear to exist. One potential answer may lay within the fact that many federal employees are not fully aware of their rights, protections, and formal remedies afforded to them under various whistleblower protection laws (MSPB, 2012). Federal employees who do not have a clear and comprehensive understanding of formal whistleblower disclosure channels available to them may lack knowledge concerning the

functions and processes utilized by formal disclosure channels such as MSPB and OSC. Additionally, federal employees disclosing suspected wrongdoing outside of formalized disclosure channels such as MSPB and OSC may not provide measurable opinions concerning the influence of MSPB and OSC activity as a basis for selecting alternative disclosure channels as the primary method of addressing suspected organizational wrongdoing.

Organizational Demographics

Models within this research refuting employee tenure as a contributor to positive perceptions of procedural justice align with previous research centering on public employee whistleblowing. The lack of a statistically significant relationship between employee perceptions of procedural justice and organizational tenure supplement the findings of Dworkin and Baucus (1995), indicating employees with lower levels of organizational tenure are more likely to utilize external whistleblowing channels over internal whistleblowing channels (p. 1290). As employees with lower organizational tenure are more likely to bypass internal whistleblowing channels, which would provide an indication of positive perceptions of procedural justice, the failure of the research models to indicate a statistically significant relationship between organizational tenure and positive perceptions of procedural justice suggests alternative explanations exist concerning the relationship between employee perceptions of procedural justice and whistleblowing tendencies based on organizational tenure.

Similar to the research results concerning employee tenure and perceptions of procedural justice, employee age was found not to be a significant factor in the measurement of procedural justice perceptions. The lack of support for employee age as

a contributing factor to perceptions of procedural justice runs in contrast to previous whistleblowing literature suggesting older employees as more likely to engage in whistleblowing (Mesmer-Magnus & Viswesvaran, 2005). Additionally, the connection between employee age, positive perceptions of procedural justice, and whistleblowing determinants becomes more complex when considering the gap in both procedural justice and whistleblowing research focusing specifically on employee age.

The complication concerning the literary connection between employee age, perceptions of procedural justice, and whistleblowing factors arises from conflicting research results examining employee age within separate procedural justice and whistleblowing contexts. Research by McFarlin and Sweeney (1992) posits employee age as a factor in determining perceptions of procedural justice, suggesting a theoretical connection between employee age, perceptions of procedural justice, and whistleblowing tendencies as illustrated by Mesmer-Magnus & Viswesvaran (2005). However, as indicated by this research, employee age does not represent a statistically significant factor towards perceptions of procedural justice within a whistleblowing context.

The relationship between increased employee perceptions of procedural justice and lower employee intention to leave their organization bolsters existing procedural justice and whistleblowing research. Turnover intention and employee perceptions find common ground in the fact that "...perceptions of procedural justice increase the degree to which employees trust their managers, increase their overall satisfaction, and decrease turnover intentions" (Rubin, 2007, p. 138). The results of this research support this proposition not only from the context of procedural justice, but also within previous

whistleblowing research indicating that whistleblowers tend to indicate higher levels of job commitment and organizational loyalty (Brewer & Selden, 1998, p. 431).

Although the current research lacks support for employee organizational tenure and employee age as significant factors contributing to perceptions of procedural justice, the findings support established literature linking both supervisory status and employment intention to employee perceptions of procedural justice and whistleblowing determinants. These research results indicate a positive, statistically significant relationship between increased procedural justice index scores, higher employee supervisory status, and employee intention to remain with their agency suggest the role of organizational position as a key determinant of positive employee perceptions of procedural justice within their respective organization. Similarly, previous whistleblowing literature has pointed to supervisory status and organizational loyalty as predictors of whistle-blowing tendencies.

Examining variations in employee perceptions of procedural justice based on organizational position, Rubin and Perez-Chiques (2015) note that front-line employees report lower perceptions of fairness overall when compared to employees in a supervisory position (p. 559-560). The findings of Rubin and Perez-Chiques present a connection to the research of Lavena (2016) indicating that employees with greater trust in supervisors decreases the chances of engaging in whistleblowing. In this context, the role of supervisors as a conduit of positive perceptions of procedural justice may directly or indirectly influence front-line employee perceptions of fairness and trust in organizational leadership in addressing concerns regarding possible wrongdoing.

Federal Whistleblower Legislation

Examining changes to employee perceptions of procedural justice following the introduction of federal legislation represents a missing component of procedural justice and whistleblowing literature. Previous research concerning changes in employee perceptions of procedural justice over periods of time have been narrowly tailored towards examining the impact of personnel system reforms using self-reported perceptual data (Kellough & Nigro, 2002; Pearce & Perry, 1983). Additionally, the examination of separate independent regulatory agencies based on regulatory sector highlights variations in employee procedural justice perceptions, as agency differences may be a sign of more or less successful judicialization efforts (Rubin & Perez-Chiques, 2015, p. 568).

A focal component of this research concerns examination of procedural justice scores for employees of independent regulatory agencies prior to and following the introduction of federal whistleblower legislation. Although annually higher procedural justice index scores for employees of both economic and social regulatory agencies did not correlate with the introduction of the WPEA, findings of the procedural justice index scores for both regulatory agencies present interesting findings as they relate to federal whistleblowing legislation.

Differences in regulatory agency procedural justice index scores following the introduction of federal legislation suggests that the scope of legislation may influence employee perceptions of procedural justice. Procedural justice index scores for SEC respondents increased from 14.921 in 2010 to 15.199 in 2011 following the introduction of the Dodd-Frank Act which contained provisions and protections for whistleblowers in the financial sector. Following a decline in the average SEC employee procedural justice

index score in 2012 (14.129), employees indicated an annual increase in procedural justice index scores in 2013 (14.482), 2014 (15.027), and 2015 (15.503). The annual increase in procedural justice index scores for SEC employees coincides with the enactment of the WPEA in January 2013. Conversely, procedural justice index scores for NRC respondents indicate an annual decline from a high of 18.086 in 2010 to 16.864 in 2014 before increasing to 17.061 in 2015.

In addition to the role of federal legislation containing broad or narrow whistleblower provisions, judicial decisions concerning whistleblower cases may provide insight into the relationship between employee perceptions of procedural justice and whistleblowing factors. Beyond the scope of judicial decisions focusing specifically on public employee whistleblowing, Supreme Court decisions centering on issues of First Amendment rights of public employees generates a potential influence on both employee perceptions of procedural justice and whistleblowing tendencies. Roberts (2015) argues that cases such as *Lane v. Franks* (134 S. Ct. 2369), in which the Court held that sworn testimony falls outside the scope of official public duties outlined in *Garcetti v. Ceballos* (547 U.S. 410, 2006), could result in a narrow interpretation of protected speech by public employees concerning possible wrongdoing (p. 387-388).

The convergence of both the introduction of federal whistleblower legislation and judicial decisions impacting the scope of protected employee speech relating to whistleblower disclosures generates considerable interest in the theoretical implications of both legislative initiatives and judicial decisions as it relates to employee perceptions of procedural justice and whistleblowing tendencies. Due to the fluid nature of judicial decisions and enactment of legislation, examining the impact which these events have on

employee perceptions of procedural justice and whistleblowing motives may introduce future research which pinpoints changes in employee perceptions of procedural justice and the viability of whistleblowing disclosures receiving fair and equitable organizational processing of such disclosures through internal and external channels.

Contributions to the Field of Public Administration

This dissertation builds upon existing public administration literature by exploring factors relating to employee perceptions of procedural justice and whistleblowing within a single context. Additionally, this research represents the first scholarly attempt to combine federal FEV survey data, OSC whistleblower disclosure data, and the introduction of federal whistleblower legislation towards examining the potential relationship between whistleblowing and federal employee perceptions of procedural justice. Although this research does not identify an inferred relationship between federal employee perceptions of procedural justice and whistleblowing factors, it does support previously established literature recognizing organizational position and employee retention as key contributors to positive perceptions of procedural justice.

There are several benefits of examining the potential relationship between federal employee perceptions of procedural justice and whistleblowing. Recent changes to personnel systems in select states and federal agencies has renewed scholarly interest in measuring employee perceptions of procedural justice following changes to personnel protections which may impact the perceived ethical climate of organizations (Brook & King, 2008; Kellough & Nigro, 2002; Pearce & Perry, 1983; Riccucci & Thompson, 2008; Rubin & Weinberg, 2016; Thompson & Rainey, 2003). While previous research has focused on changes to public employee merit systems, this research introduces

analysis focusing on employee perceptions of organizational fairness and equity when considering whistleblowing factors aimed at increasing both organizational ethics and employee trust in disclosure processes.

Furthermore, this research presents a missing component of whistleblowing literature by examining the possible relationship between an independent federal agency tasked with reviewing whistleblower disclosures and employee perceptions of procedural justice. Previous quantitative research concerning whistleblowing in federal employment has frequently utilized Merit System Principles survey data collected by MSPB, generating research results which explore whistleblowing from a narrow personnel context. While the results of this research do not indicate a potential relationship between the proportion of OSC merited whistleblowing disclosures substantiated by origin agencies tasked with disclosure review and employee perceptions of procedural justice, it does introduce and encourage further examination of an independent federal agency which examines federal employee whistleblowing disclosures concerning both prohibited personnel practices *and* instances of suspected organizational wrongdoing.

Finally, while considerable procedural justice research has examined changes to employee perceptions of procedural justice following changes to personnel and merit systems, the current body of both procedural justice and whistleblowing literature has yet to investigate the potential impact of federal legislation aimed at encouraging whistleblowing disclosures through expanded personnel protections. Previous research concerning federal whistleblowing legislation and the impact which it has on federal employees has frequently centered on measuring the effectiveness of the legislation through legal analysis and perceptions of whistleblower retaliation (Miceli, Rehg, Near,

& Ryan, 1999; Pfeffer et al., 2015). These research findings introduce a missing component of procedural justice and whistleblowing literature by examining changes to employee perceptions of organizational procedural justice longitudinally prior to and following the enactment of federal whistleblower legislation. Although the results of this research fail to establish an inferred relationship, it provides for opportunities to explore factors which may contribute to employee perceptions of procedural justice for future federal legislation focusing on whistleblower and personnel protections.

Practical Implications of Research Findings

The practical implications of this research suggest that the relationship between employee perceptions of procedural justice and whistleblowing factors centers less on individual characteristics of employees and more on organizational position and the cultural environment of an organization. Considerable personnel protections are afforded to federal employees, and changes to protection procedures are likely to be felt by public employees and their representatives (Rubin, 2007, p. 140). Although the results of the current research do not suggest a direct relationship between employee perceptions of procedural justice prior to and following the introduction of federal whistleblower legislation, it nonetheless provides support to the role of organizational leadership and ethics as a pivotal component of both procedural justice and whistleblowing factors.

A key practical implication of the current research centers on the examination of OSC as an instrumental component of the whistleblowing process for employees of federal agencies. As one of the primary channels for federal employees disclosing suspected wrongdoing within their organization, data concerning the propensity of agencies investigating and reporting substantiated employee disclosures submitted to

OSC presents an untapped component of both whistleblowing and procedural justice research. Previous research concerning whistleblowing in the federal government has frequently utilized data collected by MSPB through their Merit System Principles (MSP) survey, allowing for examination of employee perceptions of the ethical climate of their respective organization (Caillier, 2016; Cho & Song, 2015; Miceli & Near, 1988; Miceli & Near, 2002; Miceli & Near, 2013; Near & Miceli, 2008). While MSP surveys are useful in capturing employee perceptions of the ethical climate of their organization, they are not a viable tool for exploring the resulting outcome of employee disclosures following organizational investigation of wrongdoing reported to federal whistleblowing channels. Future whistleblowing and procedural justice research can benefit considerably through the incorporation of data provided by both MSPB and OSC concerning the outcomes of employee disclosures of wrongdoing and the resulting perceptions of organizational equity, trust, and ethical climate.

From a practitioner context, the results of this research can be utilized to renew emphasis on the role of ethical management as the informational conduit of employees voicing concerns regarding suspected wrongdoing or unethical conduct within an organization. Exploring employee perceptions of organizational justice, Cho and Sai (2012) suggest that top management officials should place a premium on matters of organizational justice to uncover types of policies and activities which enhance employee perceptions of procedural justice, including initiatives towards developing fair and equitable procedures in determining outcomes, allocating rewards based on outcomes, and relaying pertinent information in an effective manner (p. 244). Examples of such initiatives may concern additional training and education of employees on formal

disclosure procedures, available channels for submitting disclosures, and the role of management in processing and reviewing disclosures of suspected wrongdoing.

Limitations and Future Research

The availability of FEVS data has fostered considerable advancements in scholarly research focusing on the attitudes and opinions of federal employees. However, the utility of FEVS data towards future research concerning both procedural justice and whistleblowing is limited by several factors.

A primary limitation of the utility of FEVS data stems from variations in the survey instrument response values for demographic questions, as well as the continuity, discontinuation, and introduction of demographic questions among different versions of the survey. Variations in survey instrument response values provides a barrier towards pooling survey responses for longitudinal analysis through recoding of response values. Examples of such variances include changes to response values for demographic variables such as tenure, age, and supervisory status. Despite these variances to response values contained within earlier iterations of the survey, survey items pertaining to demographic variables have retained uniformity in response values for all demographic variables included within this research. The continued use of FEV surveys containing consistent response values for demographic variables lends itself to future research incorporating longitudinal analysis as a key feature in examining changes in employee perceptions of procedural justice and whistleblowing factors.

Supplementing response value continuity for demographic questions contained within future versions of the FEVS, recent versions of the survey have introduced additional demographic variables concerning employee education and pay category. The

inclusion of employee education and pay grade, combined with continuity of response values for previously examined demographic variables, lends itself to future research concepts aiming to provide a more comprehensive analysis of the demographic variables which influence employee perceptions of procedural justice over time.

Despite the current limitations to the utility of FEVS data, the scope and depth of the data produced by FEV surveys permits for supplemental research which builds upon the results of this study. Additionally, annual consistency in both survey item wording and response values for both procedural justice index and demographic questions lends itself to future research examining longitudinal trends in both employee perceptions of procedural justice and whistleblowing factors.

A primary benefit of FEVS survey item and response value consistency concerns the ability to actively examine changes in employee perceptions of procedural justice and whistleblowing factors across time for governmental organizations varying in size and scope. Beginning with the Annual Report to Congress for FY 2012, OSC has detailed information concerning federal agencies submitting the highest volume of cases entailing prohibited personnel practices, Hatch Act complaints, whistleblower disclosures, and Uniformed Services Employment and Reemployment Rights Act (USERRA) matters. These casework summaries consistently identify the Department of Defense, the Department of Veterans Affairs, and the Department of Homeland Security as three federal agencies submitting the greatest number of OSC casework from 2012 through 2015. While previous procedural justice research has examined changes in employee perceptions of procedural justice within the Department of Defense during the implementation of alternative personnel systems (Rubin & Weinberg, 2016), future

research examining variations in employee perceptions of procedural justice when factoring for OSC disclosure substantiation trends provides a supplemental element to both procedural justice and whistleblowing research.

In addition to future research examining trends of large federal agencies, the availability of FEVS data for large independent federal agencies allows for generalizability of the findings of the current research. Although the current research examines variations in employee perceptions of procedural justice within two large independent regulatory agencies, replication of the current research incorporating additional large regulatory agencies based on sector of oversight aids in greater applicability of the current research findings.

REFERENCES

- Alford, C.F. (2007). Whistle-Blower Narratives: The Experience of Choiceless Choice. *Social Research*, 74(1), 223-248.
- Ashforth, M.L., & Mael, F. (1989). Social Identity Theory and the Organization. *Academy of Management Review*, 14(1), 20-39.
- Barnett, T. (1992). A Preliminary Investigation of the Relationship Between Selected Organizational Characteristics and External Whistleblowing by Employees. *Journal of Business Ethics*, 11(12), 949 – 959.
- Blau, P. (1964). *Exchange and Power in Social Life*. New York, NY: Wiley.
- Borak, S.W. (2005). The Legacy of “Deep Throat”: The Disclosure Process of the Whistleblower Protection Act Amendments of 1994 and the No FEAR Act of 2002. *University of Miami Law Review*, 59(4), 617 – 660.
- Bouville, M. (2008). Whistle-Blowing and Morality. *Journal of Business Ethics*, 81(3), 579-585. doi: 10.1007/s10551-007-9529-7.
- Brewer, G.A., & Selden, S.C. (1998). Whistle Blowers in the Federal Civil Service: New Evidence of the Public Service Ethic. *Journal of Public Administration Research & Theory*, 8(3), 413 – 439.
- Brook, D.A., and King, C.L. (2008). Federal Personnel Management Reform: From Civil Service Reform Act to National Security Reforms. *Review of Public Personnel Administration*, 28(2), 205-221.
- Bucy, P.H. (2002). Information as a Commodity in the Regulatory World. *University of Houston Law Review*, 39(4), 905 – 977.
- Caillier, J.G. (2013). Agency Retaliation Against Whistle-Blowers: Factors Affecting Employee Perceptions. *Public Integrity*, 15(1), 29-49. doi: 10.2753/PIN1099-9922150102.
- Caillier, J.G. (2015). Transformational Leadership and Whistle-Blowing Attitudes: Is This Relationship Mediated by Organizational Commitment and Public Service Motivation? *American Review of Public Administration*, 45(4), 458-475. doi: 10.1177/0275074013515299.

- Caillier, J.G. (2016). Public Service Motivation and the Decision to Report Wrongdoing in U.S. Federal Agencies. *American Review of Public Administration*, 46(1), 1-22. doi: 10.1177/0275074015626299.
- Callahan, E.S. & Morehead-Dworkin, T. (1992). Do Good and Get Rich: Financial Incentives for Whistleblowing and the False Claims Act. *Villanova Law Review*, 37(2), 273-336.
- Carson, T.L., Verdu, M.E., & Wokutch, R.E. (2008). Whistle-Blowing for Profit: An Ethical Analysis of the Federal False Claims Act. *Journal of Business Ethics*, 77(3), 361-376. doi: 10.1007/s10551-007-9355-y.
- Cho, Y.K., & Ringquist, E.J. (2011). Managerial Trustworthiness and Organizational Outcomes. *Journal of Public Administration Research and Theory*, 21(1), 53 – 86.
- Cho, Y.J., & Song, H.J. (2015). Determinants of Whistleblowing Within Government Agencies. *Public Personnel Management*, 44(4), 450-472. doi: 10.1177/0091026015603206.
- Cho, Y.K., & Sai, N. (2012). Does Organizational Justice Matter in the Federal Workplace? *Review of Public Personnel Administration*, 33(3), 227 – 251.
- Choi, S. (2013). Demographic Diversity of Managers and Employee Job Satisfaction: Empirical Analysis of the Federal Case. *Review of Public Personnel Administration*, 33(3), 275 – 298.
- Choi, S., & Rainey, H.G. (2014). Organizational Fairness and Diversity Management in Public Organizations: Does Fairness Matter in Managing Diversity? *Review of Public Personnel Administration*, 34(4), 307 – 331.
- Civil Service Reform Act, 5 U.S.C. §11 (1978).
- Colquitt, J.A. (2001). On the Dimensionality of Organizational Justice: A Construct Validation of a Measure. *Journal of Applied Psychology*, 86(3), 386 – 400. doi: 10.1037/0021-9010.86.3.386.
- Cortina, L.M., & Magley, V.J. (2003). Raising Voice, Risking Retaliation: Events Following Interpersonal Mistreatment in the Workplace. *Journal of Occupational Health Psychology*, 8(4), 247-265.
- Devine, T.M. (1999). The Whistleblower Protection Act of 1989: Foundation for the Modern Law of Employment Dissent. *Administrative Law Review*, 51(2), 531 – 579.
- Dodd-Frank Wall Street Reform and Consumer Protection Act, 124 U.S.C. §§1376 - 2223 (2010).

- Dudley, S., & Warren, M. (2015). *Regulators' Budget Increases Consistent with Growth in Fiscal Budget: An Analysis of the U.S. Budget for Fiscal Years 2015 and 2016* (Regulators' Budget Report 37). Retrieved from George Washington University, Regulatory Studies Center website:
<https://regulatorystudies.columbian.gwu.edu/books-reports>
- Duska, R.F. (1997). Whistleblowing. In *Encyclopedic Dictionary of Business Ethics* (P.H. Werhane and R.E. Freeman, Eds.), 654 – 656. New York, NY: Blackwell.
- Dworkin, T.M., & Baucus, M.S. (1998). Internal vs. External Whistleblowers: A Comparison of Whistleblowing Processes. *Journal of Business Ethics*, 17(12), 1281-1298.
- Eaton, T.V., & Akers, M.D. (2007). Whistleblowing and Good Governance: Policies for Universities, Government Entities, and Nonprofit Organizations. *The CPA Journal*, 77(6), 66-71.
- Elliston, F., Keenan, J., Lockhart, P., & van Schaick, J. (1985). *Whistleblowing Research: Methodological and Moral Issues*. New York, NY: CBS Educational and Professional Publishing.
- False Claims Act, 31 U.S.C. §§ 3729 – 3733 (1863).
- False Claims Act, Pub. L. No. 78-213, 57 Stat. 608-609 (1943).
- False Claims Amendments Act, 31 U.S.C. §§ 3729 – 3733 (1986).
- Fernandez, S. (2008). Examining the Effects of Leadership Behavior on Employee Perceptions of Performance and Job Satisfaction. *Public Performance and Management Review*, 32(2), 175 – 205.
- Fernandez, S., Cho, Y.J., & Perry, J.L. (2010). Exploring the Link between Integrated Leadership and Public Sector Performance. *Leadership Quarterly*, 21(2), 308 – 323.
- Fernandez, S., Resh, W.G., Moldogaziev, T., & Oberfield, Z.W. (2015). Assessing the Past and Promise of the Federal Employee Viewpoint Survey for Public Management Research: A Research Synthesis. *Public Administration Review*, 75(3), 382 – 394. doi: 10.1111/puar.12368.
- Garcetti v. Ceballos*, 547 U.S. 410 (2006).
- Glazer, M.P., & Glazer, P.M. (1989). *The Whistleblowers: Exposing Corruption in Government and Industry*. New York, NY: Basic Books.
- Homans, C.G. (1958). Social Behavior as Exchange. *American Journal of Sociology*, 63(6), 597 - 606.

- Johnson, R.A., & Kraft, M.E. (1990). Bureaucratic Whistleblowing and Policy Change. *The Western Political Quarterly*, 43(4), 849-874.
- Jos, P.H., Thompkins, M.E., & Hays, S.W. (1989). In Praise of Difficult People: A Portrait of the Committed. *Public Administration Review*, 49(6), 552 – 561.
- Jung, C.S., & Lee, S. (2012). The Hawthorne Studies Revisited: Evidence from the U.S. Federal Workforce. *Administration & Society*, 45(5), 507 – 531. doi: 10.1177/0095399712459731.
- Keenan, J.P. (1990). Upper-Level Managers and Whistleblowing: Determinants of Perceptions of Company Encouragement and Information About Where to Blow the Whistle. *Journal of Business and Psychology*, 5(2), 223 – 235.
- Kellis, D.S., & Ran, B. (2013). Modern Leadership Principles for Public Administration: Time to Move Forward. *Journal of Public Affairs*, 13(1), 130 – 141.
- Kellough, J.E., & Nigro, L.G. (2002). Pay for Performance in Georgia State Government: Employee Perspectives on GeorgiaGain After 5 Years. *Review of Public Personnel Administration*, 22(2), 146-166.
- Kim, C., & Schachter, H.L. (2013). Exploring Followership in a Public Setting: Is It a Missing Link between Participative Leadership and Organizational Performance? *American Review of Public Administration*, 45(4), 436 – 457. doi: 10.1177/0275074013508219.
- Kolarska, L., & Aldrich, H. (1980). Exit, Voice, and Silence: Consumers' and Managers' Responses to Organizational Decline. *Organization Studies*, 1(1), 41 – 58. doi: 10.1177/017084068000100104.
- Kovacic, W.E. (1996). Whistleblower Bounty Lawsuits as Monitoring Devices in Government Contracting. *Loyola Law Review*, 29(4), 1799 – 1858.
- Lane v. Franks*, 134 S. Ct. 2369 (2014).
- Lavena, C.F. (2016). Whistle-Blowing: Individual and Organizational Determinants of the Decision to Report Wrongdoing in the Federal Government. *American Review of Public Administration*, 46(1), 113-136. doi: 10.1177/0275074014535241.
- Lee, J.W., Cayer, J.N., & Lan, G.Z. (2006). Changing Federal Government Employee Attitudes since the Civil Service Reform Act of 1978. *Review of Public Personnel Administration*, 26(1), 21 – 51.

- Leventhal, G. (1980). What Should be Done with Equity Theory? New Approaches to the Study of Fairness in Social Relationships. In *Social Exchange: Advances in Theory and Research* (K. Gergen, M. Greenbers, and R. Willis, Eds.), pp. 27 – 55. New York, NY: Plenum Press.
- Martin, B., & Rifkin, W. (2004). The Dynamics of Employee Dissent: Whistleblowers and Organizational Jiu-Jitsu. *Public Organization Review: A Global Journal*, 4(3), 221-238.
- 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(3), 626 – 637.
- Merit Systems Protection Board (2012). *Blowing the Whistle: Barriers to Federal Employees Making Disclosures*. Washington, D.C.: Author.
- Mesmer-Magnus, J.R., & Viswesvaran, C. (2005). Whistleblowing in Organizations: An Examination of Correlates of Whistleblowing Intentions, Actions, and Retaliation. *Journal of Business Ethics*, 62(3), 277-297.
- Miceli, M.P. (2004). Whistleblowing Research and *The Insider*. *Journal of Management Inquiry*, 13(4), 364 – 366. doi: 10.1177/1056492604270801.
- Miceli, M.P., & Near, J.P. (1988). Individual and Situational Correlates of Whistle-Blowing. *Journal of Personnel Psychology*, 41(2), 267-281.
- Miceli, M.P., & Near, J.P. (2002). What Makes Whistle-Blowers Effective? Three Field Studies. *Human Relations*, 55(4), 455-479.
- Miceli, M.P., & Near, J.P. (2013). An International Comparison of the Incidence of Public Sector Whistle-Blowing and the Prediction of Retaliation: Australia, Norway, and the U.S. *Australian Journal of Public Administration*, 72(4), 433-446. doi: 10.1111/1467-8500.12040.
- Miceli, M.P., Rehg, M., Near, J.P., & Ryan, K.C. (1999). Can Laws Protect Whistle-Blowers? Results of a Naturally Occurring Field Experiment. *Work and Occupations*, 26(1), 129 – 151.
- Miethe, T. (1999). *Whistle-Blowing at Work: Tough Choices in Exposing Fraud, Waste, and Abuse on the Job*. Boulder, CO: Westview Press.
- Moberly, R. (2012). Whistleblowers and the Obama Presidency: The National Security Dilemma. *Employee Rights and Employment Policy Journal*, 16(1), 51 – 141.
- Nader, R., Petkas, P.J., & Blackwell, K. (Eds.) (1972). *Whistle Blowing: The Report of the Conference on Professional Responsibility*. New York, NY: Grossman.

- Near, J.P., & Miceli, M.P. (1985). Organizational Dissidence: The Case of Whistle-Blowing. *Journal of Business Ethics*, 4(1), 1 – 16. doi: 0167-4544/85/0041-0001.
- Near, J.P., & Miceli, M.P. (1996). Whistle-Blowing: Myth and Reality. *Journal of Management*, 22(3), 507-526.
- Near, J.P., & 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(3), 263-281. doi: 10.1177/0734371X08319153.
- Near, J.P., & Miceli, M.P. (2016). What Managers Should Know About Whistleblowing. *Business Horizons*, 59(1), 105-114. doi: 10.1016/j.bushor.2015.09.007.
- Notification and Federal Employee Anti-Discrimination and Retaliation Act, 5 U.S.C. §2301 (2002).
- Oberfield, Z. (2014). Public Management in Time: A Longitudinal Examination of the Full Range of Leadership Theory. *Journal of Public Administration Research and Theory*, 24(2), 407 – 429.
- Oh, P.S., & Lewis, D.E. (2008). Management and Leadership Performance in the Defense Department: Evidence from Surveys of Federal Employees. *Armed Forces and Society*, 34(4), 639 – 661.
- Park, S.M. (2012). Toward the Trusted Public Organization: Untangling the Leadership, Motivation, and Trust Relationship in U.S. Federal Agencies. *American Review of Public Administration*, 42(5), 562 – 590.
- Pearce, J.L., & Perry, J.L. (1983). Federal Merit Pay: A Longitudinal Analysis. *Public Administration Review*, 43(4), 315-325.
- Peffer, S.L., Bocheko, A., Del Valle, R.E., Osmani, A., Peyton, S., & Roman, E. (2015). Whistle Where You Work? The Ineffectiveness of the Federal Whistleblower Protection Act of 1989 and the Promise of the Whistleblower Protection Enhancement Act of 2012. *Review of Public Personnel Administration*, 35(1), 70 – 81. doi: 10.1177/0734371X13508414.
- Pinder, C.C., & Harlos, K.P. (2001). Employee Silence: Quiescence and Acquiescence as Responses to Perceived Injustice. *Research in Personnel and Human Resources Management*, 20(1), 331 – 369.
- Pitts, D.W. (2009). Diversity Management, Job Satisfaction, and Performance: Evidence from U.S. Federal Agencies. *Public Administration Review*, 69(2), 328 – 338.

- Pitts, D.W., Marvel, J., & Fernandez, S. (2011). So Hard to Say Goodbye? Turnover Intention among U.S. Federal Employees. *Public Administration Review*, 71(5), 751 – 760.
- Purcell, Jr., F.E. (1993). Qui Tam Suits under the False Claims Amendment Act of 1986: The Need for Clear Legislative Expression. *Catholic University Law Review*, 42(4), 935-977.
- Ramirez, M.K. (2007). Blowing the Whistle on Whistleblower Protection: A Tale of Reform Versus Power. *University of Cincinnati Law Review*, 76(1), 183 – 233.
- Raspanti, M.S., & Laigaie, D.M. (1998). Current Practice and Procedure Under the Whistleblower Provisions of the Federal False Claims Act. *Temple Law Review*, 71(1), 23-53.
- Rawls, J. (1951). Outline of a Decision Procedure for Ethics. *The Philosophical Review*, 60(2), 177-197.
- Rawls, J. (1971). *A Theory of Justice*. Boston, MA: Harvard University Press.
- Riccucci, N.M., and Thompson, F.J. (2008). New Public Management, Homeland Security, and the Politics of Civil Service Reform. *Public Administration Review*, 68(5), 877-890.
- Roberts, R. (2015). Public Service, Public Corruption and the First Amendment: The Implications of *Lane v. Franks* for Public Employee Public Corruption Watchdogs. *Review of Public Personnel Administration*, 35(4), 386-405. doi: 10.1177/0734371X14553671.
- Rubin, E.V. (2007). The Role of Procedural Justice in Public Personnel Management: Empirical Results from the Department of Defense. *Journal of Public Administration Research & Theory*, 19(1), 125 – 143. doi: 10.1093/jopart/mum035.
- Rubin, E.V. (2011). Exploring the Link Between Procedural Fairness and Union Membership in the Federal Government. *Review of Public Personnel Administration*, 31(2), 128 – 142. doi: 10.1177/0734371X11408571.
- Rubin, E., & Perez-Chiques, E. (2015). Where You Sit Is Where You Stand: Evaluating Manager and Employee Differences in Procedural Justice Perceptions in the U.S. Federal Government. *Administration & Society*, 47(5), 549 – 573. doi: 10.1177/0095399714555755.
- Rubin, E., & Weinberg, S.E. (2016). Does Changing the Rules Really Matter? Assessing Procedural Justice Perceptions under Civil Service Reform. *Journal of Public Administration Research and Theory*, 26(1), 129 – 141. doi: 10.1093/jopart/muu048.

- Sabharwal, M. (2013). From Glass Ceiling to Glass Cliff: Women in Senior Executive Service. *Journal of Public Administration Research & Theory*, 25(1), 399 – 426. doi: 10.1093/jopart/mut030.
- Sarbanes-Oxley Act, 116 U.S.C. §745 (2002).
- 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 – 67. doi: 10.1108/09534819910255315.
- Singer, M., Mitchell, S., & Turner, J. (1998). Consideration of Moral Intensity in Ethicality Judgements: Its Relationship with Whistle-blowing and Need-for-Cognition. *Journal of Business Ethics*, 17(5), 527-541.
- 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.
- S. Rep. No. 103 – 358, at 1 -2 (1994).
- Stone, D. (2002). *Policy Paradox: The Art of Political Decision Making* (2nd Ed.). New York, NY: Norton.
- Tangirala, S., & Ramanujam, R. (2008). Employee Silence on Critical Work Issues: The Cross Level Effects of Procedural Justice Climate. *Personnel Psychology*, 61(1), 37 – 68. doi: 10.1111/j.1744-6570.2008.00105.x.
- Thibaut, J., & Kelley, H.H. (1959). *The Social Psychology of Groups*. New York, NY: Wiley.
- Thibaut, J., & Walker, L. (1975). *Procedural Justice: A Psychological Analysis*. Hillsdale, NJ: Erlbaum.
- Thompson, J.R., and Rainey, H. (2003). *Modernizing Human Capital Management in the Federal Government: The IRS Model*. Washington, DC: Endowment for the Business of Government.
- Ting, M.M. (2008). Whistleblowing. *The American Political Science Review*, 102(2), 249-267.
- Trottier, T., Van Wart, M., & Wang, X. (2008). Examining the Nature and Significance of Leadership in Government Organizations. *Public Administration Review*, 68(2), 319 – 333.
- U.S. Merit Systems Protection Board (2016). *Annual Report for Fiscal Year 2015*. Washington, D.C.: Author. Retrieved from <http://www.mspb.gov/publicaffairs/annual.htm>

- U.S. Office of Personnel Management (2016). 2010 Federal Employee Viewpoint Survey. Retrieved from <https://www.fedview.opm.gov/2015/EVSDATA/>
- U.S. Office of Personnel Management (2016). 2011 Federal Employee Viewpoint Survey. Retrieved from <https://www.fedview.opm.gov/2015/EVSDATA/>
- U.S. Office of Personnel Management (2016). 2012 Federal Employee Viewpoint Survey. Retrieved from <https://www.fedview.opm.gov/2015/EVSDATA/>
- U.S. Office of Personnel Management (2016). 2013 Federal Employee Viewpoint Survey. Retrieved from <https://www.fedview.opm.gov/2015/EVSDATA/>
- U.S. Office of Personnel Management (2016). 2014 Federal Employee Viewpoint Survey. Retrieved from <https://www.fedview.opm.gov/2015/EVSDATA/>
- U.S. Office of Personnel Management (2016). 2015 Federal Employee Viewpoint Survey. Retrieved from <https://www.fedview.opm.gov/2015/EVSDATA/>
- U.S. Office of Special Counsel (2016). *Annual Report to Congress for Fiscal Year 2014*. Washington, D.C.: Author. Retrieved from <https://osc.gov/Pages/Resources-ReportsAndInfo.aspx>
- U.S. Office of Special Counsel (2016). *Annual Report to Congress for Fiscal Year 2013*. Washington, D.C.: Author. Retrieved from <https://osc.gov/Pages/Resources-ReportsAndInfo.aspx>
- U.S. Office of Special Counsel (2016). *Annual Report to Congress for Fiscal Year 2012*. Washington, D.C.: Author. Retrieved from <https://osc.gov/Pages/Resources-ReportsAndInfo.aspx>
- U.S. Office of Special Counsel (2016). *Annual Report to Congress for Fiscal Year 2011*. Washington, D.C.: Author. Retrieved from <https://osc.gov/Pages/Resources-ReportsAndInfo.aspx>
- U.S. Office of Special Counsel (2016). *Annual Report to Congress for Fiscal Year 2010*. Washington, D.C.: Author. Retrieved from <https://osc.gov/Pages/Resources-ReportsAndInfo.aspx>
- United States ex rel. Marcus v. Hess*, 317 U.S. 537 (1943).
- Vandekerckhove, W., & Commers, M.S.R. (2004). Whistle Blowing and Rational Loyalty. *Journal of Business Ethics*, 53(1-2), 225 – 233.
- Wahl-Jorgensen, K., & Hunt, J. (2012). Journalism, Accountability, and the Possibilities for Structural Critique: A Case Study of Coverage of Whistleblowing. *Journalism*, 13(4), 1 – 18. doi: 10.1177/1464884912439135.

Whistleblower Protection Act, 5 U.S.C. §§ 1201 – 1222 (1989).

Whitaker, L.P. (2007). *The Whistleblower Protection Act: An Overview* (Congressional Research Service Report to Congress RL33918). Washington, D.C.: Congressional Research Service.

Yang, K. (2011). The Sisyphean Fate of Government-Wide Performance Accountability Reforms: Federal Performance Management Efforts and Employees' Daily Work, 2002 – 2008. *Public Performance and Management Review*, 35(1), 149 – 176.

Yang, K., & Kassekert, A. (2010). Linking Management Reform with Employee Job Satisfaction: Evidence from Federal Agencies. *Journal of Public Administration Research & Theory*, 20(2), 413 – 436.

APPENDIX A

FEVS CODING VALUES: HYPOTHESES 2-5

Hypothesis 2 Coding Values – Employee Tenure

FEVS Question: How long have you been with the Federal Government (excluding military service)?

FEVS 2010

- [A] Less than 1 year (1)
- [B] 1 to 3 years (2)
- [C] 4 to 5 years (3)
- [D] 6 to 10 years (4)
- [E] 11 to 14 years (5)
- [F] 15 to 20 years (6)
- [G] More than 20 years (7)

FEVS 2011

- [B] Up to 3 years (1)
- [C] 4 to 5 years (2)
- [D] 6 to 10 years (3)
- [E] 11 to 14 years (4)
- [F] 15 to 20 years (5)
- [G] More than 20 years (6)

FEVS 2012

- [A] 10 or fewer years (1)
- [B] 11 or more years (2)

FEVS 2013-2015

- [A] 5 or fewer years (1)
- [B] 6-14 years (2)
- [C] 15 or more years (3)

Hypothesis 3 Coding Values – Employee Age

FEVS Question: What is your age group?

FEVS 2010/2011

- [B] 29 and under (1)
- [C] 30-39 (2)
- [D] 40-49 (3)
- [E] 50-59 (4)
- [F] 60 or older (5)

FEVS 2012
[A] Under 40 (1)
[B] 40 or older (2)

FEVS 2013-2015
[A] Under 40 (1)
[B] 40-49 (2)
[C] 50-59 (3)
[D] 60 or older (4)

Hypothesis 4 Coding Values – Employment Intention

FEVS Question: Are you considering leaving your organization within the next year, and if so, why?

FEVS 2010/2011
[A] No (1)
[B] Yes, to retire (2)
[C] Yes, to take another job within the Federal Government (3)
[D] Yes, to take another job outside the Federal Government (4)
[E] Yes, other (5)

FEVS 2012-2015
[A] No (1)
[B] Yes, to take another job within the Federal Government (2)
[C] Yes, to take another job outside the Federal Government (3)
[D] Yes, other (4)

Hypothesis 5 Coding Values – Supervisory Status

FEVS Question: What is your supervisory status?

FEVS 2010/2011
[A] Non-Supervisor/Team Leader (1)
[B] Supervisor (2)
[C] Manager/Executive (3)

FEVS 2012/2013
[A] Non-Supervisor/Team Leader (1)
[B] Supervisor/Manager/Executive (2)

FEVS 2014/2015
[A] Non-Supervisor/Team Leader (1)
[B] Supervisor/Manager/Senior Leader (2)

APPENDIX B

FEVS RESPONSE FREQUENCY TABLES

NRC FEVS Response Frequency Tables

2010 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|-------|---------|------------|------|------|------|------|------|-----------------------|------|--------|-------------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| N | Valid | 2471 | 2409 | 2341 | 2267 | 2408 | 2478 | 2466 | 2425 | 2424 | 2457 |
| | Missing | 32 | 94 | 162 | 236 | 95 | 25 | 37 | 78 | 79 | 46 |
| Mean | | 3.98 | 4.15 | 3.58 | 4.17 | 4.05 | 3.86 | 1.27 | 3.28 | 4.67 | 1.43 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 6 | 4 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|-----------------------|
| Valid | 1 | 113 | 4.5 | 4.6 | 4.6 |
| | 2 | 153 | 6.1 | 6.2 | 10.8 |
| | 3 | 302 | 12.1 | 12.2 | 23.0 |
| | 4 | 1007 | 40.2 | 40.8 | 63.7 |
| | 5 | 896 | 35.8 | 36.3 | 100.0 |
| | Total | | 2471 | 98.7 | 100.0 |
| Missing | System | 32 | 1.3 | | |
| Total | | 2503 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------|-------|-----------|---------|---------------|--------------------|
| Valid | 1 | 94 | 3.8 | 3.9 | 3.9 |
| | 2 | 102 | 4.1 | 4.2 | 8.1 |
| | 3 | 268 | 10.7 | 11.1 | 19.3 |
| | 4 | 829 | 33.1 | 34.4 | 53.7 |
| | 5 | 1116 | 44.6 | 46.3 | 100.0 |
| | Total | 2409 | 96.2 | 100.0 | |
| Missing System | | 94 | 3.8 | | |
| Total | | 2503 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------|-------|-----------|---------|---------------|--------------------|
| Valid | 1 | 169 | 6.8 | 7.2 | 7.2 |
| | 2 | 263 | 10.5 | 11.2 | 18.5 |
| | 3 | 529 | 21.1 | 22.6 | 41.1 |
| | 4 | 797 | 31.8 | 34.0 | 75.1 |
| | 5 | 583 | 23.3 | 24.9 | 100.0 |
| | Total | 2341 | 93.5 | 100.0 | |
| Missing System | | 162 | 6.5 | | |
| Total | | 2503 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 41 | 1.6 | 1.8 | 1.8 |
| | 2 | 47 | 1.9 | 2.1 | 3.9 |
| | 3 | 379 | 15.1 | 16.7 | 20.6 |
| | 4 | 822 | 32.8 | 36.3 | 56.9 |
| | 5 | 978 | 39.1 | 43.1 | 100.0 |
| | Total | 2267 | 90.6 | 100.0 | |
| Missing | System | 236 | 9.4 | | |
| Total | | 2503 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 102 | 4.1 | 4.2 | 4.2 |
| | 2 | 107 | 4.3 | 4.4 | 8.7 |
| | 3 | 306 | 12.2 | 12.7 | 21.4 |
| | 4 | 940 | 37.6 | 39.0 | 60.4 |
| | 5 | 953 | 38.1 | 39.6 | 100.0 |
| | Total | 2408 | 96.2 | 100.0 | |
| Missing | System | 95 | 3.8 | | |
| Total | | 2503 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 65 | 2.6 | 2.6 | 2.6 |
| | 2 | 247 | 9.9 | 10.0 | 12.6 |
| | 3 | 379 | 15.1 | 15.3 | 27.9 |
| | 4 | 1065 | 42.5 | 43.0 | 70.9 |
| | 5 | 722 | 28.8 | 29.1 | 100.0 |
| | Total | 2478 | 99.0 | 100.0 | |
| Missing | System | 25 | 1.0 | | |
| Total | | 2503 | 100.0 | | |

2010 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2002 | 80.0 | 81.2 | 81.2 |
| | 2 | 272 | 10.9 | 11.0 | 92.2 |
| | 3 | 192 | 7.7 | 7.8 | 100.0 |
| | Total | 2466 | 98.5 | 100.0 | |
| Missing | System | 37 | 1.5 | | |
| Total | | 2503 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 233 | 9.3 | 9.6 | 9.6 |
| | 2 | 369 | 14.7 | 15.2 | 24.8 |
| | 3 | 637 | 25.4 | 26.3 | 51.1 |
| | 4 | 850 | 34.0 | 35.1 | 86.1 |
| | 5 | 336 | 13.4 | 13.9 | 100.0 |
| | Total | | 2425 | 96.9 | 100.0 |
| Missing | System | 78 | 3.1 | | |
| Total | | 2503 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 15 | .6 | .6 | .6 |
| | 2 | 517 | 20.7 | 21.3 | 21.9 |
| | 3 | 274 | 10.9 | 11.3 | 33.3 |
| | 4 | 423 | 16.9 | 17.5 | 50.7 |
| | 5 | 177 | 7.1 | 7.3 | 58.0 |
| | 6 | 256 | 10.2 | 10.6 | 68.6 |
| | 7 | 762 | 30.4 | 31.4 | 100.0 |
| | Total | | 2424 | 96.8 | 100.0 |
| Missing | System | 79 | 3.2 | | |
| Total | | 2503 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1965 | 78.5 | 80.0 | 80.0 |
| | 2 | 130 | 5.2 | 5.3 | 85.3 |
| | 3 | 225 | 9.0 | 9.2 | 94.4 |
| | 4 | 60 | 2.4 | 2.4 | 96.9 |
| | 5 | 77 | 3.1 | 3.1 | 100.0 |
| | Total | 2457 | 98.2 | 100.0 | |
| Missing | System | 46 | 1.8 | | |
| | Total | 2503 | 100.0 | | |

2011 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|--|------------|------|------|------|------|------|--------------------|------|--------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| Valid | | 2580 | 2529 | 2433 | 2345 | 2489 | 2548 | 2541 | 2500 | 2515 | 2529 |
| Missing | | 32 | 83 | 179 | 267 | 123 | 64 | 71 | 112 | 97 | 83 |
| N | | | | | | | | | | | |
| Mean | | 3.93 | 4.10 | 3.54 | 4.14 | 4.00 | 3.83 | 1.26 | 3.29 | 3.67 | 1.46 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 5 | 4 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 118 | 4.5 | 4.6 | 4.6 |
| | 2 | 195 | 7.5 | 7.6 | 12.1 |
| | 3 | 301 | 11.5 | 11.7 | 23.8 |
| | 4 | 1092 | 41.8 | 42.3 | 66.1 |
| | 5 | 874 | 33.5 | 33.9 | 100.0 |
| Total | | 2580 | 98.8 | 100.0 | |
| Missing | System | 32 | 1.2 | | |
| Total | | 2612 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 91 | 3.5 | 3.6 | 3.6 |
| | 2 | 128 | 4.9 | 5.1 | 8.7 |
| | 3 | 314 | 12.0 | 12.4 | 21.1 |
| | 4 | 905 | 34.6 | 35.8 | 56.9 |
| | 5 | 1091 | 41.8 | 43.1 | 100.0 |
| Total | | 2529 | 96.8 | 100.0 | |
| Missing | System | 83 | 3.2 | | |
| Total | | 2612 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 180 | 6.9 | 7.4 | 7.4 |
| | 2 | 259 | 9.9 | 10.6 | 18.0 |
| | 3 | 573 | 21.9 | 23.6 | 41.6 |
| | 4 | 918 | 35.1 | 37.7 | 79.3 |
| | 5 | 503 | 19.3 | 20.7 | 100.0 |
| | Total | | 2433 | 93.1 | 100.0 |
| Missing | System | 179 | 6.9 | | |
| Total | | 2612 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 45 | 1.7 | 1.9 | 1.9 |
| | 2 | 67 | 2.6 | 2.9 | 4.8 |
| | 3 | 391 | 15.0 | 16.7 | 21.4 |
| | 4 | 852 | 32.6 | 36.3 | 57.8 |
| | 5 | 990 | 37.9 | 42.2 | 100.0 |
| | Total | | 2345 | 89.8 | 100.0 |
| Missing | System | 267 | 10.2 | | |
| Total | | 2612 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 106 | 4.1 | 4.3 | 4.3 |
| | 2 | 137 | 5.2 | 5.5 | 9.8 |
| | 3 | 314 | 12.0 | 12.6 | 22.4 |
| | 4 | 1016 | 38.9 | 40.8 | 63.2 |
| | 5 | 916 | 35.1 | 36.8 | 100.0 |
| Total | | 2489 | 95.3 | 100.0 | |
| Missing | System | 123 | 4.7 | | |
| Total | | 2612 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 69 | 2.6 | 2.7 | 2.7 |
| | 2 | 255 | 9.8 | 10.0 | 12.7 |
| | 3 | 402 | 15.4 | 15.8 | 28.5 |
| | 4 | 1142 | 43.7 | 44.8 | 73.3 |
| | 5 | 680 | 26.0 | 26.7 | 100.0 |
| Total | | 2548 | 97.5 | 100.0 | |
| Missing | System | 64 | 2.5 | | |
| Total | | 2612 | 100.0 | | |

2011 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2078 | 79.6 | 81.8 | 81.8 |
| | 2 | 272 | 10.4 | 10.7 | 92.5 |
| | 3 | 191 | 7.3 | 7.5 | 100.0 |
| | Total | 2541 | 97.3 | 100.0 | |
| Missing | System | 71 | 2.7 | | |
| Total | | 2612 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 220 | 8.4 | 8.8 | 8.8 |
| | 2 | 440 | 16.8 | 17.6 | 26.4 |
| | 3 | 599 | 22.9 | 24.0 | 50.4 |
| | 4 | 877 | 33.6 | 35.1 | 85.4 |
| | 5 | 364 | 13.9 | 14.6 | 100.0 |
| | Total | 2500 | 95.7 | 100.0 | |
| Missing | System | 112 | 4.3 | | |
| Total | | 2612 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 437 | 16.7 | 17.4 | 17.4 |
| | 2 | 359 | 13.7 | 14.3 | 31.7 |
| | 3 | 534 | 20.4 | 21.2 | 52.9 |
| | 4 | 204 | 7.8 | 8.1 | 61.0 |
| | 5 | 226 | 8.7 | 9.0 | 70.0 |
| | 6 | 755 | 28.9 | 30.0 | 100.0 |
| | Total | 2515 | 96.3 | 100.0 | |
| Missing | System | 97 | 3.7 | | |
| Total | | 2612 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2023 | 77.5 | 80.0 | 80.0 |
| | 2 | 120 | 4.6 | 4.7 | 84.7 |
| | 3 | 206 | 7.9 | 8.1 | 92.9 |
| | 4 | 87 | 3.3 | 3.4 | 96.3 |
| | 5 | 93 | 3.6 | 3.7 | 100.0 |
| | Total | 2529 | 96.8 | 100.0 | |
| Missing | System | 83 | 3.2 | | |
| Total | | 2612 | 100.0 | | |

2012 Procedural Justice Index Item Responses

Statistics

| | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
|---------|------|------|------|------|------|------|--------------------|------|--------|----------------------|
| Valid | 2675 | 2624 | 2499 | 2419 | 2592 | 2649 | 2626 | 2564 | 2607 | 2613 |
| Missing | 34 | 85 | 210 | 290 | 117 | 60 | 83 | 145 | 102 | 96 |
| N | | | | | | | | | | |
| Mean | 3.83 | 4.02 | 3.36 | 4.08 | 3.83 | 3.72 | 1.18 | 1.74 | 1.48 | 1.47 |
| Range | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 166 | 6.1 | 6.2 | 6.2 |
| | 2 | 231 | 8.5 | 8.6 | 14.8 |
| | 3 | 331 | 12.2 | 12.4 | 27.2 |
| | 4 | 1124 | 41.5 | 42.0 | 69.2 |
| | 5 | 823 | 30.4 | 30.8 | 100.0 |
| | Total | 2675 | 98.7 | 100.0 | |
| Missing | System | 34 | 1.3 | | |
| Total | | 2709 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 143 | 5.3 | 5.4 | 5.4 |
| | 2 | 139 | 5.1 | 5.3 | 10.7 |
| | 3 | 335 | 12.4 | 12.8 | 23.5 |
| | 4 | 919 | 33.9 | 35.0 | 58.5 |
| | 5 | 1088 | 40.2 | 41.5 | 100.0 |
| | Total | 2624 | 96.9 | 100.0 | |
| Missing | System | 85 | 3.1 | | |
| Total | | 2709 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 262 | 9.7 | 10.5 | 10.5 |
| | 2 | 323 | 11.9 | 12.9 | 23.4 |
| | 3 | 611 | 22.6 | 24.4 | 47.9 |
| | 4 | 857 | 31.6 | 34.3 | 82.2 |
| | 5 | 446 | 16.5 | 17.8 | 100.0 |
| | Total | 2499 | 92.2 | 100.0 | |
| Missing | System | 210 | 7.8 | | |
| Total | | 2709 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 62 | 2.3 | 2.6 | 2.6 |
| | 2 | 83 | 3.1 | 3.4 | 6.0 |
| | 3 | 430 | 15.9 | 17.8 | 23.8 |
| | 4 | 875 | 32.3 | 36.2 | 59.9 |
| | 5 | 969 | 35.8 | 40.1 | 100.0 |
| | Total | 2419 | 89.3 | 100.0 | |
| Missing | System | 290 | 10.7 | | |
| Total | | 2709 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 172 | 6.3 | 6.6 | 6.6 |
| | 2 | 189 | 7.0 | 7.3 | 13.9 |
| | 3 | 398 | 14.7 | 15.4 | 29.3 |
| | 4 | 991 | 36.6 | 38.2 | 67.5 |
| | 5 | 842 | 31.1 | 32.5 | 100.0 |
| | Total | 2592 | 95.7 | 100.0 | |
| Missing | System | 117 | 4.3 | | |
| Total | | 2709 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 117 | 4.3 | 4.4 | 4.4 |
| | 2 | 320 | 11.8 | 12.1 | 16.5 |
| | 3 | 448 | 16.5 | 16.9 | 33.4 |
| | 4 | 1075 | 39.7 | 40.6 | 74.0 |
| | 5 | 689 | 25.4 | 26.0 | 100.0 |
| | Total | 2649 | 97.8 | 100.0 | |
| Missing | System | 60 | 2.2 | | |
| Total | | 2709 | 100.0 | | |

2012 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2155 | 79.5 | 82.1 | 82.1 |
| | 2 | 471 | 17.4 | 17.9 | 100.0 |
| | Total | 2626 | 96.9 | 100.0 | |
| Missing | System | 83 | 3.1 | | |
| Total | | 2709 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 675 | 24.9 | 26.3 | 26.3 |
| | 2 | 1889 | 69.7 | 73.7 | 100.0 |
| | Total | 2564 | 94.6 | 100.0 | |
| Missing | System | 145 | 5.4 | | |
| Total | | 2709 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1343 | 49.6 | 51.5 | 51.5 |
| | 2 | 1264 | 46.7 | 48.5 | 100.0 |
| | Total | 2607 | 96.2 | 100.0 | |
| Missing | System | 102 | 3.8 | | |
| Total | | 2709 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2001 | 73.9 | 76.6 | 76.6 |
| | 2 | 251 | 9.3 | 9.6 | 86.2 |
| | 3 | 111 | 4.1 | 4.2 | 90.4 |
| | 4 | 250 | 9.2 | 9.6 | 100.0 |
| | Total | 2613 | 96.5 | 100.0 | |
| Missing | System | 96 | 3.5 | | |
| Total | | 2709 | 100.0 | | |

2013 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|---|------------|------|------|------|------|------|--------------------|------|--------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| Valid | N | 2481 | 2427 | 2310 | 2219 | 2407 | 2452 | 2428 | 2347 | 2400 | 2410 |
| Missing | N | 28 | 82 | 199 | 290 | 102 | 57 | 81 | 162 | 109 | 99 |
| Mean | | 3.81 | 3.97 | 3.29 | 4.06 | 3.83 | 3.68 | 1.17 | 2.45 | 2.19 | 1.43 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 3 | 2 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 154 | 6.1 | 6.2 | 6.2 |
| | Disagree | 199 | 7.9 | 8.0 | 14.2 |
| | Neither Agree nor Disagree | 323 | 12.9 | 13.0 | 27.2 |
| | Agree | 1098 | 43.8 | 44.3 | 71.5 |
| | Strongly Agree | 707 | 28.2 | 28.5 | 100.0 |
| | Total | 2481 | 98.9 | 100.0 | |
| Missing | System | 28 | 1.1 | | |
| Total | | 2509 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 120 | 4.8 | 4.9 | 4.9 |
| | Disagree | 156 | 6.2 | 6.4 | 11.4 |
| | Neither Agree nor Disagree | 319 | 12.7 | 13.1 | 24.5 |
| | Agree | 910 | 36.3 | 37.5 | 62.0 |
| | Strongly Agree | 922 | 36.7 | 38.0 | 100.0 |
| | Total | 2427 | 96.7 | 100.0 | |
| Missing | System | 82 | 3.3 | | |
| Total | | 2509 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 251 | 10.0 | 10.9 | 10.9 |
| | Disagree | 324 | 12.9 | 14.0 | 24.9 |
| | Neither Agree nor Disagree | 593 | 23.6 | 25.7 | 50.6 |
| | Agree | 783 | 31.2 | 33.9 | 84.5 |
| | Strongly Agree | 359 | 14.3 | 15.5 | 100.0 |
| | Total | 2310 | 92.1 | 100.0 | |
| Missing | System | 199 | 7.9 | | |
| | Total | 2509 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 60 | 2.4 | 2.7 | 2.7 |
| | Disagree | 68 | 2.7 | 3.1 | 5.8 |
| | Neither Agree nor Disagree | 399 | 15.9 | 18.0 | 23.7 |
| | Agree | 840 | 33.5 | 37.9 | 61.6 |
| | Strongly Agree | 852 | 34.0 | 38.4 | 100.0 |
| | Total | 2219 | 88.4 | 100.0 | |
| Missing | System | 290 | 11.6 | | |
| | Total | 2509 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 126 | 5.0 | 5.2 | 5.2 |
| | Disagree | 163 | 6.5 | 6.8 | 12.0 |
| | Neither Agree nor Disagree | 419 | 16.7 | 17.4 | 29.4 |
| | Agree | 991 | 39.5 | 41.2 | 70.6 |
| | Strongly Agree | 708 | 28.2 | 29.4 | 100.0 |
| | Total | 2407 | 95.9 | 100.0 | |
| Missing | System | 102 | 4.1 | | |
| Total | | 2509 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Dissatisfied | 87 | 3.5 | 3.5 | 3.5 |
| | Dissatisfied | 320 | 12.8 | 13.1 | 16.6 |
| | Neither Satisfied nor Dissatisfied | 447 | 17.8 | 18.2 | 34.8 |
| | Satisfied | 1034 | 41.2 | 42.2 | 77.0 |
| | Very Satisfied | 564 | 22.5 | 23.0 | 100.0 |
| | Total | 2452 | 97.7 | 100.0 | |
| Missing | System | 57 | 2.3 | | |
| Total | | 2509 | 100.0 | | |

2013 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2017 | 80.4 | 83.1 | 83.1 |
| | 2 | 411 | 16.4 | 16.9 | 100.0 |
| | Total | 2428 | 96.8 | 100.0 | |
| Missing | System | 81 | 3.2 | | |
| Total | | 2509 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 595 | 23.7 | 25.4 | 25.4 |
| | 2 | 495 | 19.7 | 21.1 | 46.4 |
| | 3 | 862 | 34.4 | 36.7 | 83.2 |
| | 4 | 395 | 15.7 | 16.8 | 100.0 |
| | Total | 2347 | 93.5 | 100.0 | |
| Missing | System | 162 | 6.5 | | |
| Total | | 2509 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 488 | 19.4 | 20.3 | 20.3 |
| | 2 | 973 | 38.8 | 40.5 | 60.9 |
| | 3 | 939 | 37.4 | 39.1 | 100.0 |
| | Total | 2400 | 95.7 | 100.0 | |
| Missing | System | 109 | 4.3 | | |
| Total | | 2509 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1884 | 75.1 | 78.2 | 78.2 |
| | 2 | 207 | 8.3 | 8.6 | 86.8 |
| | 3 | 119 | 4.7 | 4.9 | 91.7 |
| | 4 | 200 | 8.0 | 8.3 | 100.0 |
| | Total | 2410 | 96.1 | 100.0 | |
| Missing | System | 99 | 3.9 | | |
| Total | | 2509 | 100.0 | | |

2014 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|---|------------|------|------|------|------|------|--------------------|--------|------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Tenure | Age | Employment Intention |
| Valid | N | 2429 | 2383 | 2252 | 2215 | 2323 | 2416 | 2396 | 2390 | 2467 | 2387 |
| Missing | N | 38 | 84 | 215 | 252 | 144 | 51 | 71 | 77 | 0 | 80 |
| Mean | | 3.83 | 3.97 | 3.32 | 4.14 | 3.76 | 3.66 | 1.18 | 2.25 | 2.47 | 1.51 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 2 | 3 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 143 | 5.8 | 5.9 | 5.9 |
| | Disagree | 206 | 8.4 | 8.5 | 14.4 |
| | Neither Agree nor Disagree | 294 | 11.9 | 12.1 | 26.5 |
| | Agree | 1062 | 43.0 | 43.7 | 70.2 |
| | Strongly Agree | 724 | 29.3 | 29.8 | 100.0 |
| | Total | 2429 | 98.5 | 100.0 | |
| Missing | System | 38 | 1.5 | | |
| | Total | 2467 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 144 | 5.8 | 6.0 | 6.0 |
| | Disagree | 129 | 5.2 | 5.4 | 11.5 |
| | Neither Agree nor Disagree | 308 | 12.5 | 12.9 | 24.4 |
| | Agree | 886 | 35.9 | 37.2 | 61.6 |
| | Strongly Agree | 916 | 37.1 | 38.4 | 100.0 |
| | Total | 2383 | 96.6 | 100.0 | |
| Missing | System | 84 | 3.4 | | |
| | Total | 2467 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 253 | 10.3 | 11.2 | 11.2 |
| | Disagree | 287 | 11.6 | 12.7 | 24.0 |
| | Neither Agree nor Disagree | 583 | 23.6 | 25.9 | 49.9 |
| | Agree | 740 | 30.0 | 32.9 | 82.7 |
| | Strongly Agree | 389 | 15.8 | 17.3 | 100.0 |
| | Total | 2252 | 91.3 | 100.0 | |
| Missing | System | 215 | 8.7 | | |
| | Total | 2467 | 100.0 | | |

Q45) My supervisor is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 57 | 2.3 | 2.6 | 2.6 |
| | Disagree | 60 | 2.4 | 2.7 | 5.3 |
| | Neither Agree nor Disagree | 330 | 13.4 | 14.9 | 20.2 |
| | Agree | 847 | 34.3 | 38.2 | 58.4 |
| | Strongly Agree | 921 | 37.3 | 41.6 | 100.0 |
| | Total | 2215 | 89.8 | 100.0 | |
| Missing | System | 252 | 10.2 | | |
| | Total | 2467 | 100.0 | | |

Q54) My organization's senior leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 149 | 6.0 | 6.4 | 6.4 |
| | Disagree | 187 | 7.6 | 8.0 | 14.5 |
| | Neither Agree nor Disagree | 396 | 16.1 | 17.0 | 31.5 |
| | Agree | 943 | 38.2 | 40.6 | 72.1 |
| | Strongly Agree | 648 | 26.3 | 27.9 | 100.0 |
| | Total | 2323 | 94.2 | 100.0 | |
| Missing | System | 144 | 5.8 | | |
| | Total | 2467 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Dissatisfied | 111 | 4.5 | 4.6 | 4.6 |
| | Dissatisfied | 310 | 12.6 | 12.8 | 17.4 |
| | Neither Satisfied nor Dissatisfied | 402 | 16.3 | 16.6 | 34.1 |
| | Satisfied | 1050 | 42.6 | 43.5 | 77.5 |
| | Very Satisfied | 543 | 22.0 | 22.5 | 100.0 |
| | Total | 2416 | 97.9 | 100.0 | |
| Missing | System | 51 | 2.1 | | |
| | Total | 2467 | 100.0 | | |

2014 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1963 | 79.6 | 81.9 | 81.9 |
| | 2 | 433 | 17.6 | 18.1 | 100.0 |
| | Total | 2396 | 97.1 | 100.0 | |
| Missing | System | 71 | 2.9 | | |
| | Total | 2467 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 360 | 14.6 | 15.1 | 15.1 |
| | 2 | 1076 | 43.6 | 45.0 | 60.1 |
| | 3 | 954 | 38.7 | 39.9 | 100.0 |
| | Total | 2390 | 96.9 | 100.0 | |
| Missing | System | 77 | 3.1 | | |
| | Total | 2467 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1 | 616 | 25.0 | 25.0 | 25.0 |
| | 2 | 532 | 21.6 | 21.6 | 46.5 |
| | 3 | 855 | 34.7 | 34.7 | 81.2 |
| | 4 | 464 | 18.8 | 18.8 | 100.0 |
| | Total | 2467 | 100.0 | 100.0 | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1770 | 71.7 | 74.2 | 74.2 |
| | 2 | 264 | 10.7 | 11.1 | 85.2 |
| | 3 | 109 | 4.4 | 4.6 | 89.8 |
| | 4 | 244 | 9.9 | 10.2 | 100.0 |
| | Total | 2387 | 96.8 | 100.0 | |
| Missing | System | 80 | 3.2 | | |
| Total | | 2467 | 100.0 | | |

2015 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|---|------------|------|------|------|------|------|--------------------|--------|------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Tenure | Age | Employment Intention |
| Valid | N | 2635 | 2557 | 2437 | 2387 | 2531 | 2623 | 2597 | 2574 | 2675 | 2572 |
| Missing | N | 40 | 118 | 238 | 288 | 144 | 52 | 78 | 101 | 0 | 103 |
| Mean | | 3.86 | 3.96 | 3.28 | 4.15 | 3.72 | 3.68 | 1.17 | 2.26 | 2.47 | 1.51 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 2 | 3 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 161 | 6.0 | 6.1 | 6.1 |
| | Disagree | 215 | 8.0 | 8.2 | 14.3 |
| | Neither Agree nor Disagree | 267 | 10.0 | 10.1 | 24.4 |
| | Agree | 1179 | 44.1 | 44.7 | 69.1 |
| | Strongly Agree | 813 | 30.4 | 30.9 | 100.0 |
| | Total | 2635 | 98.5 | 100.0 | |
| Missing | System | 40 | 1.5 | | |
| Total | | 2675 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 158 | 5.9 | 6.2 | 6.2 |
| | Disagree | 163 | 6.1 | 6.4 | 12.6 |
| | Neither Agree nor Disagree | 310 | 11.6 | 12.1 | 24.7 |
| | Agree | 918 | 34.3 | 35.9 | 60.6 |
| | Strongly Agree | 1008 | 37.7 | 39.4 | 100.0 |
| | Total | 2557 | 95.6 | 100.0 | |
| Missing | System | 118 | 4.4 | | |
| Total | | 2675 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 292 | 10.9 | 12.0 | 12.0 |
| | Disagree | 346 | 12.9 | 14.2 | 26.2 |
| | Neither Agree nor Disagree | 611 | 22.8 | 25.1 | 51.3 |
| | Agree | 753 | 28.1 | 30.9 | 82.2 |
| | Strongly Agree | 435 | 16.3 | 17.8 | 100.0 |
| | Total | 2437 | 91.1 | 100.0 | |
| Missing | System | 238 | 8.9 | | |
| | Total | 2675 | 100.0 | | |

Q45) My supervisor is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 62 | 2.3 | 2.6 | 2.6 |
| | Disagree | 65 | 2.4 | 2.7 | 5.3 |
| | Neither Agree nor Disagree | 374 | 14.0 | 15.7 | 21.0 |
| | Agree | 844 | 31.6 | 35.4 | 56.3 |
| | Strongly Agree | 1042 | 39.0 | 43.7 | 100.0 |
| | Total | 2387 | 89.2 | 100.0 | |
| Missing | System | 288 | 10.8 | | |
| | Total | 2675 | 100.0 | | |

Q54) My organization's senior leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 188 | 7.0 | 7.4 | 7.4 |
| | Disagree | 214 | 8.0 | 8.5 | 15.9 |
| | Neither Agree nor Disagree | 431 | 16.1 | 17.0 | 32.9 |
| | Agree | 974 | 36.4 | 38.5 | 71.4 |
| | Strongly Agree | 724 | 27.1 | 28.6 | 100.0 |
| | Total | 2531 | 94.6 | 100.0 | |
| Missing | System | 144 | 5.4 | | |
| | Total | 2675 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Dissatisfied | 110 | 4.1 | 4.2 | 4.2 |
| | Dissatisfied | 346 | 12.9 | 13.2 | 17.4 |
| | Neither Satisfied nor Dissatisfied | 435 | 16.3 | 16.6 | 34.0 |
| | Satisfied | 1114 | 41.6 | 42.5 | 76.4 |
| | Very Satisfied | 618 | 23.1 | 23.6 | 100.0 |
| | Total | 2623 | 98.1 | 100.0 | |
| Missing | System | 52 | 1.9 | | |
| | Total | 2675 | 100.0 | | |

2015 Demographics Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 2153 | 80.5 | 82.9 | 82.9 |
| | 2 | 444 | 16.6 | 17.1 | 100.0 |
| | Total | 2597 | 97.1 | 100.0 | |
| Missing | System | 78 | 2.9 | | |
| Total | | 2675 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 360 | 13.5 | 14.0 | 14.0 |
| | 2 | 1196 | 44.7 | 46.5 | 60.5 |
| | 3 | 1018 | 38.1 | 39.5 | 100.0 |
| | Total | 2574 | 96.2 | 100.0 | |
| Missing | System | 101 | 3.8 | | |
| Total | | 2675 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1 | 685 | 25.6 | 25.6 | 25.6 |
| | 2 | 551 | 20.6 | 20.6 | 46.2 |
| | 3 | 926 | 34.6 | 34.6 | 80.8 |
| | 4 | 513 | 19.2 | 19.2 | 100.0 |
| | Total | 2675 | 100.0 | 100.0 | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1919 | 71.7 | 74.6 | 74.6 |
| | 2 | 267 | 10.0 | 10.4 | 85.0 |
| | 3 | 120 | 4.5 | 4.7 | 89.7 |
| | 4 | 266 | 9.9 | 10.3 | 100.0 |
| | Total | 2572 | 96.1 | 100.0 | |
| Missing | System | 103 | 3.9 | | |
| Total | | 2675 | 100.0 | | |

SEC FEVS Response Frequency Tables

2010 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|--|------------|------|------|------|------|------|--------------------|------|--------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| Valid | | 2102 | 1996 | 1990 | 1812 | 1985 | 2094 | 2086 | 2048 | 2053 | 2066 |
| Missing | | 49 | 155 | 161 | 339 | 166 | 57 | 65 | 103 | 98 | 85 |
| N | | | | | | | | | | | |
| Mean | | 3.58 | 3.65 | 2.82 | 3.76 | 3.50 | 3.18 | 1.29 | 3.06 | 4.75 | 1.58 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 6 | 4 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 155 | 7.2 | 7.4 | 7.4 |
| | 2 | 228 | 10.6 | 10.8 | 18.2 |
| | 3 | 435 | 20.2 | 20.7 | 38.9 |
| | 4 | 816 | 37.9 | 38.8 | 77.7 |
| | 5 | 468 | 21.8 | 22.3 | 100.0 |
| Total | | 2102 | 97.7 | 100.0 | |
| Missing | System | 49 | 2.3 | | |
| Total | | 2151 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 158 | 7.3 | 7.9 | 7.9 |
| | 2 | 172 | 8.0 | 8.6 | 16.5 |
| | 3 | 413 | 19.2 | 20.7 | 37.2 |
| | 4 | 720 | 33.5 | 36.1 | 73.3 |
| | 5 | 533 | 24.8 | 26.7 | 100.0 |
| Total | | 1996 | 92.8 | 100.0 | |
| Missing | System | 155 | 7.2 | | |
| Total | | 2151 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 431 | 20.0 | 21.7 | 21.7 |
| | 2 | 387 | 18.0 | 19.4 | 41.1 |
| | 3 | 500 | 23.2 | 25.1 | 66.2 |
| | 4 | 460 | 21.4 | 23.1 | 89.3 |
| | 5 | 212 | 9.9 | 10.7 | 100.0 |
| Total | | 1990 | 92.5 | 100.0 | |
| Missing | System | 161 | 7.5 | | |
| Total | | 2151 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 106 | 4.9 | 5.8 | 5.8 |
| | 2 | 90 | 4.2 | 5.0 | 10.8 |
| | 3 | 456 | 21.2 | 25.2 | 36.0 |
| | 4 | 641 | 29.8 | 35.4 | 71.4 |
| | 5 | 519 | 24.1 | 28.6 | 100.0 |
| Total | | 1812 | 84.2 | 100.0 | |
| Missing | System | 339 | 15.8 | | |
| Total | | 2151 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 204 | 9.5 | 10.3 | 10.3 |
| | 2 | 188 | 8.7 | 9.5 | 19.7 |
| | 3 | 420 | 19.5 | 21.2 | 40.9 |
| | 4 | 761 | 35.4 | 38.3 | 79.2 |
| | 5 | 412 | 19.2 | 20.8 | 100.0 |
| Total | | 1985 | 92.3 | 100.0 | |
| Missing | System | 166 | 7.7 | | |
| Total | | 2151 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 204 | 9.5 | 9.7 | 9.7 |
| | 2 | 444 | 20.6 | 21.2 | 30.9 |
| | 3 | 481 | 22.4 | 23.0 | 53.9 |
| | 4 | 699 | 32.5 | 33.4 | 87.3 |
| | 5 | 266 | 12.4 | 12.7 | 100.0 |
| Total | | 2094 | 97.4 | 100.0 | |
| Missing | System | 57 | 2.6 | | |
| Total | | 2151 | 100.0 | | |

2010 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1641 | 76.3 | 78.7 | 78.7 |
| | 2 | 288 | 13.4 | 13.8 | 92.5 |
| | 3 | 157 | 7.3 | 7.5 | 100.0 |
| | Total | 2086 | 97.0 | 100.0 | |
| Missing | System | 65 | 3.0 | | |
| Total | | 2151 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 73 | 3.4 | 3.6 | 3.6 |
| | 2 | 589 | 27.4 | 28.8 | 32.3 |
| | 3 | 687 | 31.9 | 33.5 | 65.9 |
| | 4 | 539 | 25.1 | 26.3 | 92.2 |
| | 5 | 160 | 7.4 | 7.8 | 100.0 |
| | Total | 2048 | 95.2 | 100.0 | |
| Missing | System | 103 | 4.8 | | |
| Total | | 2151 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 21 | 1.0 | 1.0 | 1.0 |
| | 2 | 252 | 11.7 | 12.3 | 13.3 |
| | 3 | 196 | 9.1 | 9.5 | 22.8 |
| | 4 | 525 | 24.4 | 25.6 | 48.4 |
| | 5 | 290 | 13.5 | 14.1 | 62.5 |
| | 6 | 301 | 14.0 | 14.7 | 77.2 |
| | 7 | 468 | 21.8 | 22.8 | 100.0 |
| | Total | 2053 | 95.4 | 100.0 | |
| Missing | System | 98 | 4.6 | | |
| | Total | 2151 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1597 | 74.2 | 77.3 | 77.3 |
| | 2 | 55 | 2.6 | 2.7 | 80.0 |
| | 3 | 191 | 8.9 | 9.2 | 89.2 |
| | 4 | 135 | 6.3 | 6.5 | 95.7 |
| | 5 | 88 | 4.1 | 4.3 | 100.0 |
| | Total | 2066 | 96.0 | 100.0 | |
| Missing | System | 85 | 4.0 | | |
| | Total | 2151 | 100.0 | | |

2011 Procedural Justice Index Item Responses

Statistics

| | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
|---------|------|------|------|------|------|------|--------------------|------|--------|----------------------|
| Valid | 775 | 774 | 758 | 703 | 749 | 778 | 772 | 761 | 753 | 766 |
| Missing | 34 | 35 | 51 | 106 | 60 | 31 | 37 | 48 | 56 | 43 |
| N | | | | | | | | | | |
| Mean | 3.39 | 3.74 | 2.95 | 3.83 | 3.56 | 3.27 | 1.55 | 3.12 | 3.84 | 1.75 |
| Range | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 5 | 4 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 79 | 9.8 | 10.2 | 10.2 |
| | 2 | 93 | 11.5 | 12.0 | 22.2 |
| | 3 | 173 | 21.4 | 22.3 | 44.5 |
| | 4 | 310 | 38.3 | 40.0 | 84.5 |
| | 5 | 120 | 14.8 | 15.5 | 100.0 |
| | Total | 775 | 95.8 | 100.0 | |
| Missing | System | 34 | 4.2 | | |
| Total | | 809 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 52 | 6.4 | 6.7 | 6.7 |
| | 2 | 59 | 7.3 | 7.6 | 14.3 |
| | 3 | 150 | 18.5 | 19.4 | 33.7 |
| | 4 | 287 | 35.5 | 37.1 | 70.8 |
| | 5 | 226 | 27.9 | 29.2 | 100.0 |
| | Total | 774 | 95.7 | 100.0 | |
| Missing | System | 35 | 4.3 | | |

| | | | | |
|-------|-----|-------|--|--|
| Total | 809 | 100.0 | | |
|-------|-----|-------|--|--|

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 137 | 16.9 | 18.1 | 18.1 |
| | 2 | 156 | 19.3 | 20.6 | 38.7 |
| | 3 | 159 | 19.7 | 21.0 | 59.6 |
| | 4 | 217 | 26.8 | 28.6 | 88.3 |
| | 5 | 89 | 11.0 | 11.7 | 100.0 |
| | Total | 758 | 93.7 | 100.0 | |
| Missing | System | 51 | 6.3 | | |
| Total | | 809 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 26 | 3.2 | 3.7 | 3.7 |
| | 2 | 38 | 4.7 | 5.4 | 9.1 |
| | 3 | 167 | 20.6 | 23.8 | 32.9 |
| | 4 | 267 | 33.0 | 38.0 | 70.8 |
| | 5 | 205 | 25.3 | 29.2 | 100.0 |
| | Total | 703 | 86.9 | 100.0 | |
| Missing | System | 106 | 13.1 | | |
| Total | | 809 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 71 | 8.8 | 9.5 | 9.5 |
| | 2 | 66 | 8.2 | 8.8 | 18.3 |
| | 3 | 159 | 19.7 | 21.2 | 39.5 |
| | 4 | 282 | 34.9 | 37.7 | 77.2 |
| | 5 | 171 | 21.1 | 22.8 | 100.0 |
| Total | | 749 | 92.6 | 100.0 | |
| Missing | System | 60 | 7.4 | | |
| Total | | 809 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 52 | 6.4 | 6.7 | 6.7 |
| | 2 | 159 | 19.7 | 20.4 | 27.1 |
| | 3 | 183 | 22.6 | 23.5 | 50.6 |
| | 4 | 293 | 36.2 | 37.7 | 88.3 |
| | 5 | 91 | 11.2 | 11.7 | 100.0 |
| Total | | 778 | 96.2 | 100.0 | |
| Missing | System | 31 | 3.8 | | |
| Total | | 809 | 100.0 | | |

2011 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 449 | 55.5 | 58.2 | 58.2 |
| | 2 | 218 | 26.9 | 28.2 | 86.4 |
| | 3 | 105 | 13.0 | 13.6 | 100.0 |
| | Total | 772 | 95.4 | 100.0 | |
| Missing | System | 37 | 4.6 | | |
| Total | | 809 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 22 | 2.7 | 2.9 | 2.9 |
| | 2 | 189 | 23.4 | 24.8 | 27.7 |
| | 3 | 290 | 35.8 | 38.1 | 65.8 |
| | 4 | 197 | 24.4 | 25.9 | 91.7 |
| | 5 | 63 | 7.8 | 8.3 | 100.0 |
| | Total | 761 | 94.1 | 100.0 | |
| Missing | System | 48 | 5.9 | | |
| Total | | 809 | 100.0 | | |

| | | Tenure | | | |
|---------|--------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 1 | 96 | 11.9 | 12.7 | 12.7 |
| | 2 | 38 | 4.7 | 5.0 | 17.8 |
| | 3 | 205 | 25.3 | 27.2 | 45.0 |
| | 4 | 129 | 15.9 | 17.1 | 62.2 |
| | 5 | 124 | 15.3 | 16.5 | 78.6 |
| | 6 | 161 | 19.9 | 21.4 | 100.0 |
| | Total | 753 | 93.1 | 100.0 | |
| Missing | System | 56 | 6.9 | | |
| Total | | 809 | 100.0 | | |

| | | Employment Intention | | | |
|---------|--------|----------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 1 | 548 | 67.7 | 71.5 | 71.5 |
| | 2 | 24 | 3.0 | 3.1 | 74.7 |
| | 3 | 65 | 8.0 | 8.5 | 83.2 |
| | 4 | 95 | 11.7 | 12.4 | 95.6 |
| | 5 | 34 | 4.2 | 4.4 | 100.0 |
| | Total | 766 | 94.7 | 100.0 | |
| Missing | System | 43 | 5.3 | | |
| Total | | 809 | 100.0 | | |

2012 Procedural Justice Index Item Responses

| Statistics | | | | | | | | | | |
|------------|------|------|------|------|------|------|--------------------|------|--------|----------------------|
| | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| Valid | 2421 | 2322 | 2277 | 2083 | 2272 | 2356 | 2361 | 2278 | 2331 | 2322 |
| Missing | 71 | 170 | 215 | 409 | 220 | 136 | 131 | 214 | 161 | 170 |
| N | | | | | | | | | | |
| Mean | 3.19 | 3.57 | 2.79 | 3.70 | 3.38 | 3.22 | 1.18 | 1.69 | 1.54 | 1.55 |
| Range | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 382 | 15.3 | 15.8 | 15.8 |
| | 2 | 369 | 14.8 | 15.2 | 31.0 |
| | 3 | 445 | 17.9 | 18.4 | 49.4 |
| | 4 | 863 | 34.6 | 35.6 | 85.0 |
| | 5 | 362 | 14.5 | 15.0 | 100.0 |
| | Total | | 2421 | 97.2 | 100.0 |
| Missing | System | 71 | 2.8 | | |
| Total | | 2492 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 219 | 8.8 | 9.4 | 9.4 |
| | 2 | 212 | 8.5 | 9.1 | 18.6 |
| | 3 | 462 | 18.5 | 19.9 | 38.5 |
| | 4 | 893 | 35.8 | 38.5 | 76.9 |
| | 5 | 536 | 21.5 | 23.1 | 100.0 |
| | Total | 2322 | 93.2 | 100.0 | |
| Missing | System | 170 | 6.8 | | |
| Total | | 2492 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 503 | 20.2 | 22.1 | 22.1 |
| | 2 | 451 | 18.1 | 19.8 | 41.9 |
| | 3 | 554 | 22.2 | 24.3 | 66.2 |
| | 4 | 566 | 22.7 | 24.9 | 91.1 |
| | 5 | 203 | 8.1 | 8.9 | 100.0 |
| | Total | 2277 | 91.4 | 100.0 | |
| Missing | System | 215 | 8.6 | | |
| Total | | 2492 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 120 | 4.8 | 5.8 | 5.8 |
| | 2 | 122 | 4.9 | 5.9 | 11.6 |
| | 3 | 531 | 21.3 | 25.5 | 37.1 |
| | 4 | 790 | 31.7 | 37.9 | 75.0 |
| | 5 | 520 | 20.9 | 25.0 | 100.0 |
| | Total | 2083 | 83.6 | 100.0 | |
| Missing | System | 409 | 16.4 | | |
| Total | | 2492 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 270 | 10.8 | 11.9 | 11.9 |
| | 2 | 274 | 11.0 | 12.1 | 23.9 |
| | 3 | 471 | 18.9 | 20.7 | 44.7 |
| | 4 | 843 | 33.8 | 37.1 | 81.8 |
| | 5 | 414 | 16.6 | 18.2 | 100.0 |
| | Total | 2272 | 91.2 | 100.0 | |
| Missing | System | 220 | 8.8 | | |
| Total | | 2492 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 181 | 7.3 | 7.7 | 7.7 |
| | 2 | 534 | 21.4 | 22.7 | 30.3 |
| | 3 | 527 | 21.1 | 22.4 | 52.7 |
| | 4 | 813 | 32.6 | 34.5 | 87.2 |
| | 5 | 301 | 12.1 | 12.8 | 100.0 |
| | Total | 2356 | 94.5 | 100.0 | |
| Missing | System | 136 | 5.5 | | |
| Total | | 2492 | 100.0 | | |

2012 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1933 | 77.6 | 81.9 | 81.9 |
| | 2 | 428 | 17.2 | 18.1 | 100.0 |
| | Total | 2361 | 94.7 | 100.0 | |
| Missing | System | 131 | 5.3 | | |
| Total | | 2492 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 696 | 27.9 | 30.6 | 30.6 |
| | 2 | 1582 | 63.5 | 69.4 | 100.0 |
| | Total | 2278 | 91.4 | 100.0 | |
| Missing | System | 214 | 8.6 | | |
| Total | | 2492 | 100.0 | | |

| | | Tenure | | | |
|---------|--------|---------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 1 | 1077 | 43.2 | 46.2 | 46.2 |
| | 2 | 1254 | 50.3 | 53.8 | 100.0 |
| | Total | 2331 | 93.5 | 100.0 | |
| Missing | System | 161 | 6.5 | | |
| Total | | 2492 | 100.0 | | |

| | | Employment Intention | | | |
|---------|--------|-----------------------------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 1 | 1657 | 66.5 | 71.4 | 71.4 |
| | 2 | 233 | 9.3 | 10.0 | 81.4 |
| | 3 | 253 | 10.2 | 10.9 | 92.3 |
| | 4 | 179 | 7.2 | 7.7 | 100.0 |
| | Total | 2322 | 93.2 | 100.0 | |
| Missing | System | 170 | 6.8 | | |
| Total | | 2492 | 100.0 | | |

2013 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|---|-------------------|------|------|------|------|------|--------------------|------|--------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| Valid | N | 2357 | 2232 | 2197 | 2031 | 2237 | 2344 | 2315 | 2219 | 2283 | 2276 |
| Missing | N | 65 | 190 | 225 | 391 | 185 | 78 | 107 | 203 | 139 | 146 |
| Mean | | 3.28 | 3.63 | 2.76 | 3.76 | 3.40 | 3.21 | 1.18 | 2.11 | 2.13 | 1.51 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 3 | 2 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 341 | 14.1 | 14.5 | 14.5 |
| | Disagree | 339 | 14.0 | 14.4 | 28.9 |
| | Neither Agree nor Disagree | 387 | 16.0 | 16.4 | 45.3 |
| | Agree | 910 | 37.6 | 38.6 | 83.9 |
| | Strongly Agree | 380 | 15.7 | 16.1 | 100.0 |
| | Total | 2357 | 97.3 | 100.0 | |
| Missing | System | 65 | 2.7 | | |
| Total | | 2422 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 210 | 8.7 | 9.4 | 9.4 |
| | Disagree | 166 | 6.9 | 7.4 | 16.8 |
| | Neither Agree nor Disagree | 454 | 18.7 | 20.3 | 37.2 |
| | Agree | 814 | 33.6 | 36.5 | 73.7 |
| | Strongly Agree | 588 | 24.3 | 26.3 | 100.0 |
| | Total | 2232 | 92.2 | 100.0 | |
| Missing | System | 190 | 7.8 | | |
| Total | | 2422 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 503 | 20.8 | 22.9 | 22.9 |
| | Disagree | 431 | 17.8 | 19.6 | 42.5 |
| | Neither Agree nor Disagree | 567 | 23.4 | 25.8 | 68.3 |
| | Agree | 477 | 19.7 | 21.7 | 90.0 |
| | Strongly Agree | 219 | 9.0 | 10.0 | 100.0 |
| | Total | 2197 | 90.7 | 100.0 | |
| Missing | System | 225 | 9.3 | | |
| | Total | 2422 | 100.0 | | |

Q45) My supervisor/team leader is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 138 | 5.7 | 6.8 | 6.8 |
| | Disagree | 101 | 4.2 | 5.0 | 11.8 |
| | Neither Agree nor Disagree | 456 | 18.8 | 22.5 | 34.2 |
| | Agree | 752 | 31.0 | 37.0 | 71.2 |
| | Strongly Agree | 584 | 24.1 | 28.8 | 100.0 |
| | Total | 2031 | 83.9 | 100.0 | |
| Missing | System | 391 | 16.1 | | |
| | Total | 2422 | 100.0 | | |

Q54) My organization's leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 261 | 10.8 | 11.7 | 11.7 |
| | Disagree | 251 | 10.4 | 11.2 | 22.9 |
| | Neither Agree nor Disagree | 495 | 20.4 | 22.1 | 45.0 |
| | Agree | 798 | 32.9 | 35.7 | 80.7 |
| | Strongly Agree | 432 | 17.8 | 19.3 | 100.0 |
| | Total | 2237 | 92.4 | 100.0 | |
| Missing | System | 185 | 7.6 | | |
| Total | | 2422 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Dissatisfied | 223 | 9.2 | 9.5 | 9.5 |
| | Dissatisfied | 465 | 19.2 | 19.8 | 29.4 |
| | Neither Satisfied nor Dissatisfied | 555 | 22.9 | 23.7 | 53.0 |
| | Satisfied | 799 | 33.0 | 34.1 | 87.1 |
| | Very Satisfied | 302 | 12.5 | 12.9 | 100.0 |
| | Total | 2344 | 96.8 | 100.0 | |
| Missing | System | 78 | 3.2 | | |
| Total | | 2422 | 100.0 | | |

2013 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1899 | 78.4 | 82.0 | 82.0 |
| | 2 | 416 | 17.2 | 18.0 | 100.0 |
| | Total | 2315 | 95.6 | 100.0 | |
| Missing | System | 107 | 4.4 | | |
| Total | | 2422 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 687 | 28.4 | 31.0 | 31.0 |
| | 2 | 789 | 32.6 | 35.6 | 66.5 |
| | 3 | 565 | 23.3 | 25.5 | 92.0 |
| | 4 | 178 | 7.3 | 8.0 | 100.0 |
| | Total | 2219 | 91.6 | 100.0 | |
| Missing | System | 203 | 8.4 | | |
| Total | | 2422 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 528 | 21.8 | 23.1 | 23.1 |
| | 2 | 930 | 38.4 | 40.7 | 63.9 |
| | 3 | 825 | 34.1 | 36.1 | 100.0 |
| | Total | 2283 | 94.3 | 100.0 | |
| Missing | System | 139 | 5.7 | | |
| Total | | 2422 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1669 | 68.9 | 73.3 | 73.3 |
| | 2 | 232 | 9.6 | 10.2 | 83.5 |
| | 3 | 207 | 8.5 | 9.1 | 92.6 |
| | 4 | 168 | 6.9 | 7.4 | 100.0 |
| | Total | 2276 | 94.0 | 100.0 | |
| Missing | System | 146 | 6.0 | | |
| Total | | 2422 | 100.0 | | |

2014 Procedural Justice Index Item Responses

| | | Statistics | | | | | | | | | |
|---------|---|------------|------|------|------|------|------|--------------------|------|--------|----------------------|
| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
| Valid | N | 2436 | 2275 | 2218 | 2072 | 2215 | 2382 | 2359 | 2472 | 2344 | 2323 |
| Missing | N | 36 | 197 | 254 | 400 | 257 | 90 | 113 | 0 | 128 | 149 |
| Mean | | 3.45 | 3.69 | 2.90 | 3.90 | 3.45 | 3.30 | 1.18 | 2.18 | 2.12 | 1.48 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 3 | 2 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 264 | 10.7 | 10.8 | 10.8 |
| | Disagree | 278 | 11.2 | 11.4 | 22.2 |
| | Neither Agree nor Disagree | 456 | 18.4 | 18.7 | 41.0 |
| | Agree | 980 | 39.6 | 40.2 | 81.2 |
| | Strongly Agree | 458 | 18.5 | 18.8 | 100.0 |
| | Total | 2436 | 98.5 | 100.0 | |
| Missing | System | 36 | 1.5 | | |
| Total | | 2472 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 186 | 7.5 | 8.2 | 8.2 |
| | Disagree | 179 | 7.2 | 7.9 | 16.0 |
| | Neither Agree nor Disagree | 432 | 17.5 | 19.0 | 35.0 |
| | Agree | 833 | 33.7 | 36.6 | 71.6 |
| | Strongly Agree | 645 | 26.1 | 28.4 | 100.0 |
| | Total | 2275 | 92.0 | 100.0 | |
| Missing | System | 197 | 8.0 | | |
| Total | | 2472 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 452 | 18.3 | 20.4 | 20.4 |
| | Disagree | 398 | 16.1 | 17.9 | 38.3 |
| | Neither Agree nor Disagree | 561 | 22.7 | 25.3 | 63.6 |
| | Agree | 542 | 21.9 | 24.4 | 88.1 |
| | Strongly Agree | 265 | 10.7 | 11.9 | 100.0 |
| | Total | 2218 | 89.7 | 100.0 | |
| Missing | System | 254 | 10.3 | | |
| Total | | 2472 | 100.0 | | |

Q45) My supervisor is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 108 | 4.4 | 5.2 | 5.2 |
| | Disagree | 82 | 3.3 | 4.0 | 9.2 |
| | Neither Agree nor Disagree | 409 | 16.5 | 19.7 | 28.9 |
| | Agree | 786 | 31.8 | 37.9 | 66.8 |
| | Strongly Agree | 687 | 27.8 | 33.2 | 100.0 |
| | Total | 2072 | 83.8 | 100.0 | |
| Missing | System | 400 | 16.2 | | |
| Total | | 2472 | 100.0 | | |

Q54) My organization's senior leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 257 | 10.4 | 11.6 | 11.6 |
| | Disagree | 206 | 8.3 | 9.3 | 20.9 |
| | Neither Agree nor Disagree | 488 | 19.7 | 22.0 | 42.9 |
| | Agree | 801 | 32.4 | 36.2 | 79.1 |
| | Strongly Agree | 463 | 18.7 | 20.9 | 100.0 |
| | Total | 2215 | 89.6 | 100.0 | |
| Missing | System | 257 | 10.4 | | |
| Total | | 2472 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Dissatisfied | 181 | 7.3 | 7.6 | 7.6 |
| | Dissatisfied | 471 | 19.1 | 19.8 | 27.4 |
| | Neither Satisfied nor Dissatisfied | 531 | 21.5 | 22.3 | 49.7 |
| | Satisfied | 856 | 34.6 | 35.9 | 85.6 |
| | Very Satisfied | 343 | 13.9 | 14.4 | 100.0 |
| | Total | 2382 | 96.4 | 100.0 | |
| Missing | System | 90 | 3.6 | | |
| Total | | 2472 | 100.0 | | |

2014 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1945 | 78.7 | 82.5 | 82.5 |
| | 2 | 414 | 16.7 | 17.5 | 100.0 |
| | Total | 2359 | 95.4 | 100.0 | |
| Missing | System | 113 | 4.6 | | |
| Total | | 2472 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1 | 704 | 28.5 | 28.5 | 28.5 |
| | 2 | 863 | 34.9 | 34.9 | 63.4 |
| | 3 | 666 | 26.9 | 26.9 | 90.3 |
| | 4 | 239 | 9.7 | 9.7 | 100.0 |
| | Total | 2472 | 100.0 | 100.0 | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 555 | 22.5 | 23.7 | 23.7 |
| | 2 | 963 | 39.0 | 41.1 | 64.8 |
| | 3 | 826 | 33.4 | 35.2 | 100.0 |
| | Total | 2344 | 94.8 | 100.0 | |
| Missing | System | 128 | 5.2 | | |
| Total | | 2472 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1757 | 71.1 | 75.6 | 75.6 |
| | 2 | 203 | 8.2 | 8.7 | 84.4 |
| | 3 | 186 | 7.5 | 8.0 | 92.4 |
| | 4 | 177 | 7.2 | 7.6 | 100.0 |
| | Total | 2323 | 94.0 | 100.0 | |
| Missing | System | 149 | 6.0 | | |
| Total | | 2472 | 100.0 | | |

2015 Procedural Justice Index Item Responses

Statistics

| | | Q15 | Q17 | Q22 | Q45 | Q54 | Q63 | Supervisory Status | Age | Tenure | Employment Intention |
|---------|---|------|------|------|------|------|------|--------------------|------|--------|----------------------|
| Valid | N | 1882 | 1767 | 1755 | 1648 | 1754 | 1874 | 1598 | 1683 | 1831 | 1833 |
| Missing | N | 39 | 154 | 166 | 273 | 167 | 47 | 323 | 238 | 90 | 88 |
| Mean | | 3.61 | 3.78 | 2.92 | 3.94 | 3.51 | 3.41 | 1.18 | 2.14 | 2.16 | 1.42 |
| Range | | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 3 | 2 | 3 |

Q15) My performance appraisal is a fair reflection of my performance.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 173 | 9.0 | 9.2 | 9.2 |
| | Disagree | 186 | 9.7 | 9.9 | 19.1 |
| | Neither Agree nor Disagree | 282 | 14.7 | 15.0 | 34.1 |
| | Agree | 811 | 42.2 | 43.1 | 77.2 |
| | Strongly Agree | 430 | 22.4 | 22.8 | 100.0 |
| | Total | 1882 | 98.0 | 100.0 | |
| Missing | System | 39 | 2.0 | | |
| Total | | 1921 | 100.0 | | |

Q17) I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 154 | 8.0 | 8.7 | 8.7 |
| | Disagree | 131 | 6.8 | 7.4 | 16.1 |
| | Neither Agree nor Disagree | 244 | 12.7 | 13.8 | 29.9 |
| | Agree | 662 | 34.5 | 37.5 | 67.4 |
| | Strongly Agree | 576 | 30.0 | 32.6 | 100.0 |
| | Total | 1767 | 92.0 | 100.0 | |
| Missing | System | 154 | 8.0 | | |
| Total | | 1921 | 100.0 | | |

Q22) Promotions in my work unit are based on merit.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 380 | 19.8 | 21.7 | 21.7 |
| | Disagree | 313 | 16.3 | 17.8 | 39.5 |
| | Neither Agree nor Disagree | 370 | 19.3 | 21.1 | 60.6 |
| | Agree | 445 | 23.2 | 25.4 | 85.9 |
| | Strongly Agree | 247 | 12.9 | 14.1 | 100.0 |
| | Total | 1755 | 91.4 | 100.0 | |
| Missing | System | 166 | 8.6 | | |
| Total | | 1921 | 100.0 | | |

Q45) My supervisor is committed to a workforce representative of all segments of society.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 88 | 4.6 | 5.3 | 5.3 |
| | Disagree | 73 | 3.8 | 4.4 | 9.8 |
| | Neither Agree nor Disagree | 291 | 15.1 | 17.7 | 27.4 |
| | Agree | 592 | 30.8 | 35.9 | 63.3 |
| | Strongly Agree | 604 | 31.4 | 36.7 | 100.0 |
| | Total | 1648 | 85.8 | 100.0 | |
| Missing | System | 273 | 14.2 | | |
| Total | | 1921 | 100.0 | | |

Q54) My organization's senior leaders maintain high standards of honesty and integrity.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|----------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Disagree | 219 | 11.4 | 12.5 | 12.5 |
| | Disagree | 157 | 8.2 | 9.0 | 21.4 |
| | Neither Agree nor Disagree | 308 | 16.0 | 17.6 | 39.0 |
| | Agree | 650 | 33.8 | 37.1 | 76.1 |
| | Strongly Agree | 420 | 21.9 | 23.9 | 100.0 |
| | Total | 1754 | 91.3 | 100.0 | |
| Missing | System | 167 | 8.7 | | |
| | Total | 1921 | 100.0 | | |

Q63) How satisfied are you with your involvement in decisions that affect your work?

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|------------------------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly Dissatisfied | 157 | 8.2 | 8.4 | 8.4 |
| | Dissatisfied | 318 | 16.6 | 17.0 | 25.3 |
| | Neither Satisfied nor Dissatisfied | 348 | 18.1 | 18.6 | 43.9 |
| | Satisfied | 705 | 36.7 | 37.6 | 81.5 |
| | Very Satisfied | 346 | 18.0 | 18.5 | 100.0 |
| | Total | 1874 | 97.6 | 100.0 | |
| Missing | System | 47 | 2.4 | | |
| | Total | 1921 | 100.0 | | |

2015 Demographic Question Responses

Supervisory Status

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1312 | 68.3 | 82.1 | 82.1 |
| | 2 | 286 | 14.9 | 17.9 | 100.0 |
| | Total | 1598 | 83.2 | 100.0 | |
| Missing | System | 323 | 16.8 | | |
| Total | | 1921 | 100.0 | | |

Age

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 469 | 24.4 | 27.9 | 27.9 |
| | 2 | 645 | 33.6 | 38.3 | 66.2 |
| | 3 | 439 | 22.9 | 26.1 | 92.3 |
| | 4 | 130 | 6.8 | 7.7 | 100.0 |
| | Total | 1683 | 87.6 | 100.0 | |
| Missing | System | 238 | 12.4 | | |
| Total | | 1921 | 100.0 | | |

Tenure

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 404 | 21.0 | 22.1 | 22.1 |
| | 2 | 729 | 37.9 | 39.8 | 61.9 |
| | 3 | 698 | 36.3 | 38.1 | 100.0 |
| | Total | 1831 | 95.3 | 100.0 | |
| Missing | System | 90 | 4.7 | | |
| Total | | 1921 | 100.0 | | |

Employment Intention

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------|--------|-----------|---------|---------------|--------------------|
| Valid | 1 | 1439 | 74.9 | 78.5 | 78.5 |
| | 2 | 132 | 6.9 | 7.2 | 85.7 |
| | 3 | 146 | 7.6 | 8.0 | 93.7 |
| | 4 | 116 | 6.0 | 6.3 | 100.0 |
| | Total | 1833 | 95.4 | 100.0 | |
| Missing | System | 88 | 4.6 | | |
| Total | | 1921 | 100.0 | | |

APPENDIX C

OLS REGRESSION MODEL TESTS FOR MULTICOLLINEARITY

NRC Regression Model Collinearity Diagnostics

2010

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| NRC 2010 | 1 | 4.442 | 1.000 | .00 | .01 | .00 | .00 | .01 |
| | 2 | .304 | 3.825 | .00 | .06 | .01 | .02 | .80 |
| | 3 | .143 | 5.568 | .00 | .74 | .11 | .10 | .02 |
| | 4 | .066 | 8.198 | .32 | .03 | .16 | .74 | .07 |
| | 5 | .045 | 9.945 | .68 | .16 | .72 | .14 | .09 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Weights

| Model | Correlations | Collinearity Statistics | |
|----------------------|--------------|-------------------------|-------|
| | | Tolerance | VIF |
| (Constant) | | | |
| Supervisory Status | .241 | .924 | 1.083 |
| Age | -.049 | .699 | 1.430 |
| Tenure | -.046 | .662 | 1.511 |
| Employment Intention | -.379 | .994 | 1.007 |

2011

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| NRC 2011 | 1 | 4.403 | 1.000 | .00 | .01 | .00 | .01 | .01 |
| | 2 | .318 | 3.722 | .00 | .04 | .01 | .04 | .79 |
| | 3 | .148 | 5.452 | .00 | .74 | .07 | .18 | .00 |
| | 4 | .089 | 7.053 | .21 | .07 | .18 | .64 | .10 |
| | 5 | .042 | 10.192 | .78 | .15 | .74 | .14 | .10 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Weights

| Model | | Correlations | | | Collinearity Statistics | |
|-------------|----------------------|--------------|---------|-------|-------------------------|-------|
| | | Zero-order | Partial | Part | Tolerance | VIF |
| NRC 2011 | (Constant) | | | | | |
| | Supervisory Status | .194 | .220 | .203 | .916 | 1.091 |
| | Age | -.046 | -.037 | -.033 | .715 | 1.398 |
| | Tenure | -.055 | -.089 | -.081 | .671 | 1.490 |
| | Employment Intention | -.375 | -.378 | -.369 | .996 | 1.004 |

2012

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| NRC 2012 | 1 | 4.589 | 1.000 | .00 | .00 | .00 | .00 | .01 |
| | 2 | .260 | 4.199 | .00 | .02 | .01 | .01 | .93 |
| | 3 | .076 | 7.783 | .00 | .77 | .05 | .25 | .01 |
| | 4 | .050 | 9.621 | .23 | .13 | .17 | .66 | .01 |
| | 5 | .026 | 13.322 | .77 | .08 | .76 | .08 | .03 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Weights

| Model | | Correlations | | | Collinearity Statistics | |
|-------------|----------------------|--------------|---------|-------|-------------------------|-------|
| | | Zero-order | Partial | Part | Tolerance | VIF |
| NRC 2012 | (Constant) | | | | | |
| | Supervisory Status | .174 | .196 | .189 | .915 | 1.093 |
| | Age | -.037 | -.048 | -.045 | .762 | 1.312 |
| | Tenure | -.035 | -.033 | -.031 | .729 | 1.372 |
| | Employment Intention | -.278 | -.278 | -.272 | .988 | 1.012 |

2013

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| NRC 2013 | 1 | 4.527 | 1.000 | .00 | .00 | .01 | .00 | .01 |
| | 2 | .259 | 4.181 | .00 | .02 | .03 | .02 | .91 |
| | 3 | .116 | 6.237 | .02 | .30 | .57 | .00 | .01 |
| | 4 | .057 | 8.873 | .00 | .30 | .38 | .79 | .00 |
| | 5 | .040 | 10.639 | .97 | .38 | .01 | .18 | .07 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Analysis weight

| Model | | Zero-order | Correlations | | | Collinearity Statistics | |
|-------------|----------------------|------------|--------------|-------|-----------|-------------------------|--|
| | | | Partial | Part | Tolerance | VIF | |
| NRC 2013 | (Constant) | | | | | | |
| | Supervisory Status | .189 | .194 | .187 | .931 | 1.075 | |
| | Age | .001 | .007 | .006 | .781 | 1.280 | |
| | Tenure | .023 | -.019 | -.018 | .742 | 1.348 | |
| | Employment Intention | -.260 | -.265 | -.260 | .993 | 1.007 | |

2014

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------------|-----------|------------|-----------------|----------------------|--------------------|--------|-----|----------------------|
| | | | | (Constant) | Supervisory Status | Tenure | Age | Employment Intention |
| NRC 2014 | 1 | 4.526 | 1.000 | .00 | .00 | .00 | .01 | .01 |
| | 2 | .261 | 4.163 | .00 | .02 | .01 | .03 | .92 |
| | 3 | .122 | 6.084 | .02 | .29 | .00 | .57 | .00 |
| | 4 | .053 | 9.211 | .08 | .51 | .51 | .38 | .01 |
| | 5 | .037 | 11.077 | .89 | .17 | .47 | .01 | .06 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Analysis Weight

| Model | Correlations | | | Collinearity Statistics | | |
|-------------|----------------------|---------|-------|-------------------------|------|-------|
| | Zero-order | Partial | Part | Tolerance | VIF | |
| (Constant) | | | | | | |
| NRC 2014 | Supervisory Status | .148 | .158 | .152 | .935 | 1.070 |
| | Tenure | -.009 | -.035 | -.033 | .730 | 1.371 |
| | Age | -.024 | .004 | .004 | .766 | 1.305 |
| | Employment Intention | -.273 | -.273 | -.270 | .990 | 1.010 |

2015

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------------|-----------|------------|-----------------|----------------------|--------------------|--------|-----|----------------------|
| | | | | (Constant) | Supervisory Status | Tenure | Age | Employment Intention |
| NRC 2015 | 1 | 4.531 | 1.000 | .00 | .00 | .00 | .01 | .01 |
| | 2 | .260 | 4.176 | .00 | .02 | .01 | .02 | .93 |
| | 3 | .122 | 6.107 | .02 | .28 | .00 | .57 | .00 |
| | 4 | .053 | 9.280 | .10 | .52 | .47 | .38 | .02 |
| | 5 | .035 | 11.440 | .87 | .17 | .52 | .02 | .04 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Analysis Weight

| Model | Correlations | | | Collinearity Statistics | | |
|-------------|----------------------|---------|-------|-------------------------|------|-------|
| | Zero-order | Partial | Part | Tolerance | VIF | |
| (Constant) | | | | | | |
| NRC 2015 | Supervisory Status | .203 | .207 | .201 | .947 | 1.055 |
| | Tenure | -.013 | -.033 | -.031 | .730 | 1.370 |
| | Age | -.026 | -.003 | -.002 | .759 | 1.318 |
| | Employment Intention | -.243 | -.239 | -.233 | .984 | 1.016 |

SEC Regression Model Collinearity Diagnostics

2010

| Collinearity Diagnostics ^{a,b} | | | | | | | | |
|---|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| SEC 2010 | 1 | 4.428 | 1.000 | .00 | .01 | .00 | .00 | .01 |
| | 2 | .335 | 3.635 | .00 | .03 | .01 | .01 | .84 |
| | 3 | .149 | 5.442 | .00 | .88 | .06 | .05 | .00 |
| | 4 | .047 | 9.688 | .88 | .07 | .01 | .38 | .13 |
| | 5 | .040 | 10.476 | .12 | .02 | .92 | .55 | .02 |

a. Dependent Variable: PJI

b. Weighted Least Squares Regression - Weighted by Weights

| Model | | Correlations | | | Collinearity Statistics | |
|-------|----------------------|--------------|---------|-------|-------------------------|-------|
| | | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | | | | | |
| | Supervisory Status | .280 | .314 | .297 | .957 | 1.045 |
| | Age | .029 | .040 | .036 | .631 | 1.585 |
| | Tenure | -.045 | -.137 | -.124 | .624 | 1.603 |
| | Employment Intention | -.310 | -.332 | -.316 | .990 | 1.010 |

2011

| Collinearity Diagnostics ^{a,b} | | | | | | | | |
|---|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| SEC 2011 | 1 | 4.406 | 1.000 | .00 | .01 | .00 | .00 | .01 |
| | 2 | .338 | 3.608 | .00 | .02 | .01 | .03 | .84 |
| | 3 | .140 | 5.618 | .00 | .85 | .06 | .11 | .01 |
| | 4 | .076 | 7.637 | .33 | .05 | .10 | .66 | .10 |
| | 5 | .040 | 10.462 | .66 | .08 | .83 | .19 | .04 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Weights

| Model | Correlations | | | Collinearity Statistics | |
|------------|--------------|---------|-------|-------------------------|-------|
| | Zero-order | Partial | Part | Tolerance | VIF |
| (Constant) | | | | | |
| SEC | .285 | .362 | .346 | .919 | 1.089 |
| 2011 | -.053 | .005 | .005 | .679 | 1.473 |
| | -.116 | -.207 | -.188 | .643 | 1.554 |
| | -.266 | -.310 | -.291 | .994 | 1.006 |

2012

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| SEC | 1 | 4.581 | 1.000 | .00 | .00 | .00 | .00 | .01 |
| | 2 | .252 | 4.267 | .00 | .02 | .01 | .02 | .90 |
| | 3 | .093 | 7.035 | .00 | .72 | .05 | .20 | .00 |
| | 4 | .045 | 10.052 | .07 | .09 | .47 | .78 | .00 |
| | 5 | .030 | 12.414 | .92 | .16 | .46 | .00 | .09 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Weights

| Model | Correlations | | | Collinearity Statistics | |
|------------|--------------|---------|-------|-------------------------|-------|
| | Zero-order | Partial | Part | Tolerance | VIF |
| (Constant) | | | | | |
| SEC | .283 | .321 | .308 | .972 | 1.029 |
| 2012 | -.075 | -.065 | -.059 | .779 | 1.283 |
| | -.142 | -.145 | -.133 | .787 | 1.270 |
| | -.251 | -.268 | -.252 | .997 | 1.003 |

2013

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|----------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| SEC 2013 | 1 | 4.518 | 1.000 | .00 | .00 | .01 | .00 | .01 |
| | 2 | .254 | 4.216 | .00 | .02 | .04 | .02 | .87 |
| | 3 | .120 | 6.128 | .03 | .38 | .42 | .03 | .03 |
| | 4 | .068 | 8.131 | .03 | .20 | .52 | .63 | .01 |
| | 5 | .039 | 10.708 | .93 | .40 | .01 | .32 | .09 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Analysis weight

| Model | Correlations | Collinearity Statistics | |
|----------------------|--------------|-------------------------|-------|
| | | Tolerance | VIF |
| (Constant) | | | |
| Supervisory Status | .296 | .961 | 1.040 |
| Age | -.040 | .739 | 1.354 |
| Tenure | -.094 | .746 | 1.341 |
| Employment Intention | -.260 | .996 | 1.004 |

2014

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|----------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| SEC 2014 | 1 | 4.519 | 1.000 | .00 | .00 | .01 | .00 | .01 |
| | 2 | .255 | 4.208 | .00 | .02 | .03 | .02 | .88 |
| | 3 | .117 | 6.220 | .03 | .40 | .43 | .04 | .01 |
| | 4 | .068 | 8.127 | .02 | .17 | .53 | .67 | .00 |
| | 5 | .041 | 10.555 | .94 | .41 | .00 | .27 | .10 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Analysis Weight

| Model | Correlations | | | Collinearity Statistics | | |
|------------|----------------------|---------|-------|-------------------------|------|-------|
| | Zero-order | Partial | Part | Tolerance | VIF | |
| (Constant) | | | | | | |
| SEC | | | | | | |
| 2014 | | | | | | |
| | Supervisory Status | .221 | .254 | .244 | .955 | 1.047 |
| | Age | -.067 | -.009 | -.008 | .750 | 1.334 |
| | Tenure | -.138 | -.160 | -.150 | .755 | 1.325 |
| | Employment Intention | -.258 | -.259 | -.248 | .993 | 1.007 |

2015

Collinearity Diagnostics^{a,b}

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | | | |
|-------|-----------|------------|-----------------|----------------------|--------------------|-----|--------|----------------------|
| | | | | (Constant) | Supervisory Status | Age | Tenure | Employment Intention |
| SEC | 1 | 4.523 | 1.000 | .00 | .00 | .00 | .00 | .01 |
| | 2 | .260 | 4.172 | .00 | .01 | .05 | .03 | .80 |
| | 3 | .118 | 6.184 | .02 | .45 | .30 | .03 | .08 |
| | 4 | .060 | 8.681 | .02 | .14 | .64 | .70 | .00 |
| | 5 | .039 | 10.795 | .95 | .40 | .00 | .24 | .11 |

a. Dependent Variable: PJI Score

b. Weighted Least Squares Regression - Weighted by Analysis Weight

| Model | Correlations | | | Collinearity Statistics | | |
|------------|----------------------|---------|-------|-------------------------|------|-------|
| | Zero-order | Partial | Part | Tolerance | VIF | |
| (Constant) | | | | | | |
| SEC | | | | | | |
| 2015 | | | | | | |
| | Supervisory Status | .179 | .222 | .210 | .973 | 1.027 |
| | Age | -.094 | -.042 | -.038 | .710 | 1.409 |
| | Tenure | -.127 | -.131 | -.122 | .702 | 1.424 |
| | Employment Intention | -.285 | -.304 | -.295 | .998 | 1.002 |