ABSTRACT

FITZGERALD, CLARE JENSEN. Understanding Performance Information Use by Nonprofit Executives: An Empirical Analysis (Under the direction of Dr. Rajade Berry-James).

Over the past two decades – in response to mounting pressure for accountability and performance – the nonprofit sector has grown, professionalized, and broadened its range of stakeholders. This has, in effect, complicated issues of accountability, and emphasized the need for performance measurement within nonprofit organizations (LeRoux & Wright, 2010). While research related to performance measurement in nonprofits has escalated in recent years, there remain "many significant gaps in the literature, particularly related to performance-based management and performance information use" (LeRoux & Wright, 2010, p. 572-73). This study addresses this gap by investigating individual, organizational, and environmental factors which influence performance information use by nonprofit executives.

The study extends current performance information use research by grounding hypotheses in organizational theory, exploring information use in a new context, validating a new scale measuring support capacity, and comparing results across two operationalizations of performance information use. Prior studies have almost uniformly explored purposeful performance information use (i.e. use which is intended to improve an organization) in medium to large size governments. This study includes an additional type of information use, political performance information use. Political use is advocacy-based, geared at garnering additional resources and legitimacy on behalf of an organization. As such, primary research questions for this study are: What drives nonprofit executives to use performance information, and are different drivers more likely to promote specific types of use?

This study utilizes an online survey to collect data. After contacting 1,496 individual youth development organizations via email, the study yielded 260 useable responses for a response rate of 17.4%. These responses were analyzed using multiple regression and structural equation modelling. The results of the analyses show several interesting findings. First, while the interaction of public service motivation and perceived social impact has a net negative effect on political use, perceived social impact does mitigate the larger negative influence of public service motivation. This interaction does not significantly impact purposeful use. Second, of the forms of stakeholder involvement explored in this study, activity level in a community partnership is the only consistently significant and positive influence on both purposeful and political information use. Third, an exploratory investigation of information use and performance shows that political information use mediates the relationship between purposeful use and perceived organizational performance. Combined, these findings demonstrate that nonprofit executives are unique in their information use patterns, suggesting an acute need for contextually diverse research that includes multiple operationalizations of information use.

Understanding Performance Information Use by Nonprofit Executives:
An Empirical Analysis

by
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DEDICATION

This dissertation is dedicated to my family, friends, partner, and pet.

BIOGRAPHY

A North Carolina native, Clare FitzGerald was born near Winston Salem and raised in Raleigh. She graduated with her bachelor's degree from the University of North Carolina at Chapel Hill in 2009 with majors in Music and Italian. After graduation she moved to Dusseldorf where she spent most of her time singing, learning German, riding her bike, and worrying about the future. Inspired to change directions, Clare returned to North Carolina and where she earned her MPA in 2013 while working for the North Carolina Departments of Commerce and Environment and Natural Resources. In the fall of 2013, Clare began her Ph.D., working as a research assistant on the National Science Foundation sponsored *FireChasers* research team where she studied intergovernmental response to wildfires in the Pacific Northwest. The following fall, Clare joined the Curriculum Pathways team at SAS Institute as a Research Scientist where she continues to investigate data and technology use in the public sector.

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CHAPTER 1. INTRODUCTION

1.1 Introduction

While its origins date back at least half a century, performance management is the

most widely pursued public sector reform since the 1990s, the hay day of new public

management (Joyce, 2011). Today, this is reflected in the "unprecedented pressure that

public actors are under to perform, in a context where performance is defined by quantitative

indicators" (Moynihan et al., 2011, p. 141). While results-oriented reforms have become the

predominant model for public managers to follow, their success remains difficult to evaluate.

Studies linking performance management functions to improved performance remain scarce

despite prolonged academic attention and widespread support for results-oriented reforms

(Hanaway, 2014; Poister, 2010; Poister, Pasha, & Edwards, 2013).

Recognizing that measuring alone does not boost performance, scholars have instead

begun focusing on performance information use by public managers as a measure of

"assessing whether [performance oriented] reforms have been worth the effort" (Tantardini

& Kroll, 2015, p. 84). In this sense, managerial performance information use in day-to-day

operations demonstrates compliance with good data production routines and general support

for the reform (Dooren & Walle, 2008; Kroll & Vogel, 2014; Tantardini & Kroll, 2015).

Studying "use and non-use of performance data in decision-making has become a

highly relevant and fast growing research area" (Kroll, 2015a, p. 460). Still, despite this

increasing popularity, performance information use remains an "understudied variable

relative to its importance" (Moynihan, Pandey, & Wright, 2012a, p. 470). While there are

numerous studies seeking to establish variables which promote performance information use

in public organizations, most focus on variables with direct effects and sample almost exclusively from medium and large sized governments.

Like government entities, nonprofits have experienced mounting pressure for accountability and performance over the past two decades. As increasingly frequent government contractors, the nonprofit sector has grown, become more professionalized, and broadened its range of stakeholders. This has, in turn, complicated issues of accountability, emphasizing the need for performance measurement (LeRoux & Wright, 2010). The pressure on organizations to quantitatively demonstrate performance has come from internal and external stakeholders leading a majority of nonprofit agencies to invest in some degree of performance measurement (Carman, 2007; LeRoux & Wright, 2010; Morley, Vinson, & Hatry, 2001). While research related to performance measurement in nonprofits has escalated in recent years, there are "many significant gaps in the literature, particularly related to performance-based management and performance information use" (LeRoux & Wright, 2010, pp. 572–73). This dissertation seeks to address this gap by investigating the significance and relative importance of drivers of two kinds of performance information use by nonprofit executives: use geared at organizational improvement, and use geared at advocating on the organization's behalf.

1.2 Conceptual Model

Among performance information use studies, one of the clearest findings is that the level of leadership support for performance-oriented reforms positively effects performance information use. In this dissertation, I control for leadership support as a way to understand what else drives managerial performance information use in nonprofits. Specifically, I examine how executives' public service motivation and perceived social impact,

organizational support capacity, developmental culture, and three types of stakeholder involvement each influence performance information use.

Perceived social impact has been shown to have a positive influence on performance information use in a recent study which surveyed nonprofits and government employees (Moynihan et al., 2012a). The authors extend the findings to suggest a larger positive associated between public service motivation and performance management. This study includes both perceived social impact (PSI) and public service motivation (PSM) in an effort test not only their relationships with information use, but their relationship with each other.

Studies show that governmental organizations with developmental or innovative cultures use performance information "more intensely" (Kroll, 2015a, p. 472). While nonprofit research has examined the relationship between organizational culture and innovativeness (Jaskyte, 2004), the consequences of having a developmental culture on performance information use have not been examined.

The degree and adequacy to which financial, personnel, and technical assistance resources are uniquely dedicated to making performance measurement – termed support capacity here – is not only a well-established driver of performance information use in governmental contexts, it is often cited as a challenge for nonprofits hoping to implement performance measurement and management systems (Carman & Fredericks, 2010; Carnochan, Samples, Myers, & Austin, 2014; LeRoux & Wright, 2010). In this study, I assess the degree to which adequate resource investment by a nonprofit influences subsequent use by executives.

Studies from government show that when stakeholders care about performance, they may encourage public managers to use performance information (Berman & Wang, 2000;

Bourdeaux & Chikoto, 2008; Ho, 2006; Kroll, 2015a; Moynihan & Hawes, 2012a; Moynihan & Ingraham, 2004; Moynihan & Pandey, 2010). I suggest that, for nonprofit executives, the role of stakeholders is particularly important because of their unique relationship with donors, funders, and funding organizations. These dependent, arguably more coercive, arrangements between stakeholder groups may alter the mechanisms which cause stakeholder involvement to drive information use by governmental public managers. I use organizational theory to examine if the support of performance-oriented reforms made by external, internal, and partnership stakeholder groups encourages performance information use by managers.

Figure 1-1: The Conceptual Model
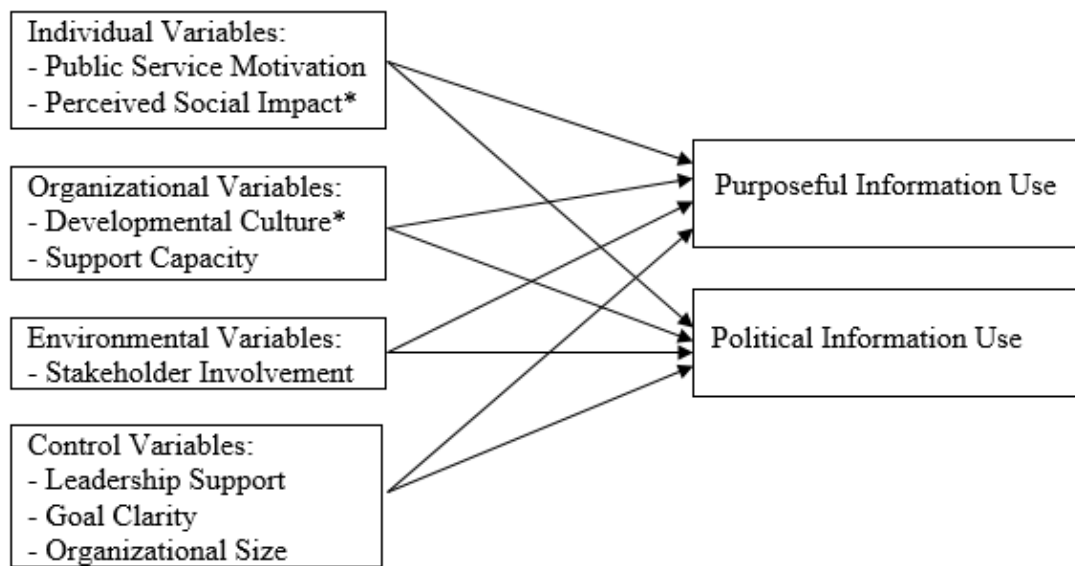
* denotes an interaction term between variables listed

1.3 Contributions

In addition to building empirical support for established performance information use drivers in a new context, this research makes an important contribution by developing theory on performance information use in nonprofits, particularly around the role of stakeholder involvement and the relationship between public service motivation, perceived social impact,

and performance information use. Furthermore, although there are numerous studies on performance information use, many do not offer theoretical support for their findings (Folz, Abdelrazek, & Chung, 2009; LeRoux & Wright, 2010; Melkers & Willoughby, 2005). In response to calls for the inclusion of organizational theory in nonprofit research, this dissertation incorporates innovation theory as well as agency theory, stewardship theory, and resource dependency theory in developing hypotheses around why managers use performance information (Carman, 2011).

The preponderance of performance information use studies examine purposeful performance information use: use which is meant to improve the organization (Moynihan, 2008). The conceptual differences between use types are discussed in the following chapter, but it is important to note that this dissertation includes two operationalizations of performance information use and, as such, endeavors to understand how and if the drivers which promote purposeful use differ from those that drive political use, use geared at advocating for an organization.

In addition to incorporating organizational theory, testing for indirect effects, and operationalizing two dimensions of performance information use, this dissertation makes an additional contribution by collecting data from nonprofit youth development organizations across the United States: a distinct advantage among nonprofit performance measurement and management studies which primarily investigate one to a few organizations, are limited to a single state, or use a case study approach (Carman, 2007, 2009; LeRoux & Wright, 2010).

1.4 Chapter 1 Summary and Upcoming Chapter

Chapter 1 introduced the primary research questions of this dissertation: what drives nonprofit executives to use performance information and, are different drivers more likely to promote specific types of use, in this case purposeful and political? These questions are important and timely as nonprofits continue to invest resources into performance measurement and management while performance information use remains a relatively under-researched area (Lee, 2014; LeRoux & Wright, 2010). Lastly, Chapter 1 outlined the contributions of this dissertation to nonprofit and, more largely, public administration research.

This dissertation is written in five chapters. Chapter 2 reviews literature related to our primary research question, opening with a discussion of how performance measurement and management differ. Following, I review current conceptualizations of performance information use which serves to tease out the two performance information use types examined in this study. I then position performance information use as an indication of transition between performance measurement and management. After, a review of the empirical literature on drivers of performance information use and background on organizational theory yields testable hypotheses.

Chapter 3 outlines the proposed original survey with variable operationalization used for data collection. It also includes specifics on data collection processes, including the survey pre-test and refinement, study sample size and representativeness, as well as descriptive statistics and scale and index development and validation for study variables.

Chapter 4 presents the analysis – stepwise and comprehensive multivariate regression analysis and partial structural equation models – and a section on hypothesis testing results.

Chapter 5 completes the dissertation by offering initial results from a secondary exploratory study of the relationship between performance information use and perceived organizational performance as well as discussing larger implications of the findings from the primary study of drivers of performance information use. This final chapter concludes by outlining the contributions and limitations of this study and offering viable directions for future related research.

CHAPTER 2. LITERATURE REVIEW

2.1 Performance Measurement vs Performance Management

Despite being confused or used interchangeably in practice and in literature, performance measurement and performance management are not the same thing (Carnochan et al., 2014; Hatry, 2006; McHargue, 2003). Performance measurement refers to "the regular collection and reporting of information about the efficiency, quality, and effectiveness of…programs" (Martin & Kettner, 1996, p. 3). Performance management is widely understood as a system of internal organizational processes based on regular, formal tracking of quantitative objectives geared towards results (Hatry, 2007; Melkers & Willoughby, 2005; Speckbacher, 2003). In essence, performance measurement may occur in the absence of meaningful performance management but effective performance management requires good performance measurement.

From a theoretical standpoint, performance information – the data used to track progress toward quantitatively defined objectives – plays an important role in helping managers improve their organizational performance. Indeed, this is the essential logic behind performance management systems. The well-known "Plan, Do, Study, Act" (PDSA) model highlights this link between performance measurement and management (Deming, 1994a, 1994b; Kroll, 2015a). An iterative process of defining indicators, collecting data, analyzing and reporting that data, and using data to make decisions, this model envisions effective managers as both generating systematic performance information and comparing organizational plans to documented organizational progress (Kroll, 2015a). While several definitions of performance information exist (Dooren & Walle, 2008; Hatry, 2007; Moynihan, 2008) most share two basic features: 1) data that are systematically collected and reported by an organization that capture 2) more than just inputs (Kroll, 2015a).

Figure 2-1: PDSA Management Cycle

Kroll, 2015; Deming, 1994
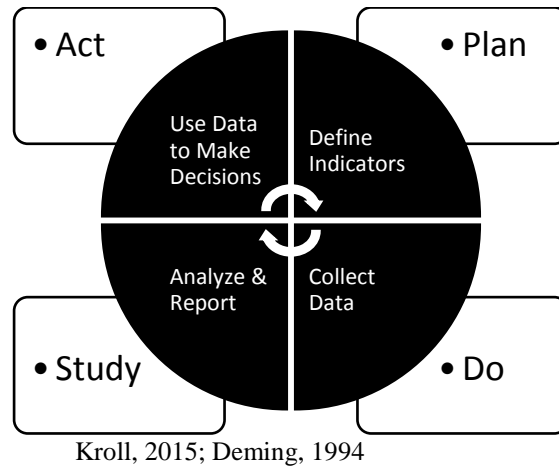
The PDSA model and other models like it assume managers will act based on performance reports, but scholars have shown that not all public managers do this (Radin, 2006; Sanger, 2013). This is problematic for two reasons. By not using performance information to drive decisions, managers create organizational processes which support the notion that creating data is a suitable end in and of itself (Kroll, 2015a). This renders the "act" phase of performance management obsolete. However, it is precisely this "act" phase, characterized by the use of performance information for decision-making, which is the real hope and primary mechanism of organizational change in performance management doctrine.

2.2 Dependent Variable: Performance Information Use

2.2.1 Purposeful Performance Information Use

Central to this study is understanding what exactly constitutes performance information use. Perhaps most famously, Robert Behn offered a list of eight performance information uses or purposes: evaluation, control, budget, motivation, promotion, celebration, learning, and improvement (Behn, 2003). He argued that managers should use performance measurement because it may be helpful in achieving one or some of these eight overarching managerial purposes. While the article is oft-cited and illustrative of the various

roles managers may play, these purposes do not lend themselves to operationalization chiefly because they lack mutual exclusivity. The fact is, organizations might use information achieve multiple or different ends.

Alternatively, nonprofit scholars found that while some nonprofit managers understood performance measurement as a strategic management tool, others viewed it more as a marketing and promotional tool while still others believed it to be a "resource drain and distraction" (Carman & Fredericks, 2008, p. 51). Nevertheless, despite different views on the value of performance measurement, two thirds of participants from that same study reported using performance information for strategic planning purposes.

Meanwhile, Moynihan's typology of performance information use distinguishes four types:

- Purposeful use describes when managers use data to promote efficiency and effectiveness gains (Hatry, 2007; Moynihan, 2008)

- Passive use describes managers doing the minimum required to comply with the procedural requirements of performance systems but not substantively using data (Moynihan, 2008; Radin, 2006)

- Perverse use describes when managers use data in ways that are detrimental to organizational goals even if some performance measures increase (Heinrich, 2007a, 2007b; Jacob & Levitt, 2003; Moynihan, 2008; van Thiel & Leeuw, 2002)

- Political use describes when managers employ data to advocate for the legitimacy and resource needs of a program or organization (Moynihan, 2008)

Much literature has demonstrated the pervasive nature of passive performance information use. This superficial or even symbolic use is common in many organizations as a way for managers to show concern towards performance without meaningfully changing their organizations (Moynihan & Lavertu, 2012; Sanger, 2013). This dissertation focuses more squarely on substantive forms of performance information use by nonprofit executives. I specifically build theory and examine factors driving purposeful and political use.

Of the four routine performance information use types, purposeful use maps most directly onto the true hope of performance management doctrine – that data are used to improve organizational performance (Hatry, 2007; Moynihan, 2008). Indeed, the overwhelming majority of performance information use studies examine – both explicitly and tacitly – purposeful performance information use. Some capture performance information use by employing multi-item scales assessing very specific managerial behaviors (Julnes & Holzer, 2001; LeRoux & Wright, 2010; Moynihan & Hawes, 2012a) while others opt for perceptual measures. Those using perceptual measures maintain that, despite the shortcomings of perceptual measures, evidence supports their inclusion. Even when researchers measure different purposeful uses of performance information, they remain unidimensional (Julnes & Holzer, 2001; Kroll, 2013; Moynihan et al., 2012a).

2.2.2 Political Performance Information Use

As mentioned previously, in addition to purposeful performance information use, this study examines political performance information use. Political use occurs when agents responding to management reforms use data to advocate for their program or organization (Moynihan, 2008). While nonprofits experience pressures to perform not unlike those faced by government entities, the existing narrow research focus on purposeful use in

governmental settings fails to capture various types of use and their determinants, possibly overlooking differences which may cause managers to use performance information differently. Because of the contractual relationship between nonprofits and governments (Witesman & Fernandez, 2013), the necessity of securing funding, and experience with environmental resource scarcity (Modi, 2012), nonprofit managers are different from government managers in the sense that the link between political performance information use, resource acquisition, and ultimately performance, may be more direct. It is for this reason that I include a less common type of information use, political performance information use, in this study (Moynihan et al., 2012a).

2.3 From Performance Measurement to Performance Management

There are compelling reasons to believe that performance information use indicates meaningful organizational change. Public and nonprofit management literatures hint at this by stating that performance information use is the best indication of whether or not results-oriented reforms are worth the organizational effort require to implement and sustain them (Moynihan & Pandey, 2010; Tantardini & Kroll, 2015). In essence, these scholars contend that "the [substantive] use of performance information suggests the type of purposeful and goal-oriented behavior that elected officials and members of the public say they want from bureaucrats" (Moynihan & Pandey, 2010, p. 850) and, in this way, is evidence of behavior demonstrating essential components of performance management are being executed within an organization.

Thinking back to the aforementioned PDSA model, the space wherein managers substantively use information – which their organizations have systematically created, tracked, and reported on – to improve their organization as somewhat embodying a transition

from performance measurement to performance management. Today's paradigm of managing for results seems to transcend copious literature on the specifics of how to measure those results (Gao, 2015) which effectively decouples the "act" phase from the phases preceding it. Indeed both concepts, performance measurement and performance management, have a shared goal in improving performance. While the tendency in the literature on performance measurement and management has been to extoll their independence, it is important to note that performance measurement is a prerequisite to performance management (Fox, Yamagata, & Harris, 2014): measurement is but one component of a larger, more holistic performance management approach (Poister, 2010; Sanger, 2008, 2013).

It is important, then, to establish the relationship between our dependent variable, purposeful and political performance information use, and the related concepts of diffusion and innovation. While the focus of this study is to explain the determinants of performance information use by nonprofit managers, a brief foray into diffusion and innovation helps to illustrate not only the processual nature of building a successful performance management system, but also how performance information use can be positioned as a measure of progress through the innovation process.

To clarify this point, I examine literature which focuses on the way that innovations – in this case performance management – become standard practice within organizations. While it was Everett Rogers' work that first garnered great attention from academics and practitioners across disciplines, innovation scholars have since developed more comprehensive models of the innovation process, explaining how innovations go from being new to standard operating procedure (Figure 2-2) (Singhal & Dearing, 2006).

After innovations crystalize – be they ideas, technologies, or procedures – they may disseminate. People and organizations, upon hearing of an innovation as a potential solution to a previously identified problem, choose whether or not to adopt it. After adoption, an organization endeavors to implement the innovation. Following an implementation period, the innovation may institutionalize, becoming embedded within an organization and rendering its previous ways of "doing business" unacceptable (Bingham & McNaught, 1976, p. 5).

In recent years, social innovation has gained popularity as a research interest creating a multitude of definitions for what a social innovation is:

- A new activity or service intended to meet an unsatisfied or emerging social need delivered primarily through organizations with social characteristics (Mulgan, 2006).

- "The institutionalization of a socially relevant idea or new model, such as the formation of new organizations and the enforcement of new rules and so on, and melding these with existing social structures in order that they become part of the normal social practice" (Loogma, Tafel-Viia, & Ümarik, 2012, p. 286).

- "A policy, program, or technology that is new to its potential users… [It] need not be novel, but merely new to the innovating individual or organization" (Goodman & Steckler, 1989, p. 63).

If we understand performance management as new-to-the-user rules made available to existing social structures, organizations wanting to adopt performance management may begin by implementing outcome and performance measurement (Lee, 2014; MacIndoe &

Barman, 2013). Upon achieving a reliable measurement systems, managers and executives may begin making meaningful use of performance information. I argue that it is substantive performance information use that demarcates a shift from what is a measurement focused performance management system to a mature performance management system and, as such, a transition from adoption and early implementation to late implementation and early institutionalization.

To understand what drives managers to use performance information substantively is to begin to understand what factors promote an implementation process well-aligned to what innovation scholars might call a core component, or central doctrine, of performance management (Singhal & Dearing, 2006; Tornatzky & Klein, 1982). To this end, I suggest that substantive performance information use can be understood as a measure of performance management implementation fidelity because it provides evidence that a primary mechanism for organizational change via performance management – that managers substantively use performance data – exists within adopting organizations.

Figure 2-2: The Innovation Process

- Performance Management: Performance Information Use Studies (e.g. Moynihan, Pandey & Wright, 2012; Kroll, 2013; LeRoux & Wright 2010)

Dissemination

- Research and solutions to problem(s) are developed
- Ways to spread the word about research outcomes are planned and executed

Research & Development

Implementation

- An entity perceives a problem and chooses the solution which best meets its needs and capacities
- The sollution, an innovation, is put to use
- The innovation and/or the system in which it is adtoped mutually adapt
- The innovation is integrated into the continuing practices of the entity

Adoption

Institutionalization

- Performance Measurement: Adoption Studies (e.g. MacIndoe & Barman, 2014; Carman, 2007)

2.4 Drivers of Performance Information Use

As performance information use is a relatively new stream within public management, there exists one systematic literature review to date on the subject (Kroll, 2015a). A particularly useful summary of findings, Kroll's review contains findings from 25 empirical articles with a dependent variable characterized by purposeful performance information use. Kroll categorizes performance information use drivers according to their evidentiary base labelling variables important, promising, and insignificant and/or inconclusive drivers of information use.

In this section, I first describe the limitations of the studies included in this systematic literature review before identifying independent variables included in this study and developing related hypotheses. I periodically refer back to this systematic literature review to both clarify research contributions and explain the state of research around the drivers of purposeful and political performance information use.

2.4.1 Limitations of these Studies

Kroll's systematic literature review focuses on articles which explore purposeful performance information use by managers published in public management and public administration journals available through Web of Knowledge, JSTOR, and EBSCOhost (Kroll, 2015a). The mean R-squared of models predicting performance information use was 39%, indicating that a substantial amount of observed variance has been accounted for in the literature. It is important to note that of the 25 articles included in this systematic literature review, only Moynihan et al.'s 2012 article on prosocial values and performance management theory includes respondents from nonprofit organizations. To my knowledge, it is also the only study to expressly examine political performance information use. All other

study samples utilize state or local government representatives to understand determinants of purposeful information use. See Table 2-1 for a list of included studies and essentials.

As for limitations, a sizeable proportion of this research comes from outside the United States (e.g. Germany, Norway, Wales, Australia, and Taiwan) introducing reasons for generalizability concerns. Furthermore, authorship is insular in this stream: three people appear as major contributors in over 50% of the studies reviewed. Lastly, many studies leverage secondary data stemming from various national survey endeavors spearheaded by organizations like the Governmental Accounting Standards Board, the Government Accountability Office, and the National Administrative Studies Project (Dull, 2009; Julnes & Holzer, 2001; Moynihan & Pandey, 2010; Moynihan, Pandey, & Wright, 2012b), limiting the amount of research based on data collections specifically tailored to assess performance information use and making reliability and validity of used measures less certain.
Still other studies examine performance information use as related to a specific reform initiatives like the Government Performance and Result Act, the UK's Best Value reviews, and various state benchmarking projects (Ammons & Rivenbark, 2008; Askim, Johnsen, & Christophersen, 2008; Boyne, Williams, Law, & Walker, 2004; Yang & Hsieh, 2007). While related data collections offer valuable insight, they may bias results by increasing the likelihood that participating organizations have some degree of comfort with performance measurement and management, and raise social desirability concerns experienced by participants. Because performance measurement and management are timely and relevant at the point of data collection, mangers may be more inclined to report information use than in normal circumstances.

Table 2-1: 25 Performance Information Use Articles

Author	Title	Method	Analysis	Level of Govt; Sample Size	Summary
Ammons & Rivenbark, 2008	Factors influencing the use of performance data to improve municipal services	survey; interview	case study	local government; 15 cases	Studies use of benchmarking data that identify system maturity, data quality, and managers' attitudes as critical factors
Askim et al., 2008	Factors behind organizational learning from benchmarking	survey	OLS	Norwegian local government; n = 138	Studies use of benchmarking data to change policies or routines that focus on network and administrative characteristics as well as political factors
Berman & Wang, 2000	Performance measurement in US counties	survey; interview	chi-square	local (county) government; n = 155	Examines outcomes of multiple purposeful uses that point to stakeholder involvement and support capacity as critical factors
Bourdeaux & Chikoto, 2008	Legislative influences on performance management reform	survey	OLS	state government; n = 124	Studies extent of effective performance information use, finds that stakeholder involvement and political competition are important
Boyne et al., 2004	Toward the self-evaluating organization	survey; interview; document analysis	OLS	Welsh local government; n = 79	Studies use of performance information to self-evaluate authority's services, focuses on leadership support and employee involvement as critical variables
de Lancer Julnes & Holzer, 2001	Promoting the Utilization of performance measures in public organizations	survey	OLS	state and local government; n = 363	Studies use of performance information for multiple management purposes, points to critical role of political and cultural factors

Table 2-1 Continued

Author	Title	Method	Analysis	Level of Govt; Sample Size	Summary
Dull, 2009	Results-model reform leadership	survey	maximum likelihood	federal government; n = 1,860	Studies use of performance information across a variety of management functions, it identifies leadership commitment as critical variable
Folz, Abdelrazek, & Chung, 2009	The adoption, use, and impacts of performance measures in medium-size cities	survey	correlation; OLS	local government; n = 157	Examines perceived usefulness of performance information, finds that employee involvement and familiarity with measures matter.
Ho, 2006	Accounting for the value of performance measurement from the perspective of Midwestern mayors	survey; interview		local government; n = 250	Examines perceived impact of PI, suggests that stakeholder involvement and managers' attitudes and involvement are critical
Johansson & Siverbo, 2009	Explaining the utilization of relative performance evaluation in local government	survey	logistic regression	Swedish local government; n = 210	Studies use of benchmarking data, concludes that cultural and political factors are essential
Kroll, 2013	The other type of performance information	survey	confirmatory factor analysis; OLS	German local government; n = 195	Studies several uses of PI, identifies managers' networking as crucial variables
Kroll & Proeller, 2013	Controlling the control system		comparative case study	German local government; n = 2	Studies use of performance information, finds that more sophisticated, complex measurement systems increase use by administrators but can also make political control more difficult

Table 2-1 Continued

Author	Title	Method	Analysis	Level of Govt; Sample Size	Summary
Kroll & Vogel, 2014	The PSM-leadership fit	survey	OLS	German local government; n = 200	Studies use of performance information for several management functions, examines motivational basis of this behavior, concludes that prosocial motivation is important
Melkers & Whilloughby, 2005	Models of performance measurement use in local governments	survey	OLS	local (municipal and county) government; n = 197	Studies use of performance information to create purposeful lasting effects, suggests that maturity of measurement system and employee involvement are relevant factors
Moynihan, 2005	Goal-based learning and the future of performance management		comparative case study	state government; n = 3	Studies use and performance information for organizational learning, finds that learning forums and organizational culture are fundamental determinants
Moynihan & Hawes, 2012	Responsiveness to reform values	survey	OLS	local government; n = 516	Studies performance information use for several management functions, concludes that managers' general openness to environment can foster internal data use
Moynihan & Ingraham, 2004	Integrative leadership in the public sector	survey	OLS	state government; n = 42	Studies performance information use in decision-making, concludes that commitment by direct superior is important

Table 2-1 Continued

Author	Title	Method	Analysis	Level of Govt; Sample Size	Summary
Moynihan & Landuyt, 2009	How do public organizations learn?	survey	OLS	state government; n = 24,614	Studies use of feedback information for organizational learning, suggests that both structural and cultural factors matter and in particular learning forums
Moynihan & Lavertu, 2012	Does involvement in performance management routines encourage performance information use	survey	ordered probit	federal government; n = 1,422	Studies purposeful and passive use of performance information (from GPRA and PART), concludes that leadership support and learning forums are critical impact factors on purposeful use
Moynihan & Pandey, 2010	The big question for performance management	survey	ordered probit	local government; n = 1,132	Studies use of performance information (one-item measure), finds that information availability, culture, and motivation matter
Moynihan, Pandey, & Wright, 2012a	Prosocial values and performance management theory	survey	OLS	local government and nonprofits; n = 183	Studies use of performance information for several management functions, examines motivational basis of this behavior and concludes that prosocial motivation is important
Moynihan, Pandey, & Wright, 2012b	Setting the table	survey	structural equation modelling	local government; n = 1,538	Studies use of performance information, suggests that transformational leadership has positive influence as it creates innovative culture and goal clarity

Table 2-1 Continued

Author	Title	Method	Analysis	Level of Govt; Sample Size	Summary
Taylor, 2009	Strengthening the link between performance measurement and decision making	survey; interview	correlations; factor analysis	Australian state government; n = 12	Finds that internal (purposeful) and external (passive) use are disconnected, and internal use is triggered by more sophisticated systems
Taylor, 2011	Factors influencing the use of performance information for decision making in Australian state agencies	survey	OLS	Australian state government; n = 53	Studies performance information use, reports that measurement system, stakeholder support, organizational culture, and external environment are essential
Yang & Hsieh, 2007	Managerial effectiveness of government performance measurement	survey	structural equation modelling	Taiwanese local government; n = 684	Studies effectiveness of performance information, focuses on political environment and stakeholder participation as crucial factors

There is also significant overlap in the data and methods used to explain purposeful performance information use. Several studies pull from the same dataset (Kroll, 2013; Kroll & Proeller, 2013; Kroll & Vogel, 2014) and others use the exact same survey (Bourdeaux & Chikoto, 2008; Melkers & Willoughby, 2005), replicating measurement errors and data biases across findings. Several quantitative articles make use of linear regression despite including variables at different units of analysis and only one study explores indirect drivers of performance information use (Moynihan et al., 2012b). While this stream is relatively nascent, anemic statistical analyses, a reliance on perceptual measures, single informant survey designs, and data collection stemming from high-profile national surveys and/or performance reforms may skew findings by failing to accounting for grouping effects, introducing common-source bias, and replicating operationalization shortcomings.

2.4.2 Individual Independent Variables

2.4.2.1 Public Service Motivation

Kroll identifies prosocial values, of which public service motivation (PSM) is a component, as a promising driver of performance information use worth further investigation. Conceptually, PSM assumes that employees in different sectors have differing motivational bases demonstrated by a higher willingness to serve the public (Perry & Wise, 1990; Saliterer & Korac, 2014; Waterhouse, 2008). This has particular currency for nonprofits given research indicating that people with a greater desire to serve others are not only more likely to work in public organizations because of the opportunities to provide meaning public service, but they perform better because they find the work rewarding (Pandey & Stazyk, 2008; Perry, 1996; Perry, Brudney, Coursey, & Littlepage, 2008).

Moynihan, Pandey, and Wright (2010) were the first to include this individual-beliefs-based concept in a model of performance information use treating PSM as a form of extra-role behavior where employees make gifts of time and effort without the expectation of individual reward (Moynihan et al., 2012a; Saliterer & Korac, 2014). Employees with high PSM care about achieving organizational goals and view performance information as a tool to help them achieve those goals. Scholarship has made a strong theoretical argument for PSM as a positive driver of purposeful performance information use, particularly in relation to perceived social impact (Moynihan et al., 2012a), but empirical evidence has been slower to arrive (Saliterer & Korac, 2014).

> **H1:** Public service motivation will be positively associated with purposeful performance information use

2.4.2.2 Perceived Social Impact

Consistent with expectancy and goal theories of motivation, recent scholarship demonstrates that the benefits of PSM depend on the degree to which employees feel that their work satisfies their desire to serve others (Moynihan et al., 2012a). Employees with higher levels of PSM are more likely to be motivated when they see how their work benefits others. It follows, then, that employees high perceived social impact (PSI) as related to their professional work will be more likely to utilize performance data as a management tool to achieve the goals they value than individuals with lower levels of PSI. This study conceives of PSI as the degree to which employees feel their work efforts have a beneficial effect on peoples' lives. The causal mechanisms behind PSM and PSI as positive factors driving purposeful information use are not dissimilar from the mechanisms that link the motivational nature of tasks and performance information use explored by Moynihan and Lavertu in their study of management routines (2012). They find that when employees believe performance

measures facilitate greater achievement of the mission they care about, they may be more inclined to use those measures. Understanding the relationship between PSM and PSI is an important consideration for nonprofits whose staff are notably public service-motivated (Steen, 2008; Sung Min Park & Word, 2012) but may be struggling with implementing a well-working performance management system.

H2: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and purposeful performance information use

Similarly, employees who see the value of their work are more likely to be willing to argue in support of it to external stakeholders and the public. Here, performance data may be recognized as a weapon helping to legitimate services and potentially win new resources (Moynihan et al., 2012a). In previous research, PSI was found to have a stronger effect on political use of performance information than purposeful use (Moynihan et al., 2012a). I anticipate a seeing as similar pattern here.

H3: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and political performance information use

H4: The interaction between perceived social impact and public service motivation will have a stronger effect on political performance information use than purposeful performance information use

2.4.3 Organizational Independent Variables

2.4.3.1 Developmental Culture

Developmental cultures, sometimes referred to as innovation cultures, promote dialogue and discussion rather than reward and punishment, rendering performance information less threatening to employees (Folz et al., 2009; Johansson & Siverbo, 2009; Kroll, 2015a; Moynihan, 2005; Moynihan & Pandey, 2010; Moynihan et al., 2012a). Similarly, early diffusion research described early adopters of innovations as open to change

and adventuresome (Durlak & DuPre, 2008). Chiefly, innovation or developmental cultures (used interchangeably throughout) support performance information use because information use facilitates learning and improvement through additional feedback. Moynihan and Pandey suggest that innovative organizational cultures foster performance information use because they are associated with a focus on flexibility, adaptability and readiness, growth, and – to a lesser extent – resource acquisition (2012a). In developmental cultures, these authors find that the use of performance information is more integrated into management decisions as formative rather than summative feedback with an emphasis on learning and improving.

> **H5:** Developmental culture of a nonprofit will be positively related to purposeful performance information use
>
> **H6**: Developmental culture of a nonprofit will be positively related to political performance information use
>
> **H7**: Developmental culture will be stronger predictor of purposeful performance information use than political performance information use

Additionally, I suggest there may be an interaction effect between nonprofits with highly developmental cultures and the degree to which support capacity positively influences purposeful performance information use. Because developmental cultures focus on learning, improving, and are often willing to try new things, support capacity within an organization may be more readily and effectively utilized – increasing data availability and quality and the likelihood of purposeful use. Conversely, it could also be argued that organizations with developmental cultures may be more inclined to dedicate resources to performance measurement than those without resulting in a similarly positive effect on usage.

> **H8**: Developmental culture will have a positive interaction effect on the relationship between support capacity and purposeful performance information use.

2.4.3.2 Support Capacity

Support capacity, defined as resources, capabilities, and technology available to make performance measurement work, is a well-documented and important driver of purposeful performance information use (Berman & Wang, 2000; Julnes & Holzer, 2001; Moynihan & Hawes, 2012a; Yang & Hsieh, 2007). Studies have shown that the success of performance management is dependent upon how systems "are adopted and early investments in their support can pay off later on" (Berman & Wang, 2000; Julnes & Holzer, 2001; Kroll, 2015a, p. 12; Moynihan & Hawes, 2012a; Yang & Hsieh, 2007). Of the studies examining support capacity, one explores capacity in county government (Berman & Wang, 2000), one examines state and local governments (Julnes & Holzer, 2001), and two investigate local governments (Moynihan & Hawes, 2012b; Yang & Hsieh, 2007), the latter of which samples Taiwanese local government units and utilizes structural equation modelling in its analysis.

Support capacity differs from other organizational factors as it examines the specific commitment of time, personnel, and money to performance measurement as well as the adequacy of information technology dedicated to performance measurement. Research has shown that the success of performance management is partially dependent on the level of support extended to systems during adoption and throughout implementation (Berman & Wang, 2000; Julnes & Holzer, 2001; Kroll, 2015a; Moynihan et al., 2011; Moynihan & Hawes, 2012a). The notion that adequate support capacity during adoption and implementation increases the likelihood of success is also supported by findings from studies of health promotion program sustainability (Allison, Silverman, & Dignam, 1990; Barr, Tubman, Montgomery, & Soza-Vento, 2002; Durlak & DuPre, 2008; Fixsen, Blase, Naoom, & Wallace, 2009; Greenhalgh et al., 2005; Stith et al., 2006). These scholars suggest that

adequate resources, skills, technical assistance, and personnel ensure the presence of

necessary skills and enhance self-efficacy among staff members as well as equip staff to

effectively problem solve throughout a dynamic implementation process.

H9: Support capacity of a nonprofit will be positively associated with purposeful
performance information use

Because support capacity enfranchises organizations to make the most of

performance measurement, it may also influence nonprofit managers to use information

politically by making data more reliable and accessible to a variety of stakeholders.

H10: Support capacity of a nonprofit will be positively associated with political
performance information use

Carnochan et al.'s comparative case study highlights performance measurement

challenges in nonprofit human service organizations (2013). She asserts that while

"performance measurement offers a strategy for retaining competent staff, addressing

outcomes relevant to community and other stakeholders, and informing decisions leading to

long-term sustainability", the actual practice of using internal data often exceeds the

organizational and staff capacity as well as the technical resources available (Carnochan et

al., 2014, p. 1015; Epstein & Buhovac, 2009; Forbes, 1998). She and her team find that

organizations with dedicated and well-trained staff not only maintained systems more

consistently, they were better able to utilize performance information.

H11: Of the dimensions of support capacity, staff training will be the strongest
predictor of purposeful performance information use

2.4.4 Environmental Independent Variable

2.4.4.1 Stakeholder Involvement

Kroll's systematic literature review identifies stakeholder involvement as an

important driver of performance information use. Repeatedly, stakeholder involvement has

been shown to have a positive impact on purposeful performance information use. This is because stakeholders "can encourage managers to take performance information seriously" and can help to make sense of numbers or identify meaningful indicators (Kroll, 2015a, p. 472). When managers know that stakeholders care about performance they feel the need to stay current on their department's data, performance trends, and explanations of outliers (Berman & Wang, 2000; Bourdeaux & Chikoto, 2008; Ho, 2006; Moynihan & Hawes, 2012a; Moynihan & Ingraham, 2004; Moynihan & Pandey, 2010). Of the studies that explore the influence of stakeholder involvement specifically on purposeful performance information use, two sample from state government (Bourdeaux & Chikoto, 2008; Moynihan & Ingraham, 2004), one samples from county government (Berman & Wang, 2000), and 3 sample local governments (Ho, 2006; Moynihan & Hawes, 2012a; Moynihan & Pandey, 2010). Each of these studies uses survey data, and two offer descriptive but not predictive findings (Berman & Wang, 2000; Ho, 2006).

Nonprofits operate in a political environment wherein reporting and performance measurement are mandates for funding (Carnochan et al., 2014; MacIndoe & Barman, 2013). External stakeholders – including government agencies, funders and even affiliated national headquarters – can resemble principals who rely on agents (in this case nonprofits) to deliver services (e.g. after school programs and youth development opportunities). Agency theory tells us that organizations are primarily motivated by personal gains instead of collective interests (Davis, Schoorman, & Donaldson, 1997a; Van Slyke, 2007). Accordingly, I anticipate that nonprofit organizations would measure performance simply because funders require them to. In this way, performance measurement, like evaluation, becomes a transaction cost imposed on nonprofits by funders so that they can monitor the impact of

grants and contracts (Carman, 2011). Moynihan, Pandey, and Wright suggest that agencies with "external constituencies face greater pressure to legitimate their efforts and activities and are more likely to use performance data as a means of doing so" (2012a, p. 157). In this arrangement, principals (i.e. external stakeholders like government and/or donors) may look to performance data as a means to manage this principal-agent relationship driving nonprofits to use data to advocate for support.

> **H12:** External stakeholder support of performance measurement will be positively associated with political performance information use

Stewardship theory, on the other hand, suggests that nonprofits are altruistic and, first and foremost, seek to provide public benefit. Unlike agency theory, stewardship theory suggests that principals and agents have similar goals and will work together to achieve them (Caers et al., 2009; Carman, 2011; Davis, Schoorman, & Donaldson, 1997b; Dicke, 2002; Lex Donaldson & Davis, 1991). By this logic, I expect nonprofits to measure performance and use performance information because it allows them to better serve the public and build trust amongst stakeholders. I suggest that internal stakeholders – like board members, clients, and staff – may influence managers to use performance information purposefully by encouraging leaders to take performance information seriously and helping to make sense of numbers and identify meaningful indicators. When managers know that these stakeholders care about performance, they feel the need to stay current on their department's data, performance trends, and explanations of outliers (Berman & Wang, 2000; Bourdeaux & Chikoto, 2008; Ho, 2006; Moynihan & Hawes, 2012a; Moynihan & Ingraham, 2004; Moynihan & Pandey, 2010; Yang & Hsieh, 2007).

> **H13:** Internal stakeholder support of performance measurement will be positively associated with purposeful performance information use

For nonprofits, however, pressure to engage in performance measurement more often comes from external resources including contractual obligations to public human service agencies and private foundations demanding financial and program accountability. This is often a condition of receiving funding from government and private foundations. It is less frequent that performance management initiatives come from internal sources (Carnochan et al., 2014) suggesting that performance measurement is less intrinsically valuable to nonprofit managers. As such, I expect that external stakeholder involvement will be a stronger predictor of political performance information use than internal stakeholder involvement will be of purposeful performance information use.

H14: External stakeholder support will be a stronger predictor of political performance information use than internal stakeholder support will be of purposeful performance information use

Given the widespread criticism of networks failing to provide bureaucratic-like accountability (Kroll, 2015a; Moynihan & Hawes, 2012a), assessing whether nonprofits are more likely to use performance information when operating in networks may have important implications for overall governance effectiveness. Moynihan and Hawes provide early evidence that participating in a network may provide some level of accountability as measured by performance information use (2012). In this context, the network of partnerships is at least partly governed by performance systems, and may foster greater use of performance data. Network participation may represent a mechanism by which public actors collect information from and respond to the insights of stakeholders while establishing basic norms of trust and accountability allowing members to demand results-based accountability (Moynihan & Hawes, 2012a).

Consequently, using performance information may represent a strategy employed by nonprofits to "manage and mitigate the effects of inter-organizational relationships and the environment" (Carman, 2011, p. 354). Resource dependency theory suggests that organizations are inescapably embedded in their environment but capable of both adapting to and modifying that environment (Pfeffer & Salancik, 1978). While organizations may be in partnership around common goals, potentially a form of adaptation or modification, these inter-organizational relationships "can become political struggles in which 'different parties [seek] to influence each other to their own advantage'" (Carman, 2011, p. 354; L. Donaldson, 1995, p. 130). This suggests that network participants are increasingly aware of performance goals and can better use data to promote or defend their program and lobby for resources (Moynihan & Hawes, 2012a). In this sense, nonprofit managers may use performance data as a way to manage network relationships suggesting that nonprofit managers who report a higher reliance on and engagement in collaboration may report using performance data more. This is particularly salient for service-providing nonprofits who increasingly find themselves in community-based interventions implemented through local partnerships (Butterfoss, 2007).

> **H15:** Activity in a collaborative arrangement will be positively associated with political performance information use

2.5 Control Variables

2.5.1 Individual Control Variable

2.5.1.1 Leadership Support

There is general agreement that leadership support fosters purposeful performance information use directly and indirectly (Moynihan & Lavertu, 2012; Moynihan et al., 2012b). Through credible commitment – where leaders encourage performance information use by

devoting explicit and credible support (e.g. time, money, personnel, and rewards) for performance-oriented reforms and processes – leaders communicate the importance of the reform. Leaders can also create a demand for performance by being active participants in performance management systems and using information to hold employees accountable for outcomes. Leadership support indicates to line managers that the organization takes seriously the effort of participating in performance measurement and management. "If managers suspect agency leaders are prone or simply will not be around to make good on reform commitments, their attention and effort will gravitate to other problems and priorities" (Boyne et al., 2004; Dull, 2009; Kroll, 2015a, p. 472; Moynihan & Ingraham, 2004; Moynihan & Lavertu, 2012; Yang & Hsieh, 2007). Because leadership support is a firmly established driver of managerial and organizational performance information use, I control for it here in order to investigate the effects of less established determinants. Nevertheless, I anticipate that when managers support performance measurement, they will be more likely to use it.

2.5.2 Organizational Control Variable

2.5.2.1 Organizational Size

While it has been hypothesized that larger organizations are more professional and can devote more resources to their performance management practices, it has not been shown that they demonstrate higher levels of data use once other variables are controlled (Bourdeaux & Chikoto, 2008; Johansson & Siverbo, 2009; Kroll, 2013, 2015a; Melkers & Willoughby, 2005; Moynihan & Ingraham, 2004; Taylor, 2009, 2011). Kroll suggests that "although larger organizations might be more likely to adopt more sophisticated systems, this

will not automatically increase data use when other important conditions, such as stakeholder involvement, leadership support, or an innovative culture, are not present" (2015, p. 475).

Still, in assessing whether or not nonprofit organizations use outcome measurement, MacIndoe and Barman find that "Nonprofits with less than US $50,000 in annual revenue are less likely to report the use of outcome measurement than nonprofits with larger revenues" (2013, p. 723). As such, it will be interesting to see if organizational size is a significant predictor of performance information use for nonprofits. I do expect that, in particular, organizational size will have a positive interaction effect on the relationship between support capacity and purposeful performance information use.

2.5.2.2 Goal Clarity

I control for goal clarity, a well-documented positive driver of purposeful performance information use (Kroll, 2015a). When organizations have clearly stated goals it is more likely those goals are discussed, evaluated, and progressed toward them tracked. This renders performance information more important to individuals and organizations (Kroll, 2015a; Moynihan et al., 2012a, 2012b). Additionally, increased ease of linking measures to performance may promote information use as an established causal story is more likely to exist within the organization (Moynihan & Lavertu, 2012). In previous studies goal clarity has been used as both an independent variable and a control variable. Moynihan, Pandey and Wright use it as a control in their study of prosocial values and find it positively associated with both types of use, but only significant for political usage (2012a).

In this study, it is particularly important to control for goal clarity as nonprofits often experience challenges in not only defining client outcomes but also reconciling tensions between funder-mandated measures and staff ideas of client progress (Carnochan et al.,

2014). The complexity inherent to the work and management of nonprofits means they may struggle with performance management. Because of the recently-professionalized nature of the youth development field, and the variety of youth serving organizations included in our sample, I control for goal clarity as a way of mitigating the effects of sampling from a profession without widely standardized performance indicators or models of change.

2.6 Chapter 2 Summary and Upcoming Chapter

Briefly summarized, this chapter reviewed the literature on performance information use and conceptualized performance information use four ways: as passive, political, purposeful, and perverse forms of use highlighting that this study examines two of these dimensions, purposeful and political. Engaging with innovation theory, the chapter also highlighted how performance information use can be understood as a measure of implementation fidelity, as an indication that an organization is transitioning from a measurement focused performance management system to a more mature, holistic performance management system. I then delve into empirical performance information use research which focuses almost exclusively on purposeful use. I provide background and rationale for independent and control variables included in this study and tease out direct and relational hypotheses listed in the following Table 2-2.

In the next chapter, I begin by restating the research questions central to this study after which I outline the survey methodology used to test the hypotheses developed in this chapter. I then provide my research design and data collection processes, including survey pre-test and refinement, survey response rate and sample statistics, missing data analysis and imputation, and frequencies and scale validation for included variables.

Table 2-2: Hypotheses and Related Literature

Hypotheses	Related Literature
H1: Public service motivation will be positively associated with purposeful performance information use	Moynihan & Pandey, 2010; Moynihan, Pandey & Wright, 2012a; Saliterer & Korac, 2014
H2: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and purposeful performance information use	Moynihan, Pandey & Wright, 2012; Moynihan & Lavertu, 2012
H3: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and political performance information use	
H4: The interaction between perceived social impact and public service motivation will have a stronger effect on political performance information use than purposeful performance information use	
H5: Developmental culture of a nonprofit will be positively related to purposeful performance information use	Moynihan, Pandey & Wright, 2012; Durlak, 2008; Folz, Abdelrazek & Chung, 2009; Johansson & Siverbo, 2009
H6: Developmental culture of a nonprofit will be positively related to political performance information use	
H7: Developmental culture will be stronger predictor of purposeful performance information use than political performance information use	
H8: Developmental culture will have a positive interaction effect on the relationship between support capacity and purposeful performance information use	
H9: Support capacity of a nonprofit will be positively associated with purposeful performance information use	Berman & Wang, 2000; de Lancer Julnes & Holzer, 2001; Durlak & DuPre, 2008; Carnochan et al., 2013; Epstein, 2010
H10: Support capacity of a nonprofit will be positively associated with political performance information use	
H11: Of the dimensions of support capacity, staff training will be the strongest predictor of purposeful performance information use	
H12: External stakeholder support of performance measurement will be positively associated with political performance information use	Moynihan & Ingraham, 2004; Moynihan, Pandey & Wright, 2012a; Lee & Clerkin, 2015; Carnochan et. al., 2013; Moynihan & Hawes, 2012
H13: Internal stakeholder support of performance measurement will be positively associated with purposeful performance information use	Moynihan & Ingraham, 2004; Moynihan & Hawes, 2013; Berman & Wang, 2000; Moynihan & Pandey, 2010
H14: External stakeholder support will be a stronger predictor of political performance information use than internal stakeholder support will be of purposeful performance information use	Carnochan, 2013
H15: Activity in a collaborative arrangement will be positively associated with political performance information use	Kroll, 2015; Moynihan & Hawes, 2013; Carman, 2011

CHAPTER 3. DATA, VARIABLES, AND METHODS

3.1 Introduction

This chapter provides a detailed account of the measures used to test the hypotheses generated in Chapter 2 before offering information on the data collection process, sample size and representativeness, and preliminary data analysis. Again, the study presented in this dissertation aims to answer two central research questions:

1) What drives nonprofit executives to use performance information?

2) Are specific information use drivers more likely to promote purposeful or political performance information use?

3.2 Research Design

3.2.1 Data Collection Partners

The focus of this dissertation stems from a long-time relationship between the nationally recognized youth-development nonprofit, the Forum for Youth Investment, and my employer, SAS Institue. The Forum and its affiliates provide services to myriad organizations working in government, education, business, philanthropy, and the nonprofit sector across the United States. Services offered include consulting, technical assistance, evaluation, and quality improvement services to collaborations, task forces, and service providers alike. The partnership between SAS and the Forum began in 2012 in an effort to develop software solutions for communities looking to track, share, and evaluate inter-organizational youth-focused efforts. This dissertation undergirds a larger effort to assess nonprofit needs and tailor forthcoming performance measurement and management software and technology accordingly.

3.2.2 Database

Data for this study come from a national online survey of nonprofit executives. I derived my sample from the National Center for Charitable Statistics (NCCS), a project of the Center on Nonprofits and Philanthropy at the Urban Institute (http://nccs.urban.org/). The NCCS boasts a standard classification of nonprofit organizations which provides a level of granularity not achieved with an IRS activity code, making it a compelling source for choosing a sample. This standard classification system is called the National Taxonomy of Exempt Entities (NTEE) and it undergoes classification verification with the largest organizations within each NTEE major category every year. While the NCCS houses several types of data files, I pulled my information from their Core Data files which house information on all 501c(3) organizations required to fill out an IRS Form 990 (or Form 990-EZ) in 2014. This means that the representation of nonprofits with gross receipts of less than $25,000 within this sample is on a voluntary basis: smaller organizations are not required to file with the IRS.

3.2.3 Sample Population

I specifically examined executive performance information use in service providing youth development nonprofit organizations. This allowed me to maintain a degree of comparability between organizations. Like the larger nonprofit sector, youth development organizations have experienced increasing attention towards accountability and performance particularly as the field has professionalized over the past two decades (Connell, 1999; Quinn, 2004). I specifically target youth organizations which offer programs and services because they functionally align most closely to human service organizations – the nonprofit type most likely to adopt and use performance measures (Carnochan et al., 2014; MacIndoe

& Barman, 2013). This population includes executive directors at youth centers and boys and girls clubs (NTEE codes O20, O21, O22, O23; n=2,176); adult and child matching programs (NTEE codesO30, O31; n=608); camp fire organizations (O43; n=83); youth development programs (NTEE codes O50, O51, O53, O54; n=3,179); and youth development – NEC (organizations that provide youth services but for whom a more specific code cannot be assigned) (O99; n=488). The total population for these organizations is 6,534.

Table 3-1: NTEE Organizations

NTEE	Number of Organizations	Percentage of Population
O20	2,176	33.3%
O30	608	9.3%
O43	83	1.2%
O50	3,179	48.7%
O99	488	7.5%
Total	6,534	100%

To efficiently gather email contact information for executives at each nonprofit, I ran this list of NCCS organizations against SAS' marketing subscriptions to see if any matched on organization name. This yielded an initial list of 4,375 matches, some with multiple email contacts and others with no listed email addresses. I removed organizations without viable emails, kept organizations with a single point of contact, and, for organizations with multiple contacts listed, I selected the individual with the highest title. If the superior position was unclear, I googled each organization to clarify who was the chief executive and made alterations to the contact list accordingly. I then re-checked this simplified list of 1,696 contacts with the initial NCCS file matching iteratively on organizational name and address. This validated 1,350 of the 1,696 contacts, leaving 346 contacts to be cross-referenced manually. The manual cross-check yielded a final list of 1,519 unique email contacts.

3.3 Survey Development and Operationalization

The survey developed for this study makes use of many previously validated scales and items. In this section I first describe the survey as it was sent to participants of the survey-pretest conducted in January of 2016. In the following section, I provide an account of the survey-pretest procedure and subsequent survey refinement process. The final survey sent to participants via email is located in Appendix D.

3.3.1 Dependent Variable: Purposeful Performance Information Use

The scale used to measure purposeful information use was developed and validated by Moynihan and Hawes (2012). Consisting of five items, this scale asks managers to report on the extent to which ("During the past year, to what extent did you **use** performance information to:") they used performance information to "1) make personnel decisions; 2) make strategic decisions; 3) make day-to-day management decisions; 4) allocate resources; and 5) learn how to make my organization more efficient". These actions align with those identified as common uses of performance information in the literature (Carman & Fredericks, 2008; Folz et al., 2009; Julnes & Holzer, 2001; LeRoux & Wright, 2010). To measure use, I employ a five-point Likert scale where 1=never; 2=rarely; 3=sometimes; 4=often; and 5=always.

I chose this operationalization of purposeful performance information use specifically because it has been shown to mitigate unfavorable effects of common source bias empirically (Moynihan & Hawes, 2012a) and conceptually (Meier & O'Toole, 2013) by including items that are behavioral in nature and refer to a specific time period. In practice, measures like these combine into a composite scale loading on one factor. This is well documented in several studies; even when researchers measure different purposeful uses of specific

performance information, they load onto a single factor (Julnes & Holzer, 2001; Kroll, 2015a; Moynihan et al., 2012a). In prior deployments, these items achieved a Cronbach's Alpha of 0.85 and an Eigenvalue of 3.43.

3.3.2 Dependent Variable: Political Performance Information Use

The following items measure political performance information use: "During the past year, to what extent did you use performance information to: 1) communicate my organizational success to stakeholders; 2) advocate for resources to support my organization; 3) explain the value of my organization to the public" (Moynihan et al., 2012a). I measured the extent of use on a five-point Likert scale where 1=never; 2=rarely; 3=sometimes; 4=often; and 5=always. Moynihan, Pandey, and Wright demonstrate empirically that political use is distinct from purposeful use (2012a). Results from their factor analysis of purposeful and political performance information use shows factor loadings near or above the 0.7 preferred threshold. Like the items used to measure purposeful performance information use, these political items are structured to mitigate unfavorable effects of common source bias by including behavioral items and specifying time period (Meier & O'Toole, 2013).

3.3.3 Exploratory Dependent Variable: Perceived Organizational Performance.

This survey included two items capturing perceived organizational performance in order to explore the as yet untested relationship between performance information use and actual organizational performance. Because this relationship is untested and secondary to the larger research interests of understanding performance information use, I did not spend time generating related hypotheses within the literature review although exploratory findings are offered in Chapter 5. To measure performance, I asked managers "to what extent they agree with the following statements? 1) Using performance information has substantially improved

my organization and 2) Compared to similar organizations, my organization is a top performer." I measure both on a five-point Likert scale where 1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; and 5=strongly agree).

These items are patterned after Hanaway's work on whether results-based management tools improved organizational performance (2013). While perceptual measures are less reliable and more prone to bias, the varied nature of youth development organizations precludes the inclusion of more objective performance indicators. Consequently, all results from anticipated analyses using this secondary dependent variable are intended to be of an exploratory nature.

3.3.4 Individual Independent Variables

3.3.4.1 Public Service Motivation

To measure public service motivation I again leveraged previously validated measures including a well-vetted five-item scale capturing managerial agreement with the following statements: "Meaningful public service is very important to me"; "I am often reminded by daily events about how dependent we are on one another"; "Making a difference in society means more to me than personal achievements"; "I am prepared to make enormous sacrifices for the good of society";; and "I am not afraid to go to bat for the rights of others even if it means I will be ridiculed". Again I use a five-point agreement Likert scale where 1=strongly disagree and 5=strongly agree. This five-item scale has been tested across five different datasets, one of which included nonprofit organizations (Wright, Christensen, & Pandey, 2013). The composite reliability of this five-item measure ranged from 0.74 to 0.87, well above the 0.7 threshold.

3.3.4.2 Perceived Social Impact

I used Moynihan, Pandey and Wright's four item scale (2012a) to measure perceived social impact. Again I examined manager's level of agreement with the following statements: "I feel that my work makes a positive difference in other people's lives"; "I am very aware of the ways in which my work is benefitting others"; "I am very conscious of the positive impact my work has on others"; and "I have a positive impact on others in my work on a regular basis". Managers assess their level of agreement using a five-point Likert scale where 1=strongly disagree and 5=strongly agree. Developed and tested using a mixed sample of nonprofits and public organizations, this scale achieved a Cronbach's alpha of 0.86 (Moynihan et al., 2012a).

3.3.5 Organizational Independent Variables

3.3.5.1 Developmental Culture

Developmental organizational culture is measured by three of Zammuto and Krakower's five-item scale, an oft used measurement in other work on performance information use (Kroll, 2013; Moynihan & Pandey, 2010; Taylor, 2009, 2011; Zammuto & Krakower, 1991). I asked managers, "to what extent do you agree with the following statements: 1) my organization is a very dymanic and entrepreneurial place. People are willing to stick their necks out and take risks; 2) the glue that holds my organization together is a commitment to innovation and development; and 3) the staff shows great readiness to meet new challenges" where 1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; and 5=strongly agree.

An important caveat is that I do not assume that this measure aggregates to represent the actual organizational culture each participating manager represents. Rather, it is best to

understand this as a proxy for how each participant experiences or understands their own organization's culture (Kroll, 2013). In the most recent application of this scale (Kroll, 2013), Cronbach's alpha was 0.867 and items loaded well above the preferred 0.7 threshold in a principal components factor analysis: 1) 0.884; 2) 0.907; and 3) 0.873.

3.3.5.2 Support Capacity

Support capacity is measured with five items patterned after capacity measures used by Berman and Wang (2000) as well as de Lancer Julnes and Holzer (2001). I asked participants the extent to which they agreed with the following statements: "My organization… 1) has committed resources (time, people, money) to be used in the measurement of organizational performance; 2) can relate outputs to organizational operations; 3) has staff capable of collecting performance information in a timely way; 4) has staff capable of analyzing performance data; 5) has adequate information technology for performance measurement" (1=strongly disagree-5=strongly agree). These items are intended to capture different aspects of support capacity: item one measures resource investment, items two through four assesses staff training and competency, and item 5 specifically looks at IT investment, a capital-like investment and well-established barrier to performance measurement and management (Carnochan et al., 2014).

3.3.6 Environmental Independent Variable

3.3.6.1 Stakeholder Involvement

Items used to assess stakeholder involvement are patterned after MacIndoe and Barman (2013) and Moynihan and Hawes (2012). I asked managers "how strongly do the following groups support the use of performance measurement within your organization: 1) external stakeholders (e.g. foundations, corporate donors, individuals, government, national

headquarters) and 2) internal stakeholders (e.g. board of directors, staff, clients)". I measured support with a five-point Likert scale where 1=unsupportive; 2=somewhat unsupportive; 3=neither unsupportive nor supportive; 4=supportive; and 5=require it.

In addition, I defined community based partnership and asked if a participant's organization is part of one (dichotomous 1=yes; 0=no). I then included a skip pattern wherein if participants respond yes, I ask "how active is your organization in this/these partnership(s)?" where 1=not very active, 2=somewhat active, 3=active, 4=very active, 5=extremely active". To asses the degree to which participation in a collaborative arrangement actively encourages performance information use, I measured the extent to which participants agree with the following statement, "how strongly do your organizational partners support the use of performance measurement within your organization?" (where 1=unsupportive; 2=somewhat unsupportive; 3=neither unsupportive nor supportive; 4=somewhat supportive; and 5= supportive).

3.3.7 Individual Control Variable

3.3.7.1 Leadership Support

To assess leadership support I used Dull's single-item measure assessing manager's level of agreement (1=strongly disagree, 5=strongly agree) with the following item: "As a leader in my organization, I demonstrate a strong commitment to achieving results" (2009).

3.3.8 Organizational Control Variable

3.3.8.1 Organizational Size

Size is measured by the number of full-time employees (Johansson & Siverbo, 2009; Moynihan & Ingraham, 2004).

3.3.8.2 Goal Clarity

To measure clarity I used Moynihan, Pandey, and Wright's three item scale used in their 2012 study of transformational leadership. This scale assesses level of agreement to the following statements: "1) My organization's mission is clear to almost everyone who works here; 2) It is easy to explain the goals of this organization to outsiders; and 3) My organization has clearly defined goals". with the following statements: "This organization's mission is clear to almost everyone who works here"; "It is easy to explain the goals of this organization to outsiders"; and "The organization has clearly defined goals". Cronbach's alpha for this scale was 0.79.

Table 3-2: Study Crosswalk

Variable	Related Hypotheses	Survey Items	Related Literature	Reliability & Validity
Purposeful Performance Information Use		During the past year, to what extent did you **use** performance information to: 1. Make personnel decisions 2. Make strategic decisions 3. Make day-to-day management decisions 4. Allocate resources 5. Learn how to make my organization more efficient (1=never, 2=rarely, 3=sometimes, 4=often, 5=always)	Moynihan & Hawes, 2012	Cronbach's Alpha: 0.85 Eigenvalue: 3.43
Political Performance Information Use		During the past year, to what extent did you **use** performance information to: 6. Communicate my organizational success to stakeholders 7. Advocate for resources to support my organization 8. Explain the value of my organization to the public (1=never, 2=rarely, 3=sometimes, 4=often, 5=always)	Moynihan, Pandey & Wright, 2012a	Political Factor Loadings: 1. 0.693 2. 0.665 3. 0.757
Perceived Organizational Performance		To what extent do you agree with the following statements? 1. Using performance information has substantially improved my organization. 2. Compared to similar organizations, my organization is a top performer. 1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; and 5=strongly agree	Hanaway, 2014	

Table 3-2 Continued

Variable	Related Hypotheses	Survey Items	Related Literature	Reliability & Validity
Public Service Motivation	**H1:** Public service motivation will be positively associated with purposeful performance information use	To what extent do you agree with the following statements? 1. Meaningful public service is very important to me. 2. I am often reminded by daily events about how dependent we are on one another. 3. Making a difference in society means more to me than personal achievements. 4. I am prepared to make enormous sacrifices for the good of society. 5. I am not afraid to go to bat for the rights of others even if it means I will be ridiculed. (1=strongly disagree; 5=strongly agree)	Wright, Christensen & Pandey, 2013; adapted Perry, 1996	CFI: 1.00 RMSEA: 0.04 StRMR: 0.01
Perceived Social Impact	**H2:** Perceived social impact will have a positive interaction effect on the relationship between public service motivation and purposeful performance information use **H3:** Perceived social impact will have a positive interaction effect on the relationship between public service motivation and political performance information use **H4:** The interaction between perceived social impact and public service motivation will be a stronger predictor of political performance information use than purposeful performance information use	To what extent do you agree with the following statements? 1. I feel that my work makes a positive difference in other people's lives. 2. I am very aware of the ways in which my work is benefitting others. 3. I am very conscious of the positive impact my work has on others. 4. I have a positive impact on others in my work on a regular basis. (1=strongly disagree; 5=strongly agree)	Moynihan, Pandey & Wright, 2012a	Cronbach's Alpha: 0.86

Table 3-2 Continued

Variable	Related Hypotheses	Survey Items	Related Literature	Reliability & Validity
Developmental Culture	**H5:** Developmental culture of a nonprofit will be positively related to purposeful performance information use **H6**: Developmental culture of a nonprofit will be positively related to political performance information use **H7**: Developmental culture will be stronger predictor of purposeful performance information use than political performance information use **H8**: Developmental culture will have a positive interaction effect on the relationship between support capacity and purposeful performance information use	To what extent do you agree with the following statements? 1. My organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks. 2. The glue that holds my organization together is a commitment to innovation and development. 3. The staff shows great readiness to meet new challenges. (1=strongly disagree; 5=strongly agree)	Zammuto & Krakower, 1991; Moynihan & Pandey, 2010; Kroll, 2013	Cronbach's Alpha: 0.867 PCF Loadings: 1. 0.884 2. 0.907 0.873
Support Capacity	**H9:** Support capacity of a nonprofit will be positively associated with purposeful performance information use **H10:** Support capacity of a nonprofit will be positively associated with political performance information use **H11:** Of the dimensions of support capacity, staff training will be the strongest predictor of purposeful performance information use	To what extent do you agree with the following statements? My organization... 1. Has committed resources (time, people, money) to be used in the measurement of organizational performance 2. Can relate outputs to organizational operations 3. Has staff capable of collecting performance information in a timely way 4. Has staff capable of analyzing performance data 5. Has adequate information technology for performance measurement (1=strongly disagree; 5=strongly agree)	Berman & Wang, 2000; de Lancer Julnes & Holzer, 2001	Items 2-5 "strongly distinguish counties in this sample: 79.3% of counties which have all four capabilities have a high use of performance measurement" (Berman & Wang, 2000, pg. 413-14).

Table 3-2 Continued

Variable	Related Hypotheses	Survey Items	Related Literature	Reliability & Validity
Stakeholder Involvement	**H12:** External stakeholder support of performance measurement will be positively associated with political performance information use **H13:** Internal stakeholder support of performance measurement will be positively associated with purposeful performance information use **H14:** External stakeholder support will be a stronger predictor of political performance information use than internal stakeholder support will be of purposeful performance information use **H15:** Activity in a collaborative arrangement will be positively associated with political performance information use	How strongly do the following groups support the use of performance measurement within your organization? 1. External stakeholders (e.g., foundations, corporate donors, individuals, government, national headquarters) 2. Internal stakeholders (e.g., board of directors, staff, clients) support the use of performance measurement (1=unsupportive; 2=somewhat unsupportive; 3=neither unsupportive nor supportive; supportive; require it) 3. Does your organization participate in any of these cooperative arrangements with other organizations? (0=no, 1=yes) 4. If yes, how active is your organization in this/these partnership(s)? (1=not very active; 2=somewhat active; 3=active, 4=very active; 5=extremely active) 5. If yes, how strongly do your organizational partners support the use of performance measurement within your organization? (1=unsupportive; 2=somewhat unsupportive; 3=neither unsupportive nor supportive; supportive; require it)	MacIndoe & Barman, 2013; Moynihan & Hawes, 2012	

Table 3-2 Continued

Variable	Related Hypotheses	Survey Items	Related Literature	Reliability & Validity
Leadership Support		To what extent do you agree with the following statement? 1. As a leader in my organization, I demonstrate a strong commitment to achieving results (1=strongly disagree; 5=strongly agree)	Dull, 2009	
Organizational Size		How many full-time paid employees does your organization have? (#)	Johansson & Siverbo, 2009	
Goal Clarity		To what extent do you agree with the following statements? 1. My organization's mission is clear to almost everyone who works here. 2. It is easy to explain the goals of this organization to outsiders. 3. My organization has clearly defined goals. (1=strongly disagree; 7=strongly agree)	Moynihan, Pandey & Wright, 2012b	Cronbach's Alpha: 0.79

3.4 Survey Pre-Test and Refinement

For the pilot study, I sent copies of the survey, with added sections eliciting qualitative feedback on the survey items, to 13 nonprofit professionals located across North Carolina and in Washington, DC. Between January 4th and January 13th, 11 of these nonprofit professionals participated in my pre-test, eight of whom provided complete responses. Of those who completed the survey, five identified as top managers (62.5%), two as middle managers (25%), and one as a non-supervisor (12.5%). The following paragraphs detail changes made to the survey based on feedback from these pre-test respondents. Overall, respondents had positive reactions to the survey. They felt it was "easygoing", "clear concise and free of ambiguity", included "good" and "important" questions, and was "easy to understand".

There was, however, some concern regarding academic jargon like "performance measurement" and "performance information". As such, I added consistent and repetitive definitions on critical terms throughout the survey and included examples when appropriate. In addition, I highlighted whether questions were focused on how often organizations *collected* information versus how often respondents *used* that information.

I also received feedback that some of the percentage-based multiple choice options related to survey questions not directly used for this study were too wide. One participant offered, "My guess is most survey respondents will select this option [1%-25%]. You might get more useful information if you reduced this interval". As such, for questions asking for an approximate percentage (e.g. of annual overhead costs or programs subject to performance measurement), I opted for an open percent entry with embedded format validation. Other, more relevant tweaks included adding a "don't know" option to support capacity multiple

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choice options and including "fees for service" as an additional choice under majority of organizational funding.

To streamline questions on stakeholder involvement – after concerns that it was difficult to generalize attitudes within all stakeholder groups – I rephrased "do your external stakeholders…" and "do your internal stakeholders…" to "do the *majority* of your external/internal stakeholders require your organization to use performance measurement". I also clarified "donors" as "individual donors" in the list of external stakeholder examples. Lastly, to add context, I included a qualitative open-ended question to the end of the survey asking respondents to "…elaborate on the frequency of your performance information use" providing "details on how and for what kinds of tasks you use performance information".

3.5 Survey Response Rate and Representativeness

Between February 14th and March 20th of 2016, I invited 1,519 youth development organizations (National Taxonomy of Exempt Entities (NTEE) code "O") to participate in the online survey via a personalized Qualtrics survey link (www.Qualtrics.com). Initial invitations were sent on February 14th with reminder emails scheduled in seven-day increments for individuals who had not yet completed or declined the survey: a maximum of 3 reminder emails and a final notification. Of the 1,519 links sent through email, 23 bounced. Of the 1,496 organizations successfully contacted, 322 agreed to take the survey (23.7%) of which 64 did not finish. Of the partially completed surveys, six met the 50% completion percentage which is the minimum threshold for imputation (Garson, 2015). These six, in addition to the 254 usable completed surveys yielded 260 responses for a response rate of 17.4%. 99 responses were from boys and girls clubs (O20, 38.1%), 66 responses were from youth development organizations (O50, 25.4%), 62 were from adult matching programs

(O30, 23.8%), 11 were from not otherwise categorized organizations (O99, 4.2%), and six were from youth scouting organizations (O43, 2.3%). I was unable to match 16 responses to NTEE type (6.2%) based on the survey data provided.

Table 3-3: Survey Response Rate Compared to Total Population Breakdown

NTEE	# of Organizations	% of Population	# of Responses	% of Total Responses
O20	2,176	33.3%	99	38.1%
O30	608	9.3%	62	23.8%
O43	83	1.2%	6	2.3%
O50	3,179	48.7%	66	25.4%
O99	488	7.5%	11	4.2%
Unknown	N/A	N/A	16	6.2%
Total	6,534	100%	260	100%

While I am unable to statistically analyze proportional NTEE categorization differences between the population and my sample, a cursory look demonstrates some difference between the two groups. Specifically, it appears that youth development programs (O50) are underrepresented in the sample while adult matching programs experience overrepresentation (O30). Nevertheless, in both the sample and the population, a combination of adult matching programs (O30), boys and girls clubs (O20), and youth development organizations (O50) make up about 90% of organizations in question: 87.3% and 91.3% respectively.

3.5.1 Representativeness of Respondent Group

Because this study uses a census sampling strategy, it is important to establish how representative the respondent group is of the population of youth development organizations. To do this, I ran a series of one-sample t-tests comparing known population averages of total revenue and total assets to those of my sample.

3.5.1.1 Total Revenue and Total Assets

The average total revenue (*CTotRev*) of the population of youth development organizations is $704,707. The sample average is $2,527,215. As shown in Table 4.2, the

95% confidence interval of the mean difference does not include zero. This means that the sample group's average total revenue is significantly different than that of the population, in this case much larger. That is, the sample to be analyzed is biased toward organizations with greater revenue, which are larger organizations. The average total assets (*Cassets*) of the population of youth development organizations is $1,173,641. The sample average is $5,282,706. As shown in Table 4.3, the 95% confidence interval of the mean difference does not include zero. This means that the sample group's average total assets are significantly different than that of the population. Again, they are much larger. Based on these two group attributes, the respondent group is not generalizable to the total population of youth development service-delivery nonprofits. Instead, it better represents larger organizations within this population.

Table 3-4: One Sample T-tests Total Revenue and Total Assets

	Test Value = 704707					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
CTotRev	2.448	237	.015	1822508.113	355979.58	3289036.65
Cassets	2.215	237	.028	4109065.168	454464.36	7763665.98

3.6 Missing Data Analysis and Imputation

After running descriptives and frequencies for each variable on original data (these frequencies and descriptives are presented in the following section) I ran a missing value analysis. As is typical of survey research, not all 260 cases in this study are complete. In fact, 31 of the 260 (11.9%) have some degree of missing information. Although there are not clear decision rules on whether to drop cases with missing values or impute missing data, it has been argued that if the number of cases with missing values is greater than 5% of the total number of cases, missing data cannot be ignored (Garson, 2015). I began assessing whether

imputation would be suitable for my dataset by seeing if my data's missing values were missing completely at random (MCAR). I found Little's MCAR test was significant (p = .002), indicating that missing values were not MCAR and should be imputed (Garson, 2015).

There are several ways to impute missing data. Historically popular, mean imputation – a process by which missing cases are completed with the mean of available cases – is no longer recommended as it causes a reduction in variance which can attenuate effect size (Garson, 2015). As such, this study uses multiple imputation, often the preferred method of data imputation. Multiple imputation ensures that results are not distorted by missingness by generating multiple values for each missing data point: a nod to the uncertainty around the correct value to impute. As such, multiple imputation generates multiple versions of a complete dataset. In this study, I generated five complete iterations of my dataset, the standard number of imputations, using the SPSS multiple imputation module tailored for categorical imputation.

This means that the regression analyses in this dissertation were conducted on five datasets which only differ in regards to imputed data points. This results in five sets of similar coefficients, model fit statistics, significances, etc. Subsequent results – with the exception of frequencies – presented in this dissertation are from these imputed data sets and, when possible, offer pooled results. The structural equation models, which require complete data, are performed on a single imputation, imputation 2. Consequently, the results from these analyses are more conventional, offering one set of model fit, coefficient, and significance statistics.

3.7 Descriptive Statistics and Scale Validation

This section contains frequencies on original unimputed data as well as reliability and validity tests on primary research variables measured by composite scales. Descriptives are highlighted in text and related tables can be located in Appendix A.

3.7.1 Dependent Variables

Table 3-5: Frequency of Purposeful Performance Information Use

During the past year, how often did you use performance information to…?

Item	Never	Daily	Weekly	Monthly	Quarterly	Annually	Total
Make personnel decisions	27 (11%)	27 (11%)	37 (15%)	44 (18%)	66 (26%)	50 (20%)	251 (100%)
Make strategic decisions	11 (4%)	31 (12%)	29 (11%)	52 (21%)	72 (29%)	58 (23%)	253 (100%)
Make day-to-day management decisions	29 (12%)	87 (35%)	46 (18%)	59 (23%)	26 (10%)	5 (2%)	252 (100%)
Allocate resources	10 (4%)	29 (12%)	29 (12%)	74 (29%)	41 (16%)	69 (27%)	252 (100%)
Learn how to make my organization more efficient	21 (8%)	34 (13%)	36 (14%)	52 (21%)	67 (27%)	42 (17%)	252 (100%)
Total	138 (11%)	208 (17%)	177 (14%)	281 (22%)	272 (22%)	224 (18%)	1,260 (100%)

In regards to purposeful performance information use, surveyed nonprofit executives were most inclined to use performance information quarterly to make personnel decisions (26%), quarterly to make strategic decisions (29%), daily to make day-to-day decisions (35%), monthly to allocate resources (29%), and quarterly to make their organization more efficient (27%). Used as an additive scale ranging from 0-25, purposeful performance information, used as an additive scale ranging from 0-25 in analysis, has a mean of 13.36 and a standard deviation of 6.04. It is worth noting that this variable achieves good distribution across response categories: respondents do not appear to be straight-lining (i.e. working through the survey checking the same option for each item).

Regarding political performance information use, nonprofit executives were most inclined to use performance information monthly to communicate their organizational success to stakeholders (33%), daily to advocate for resources (25%), and daily to explain the value of their organization to the public (28%). Used in analysis as an additive scale ranging from 0-15, political performance information use has a mean of 9.18 and a standard deviation of 3.56.

Table 3-6: Frequency of Political Performance Information Use

During the past year, how often did you use performance information to…?

Item	Never	Daily	Weekly	Monthly	Quarterly	Annually	Total
Communicate my organizational success to stakeholders	5 (2%)	31 (12%)	23 (9%)	82 (33%)	77 (31%)	33 (13%)	251 (100%)
Advocate for resources to support my organization	8 (3%)	63 (25%)	45 (18%)	60 (24%)	44 (17%)	33 (13%)	253 (100%)
Explain the value of my organization to the public	8 (3%)	71 (28%)	55 (22%)	50 (20%)	45 (18%)	24 (9%)	253 (100%)
Total	21 (3%)	165 (22%)	123 (16%)	192 (25%)	166 (22%)	90 (12%)	757 (100%)

Because both dependent variables are combined additive scores, it is of particular concern that their measurements demonstrate two distinct factors (i.e. purposeful and political). To test for this structure, I ran a principal components analysis with a varimax rotation. Below is the generated component matrix. As demonstrated by the simple factor structure (i.e. factor loadings above 0.7 with cross loading below 0.4), purposeful and political information use achieve both convergent and divergent validity across all items.

Table 3-7: Dependent Variable Factor Analysis

	Component	
	1	2
Purposeful_Personnel	.718	.338
Purposeful_Strategic	.778	.244
Purposeful_DaytoDay	.779	.310
Purposeful_AllocateResources	.814	.137
Purposeful_Efficient	.769	.276
Political_OrgSuccesstoStakeholders	.264	.773
Political_Resources	.240	.839
Political_ValueofOrgtoPublic	.269	.838

3.7.2 Independent Variables

3.7.2.1 Public Service Motivation

Table 3-8: Level of Public Service Motivation

To what extent do you agree with the following statements?

Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Meaningful public service is very important to me	1 (<1%)	0 (0%)	5 (2%)	67 (26%)	184 (72%)	257 (100%)
I am often reminded by daily events about how dependent we are on one another	1 (<1%)	3 (1%)	18 (7%)	107 (42%)	127 (50%)	256 (100%)
Making a difference in society means more to me than personal achievements	1 (<1%)	1 (<1%)	15 (6%)	72 (28%)	166 (65%)	255 (100%)
I am prepared to make enormous sacrifices for the good of society	2 (1%)	8 (3%)	37 (14%)	132 (51%)	78 (30%)	257 (100%)
I am not afraid to go to bat for the rights of others even if it means I will be ridiculed	2 (1%)	6 (2%)	24 (9%)	112 (44%)	113 (44%)	257 (100%)
Total	7 (1%)	18 (1%)	99 (8%)	490 (38%)	668 (52%)	1,285 (100%)

Overall, respondents demonstrated a high degree of public service motivation. The

majority of participants strongly agreed that meaningful public service was important to them

(72%); that they were reminded by daily events how dependent we are on one another (50%);

and that making a difference in society meant more than personal achievements (65%).

Respondents felt prepared to make enormous sacrifices for the good of society (30%), and

were not afraid to go to bat for the rights of others even if they were ridiculed for it (44%).

While this scale is previously validated, I did run a Cronbach's to reaffirm validity and, as

demonstrated by alpha's 0.8 and above, this scale performed well above the 0.7 cut-off for

confirmatory use (Garson, 2012). Because index[1] scores were skewed (1.570), I recoded the

index scores into a bivariate measure, 1-3 became 0 and 4-5, 1.

Table 3-9: Cronbach's Alpha for Public Service Motivation

Imputation Number	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Original data	.808	.816	5
1	.809	.816	5
2	.808	.816	5
3	.812	.821	5
4	.811	.819	5
5	.810	.818	5

3.7.2.2 Perceived Social Impact

Table 3-10: Level of Perceived Social Impact

To what extent do you agree with the following statements?

Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
I feel that my work makes a positive difference in other people's lives	1 (<1%)	0 (0%)	0 (0%)	38 (15%)	218 (85%)	257 (100%)
I am very aware of the ways in which my work is benefitting others	1 (<1%)	0 (0%)	3 (1%)	56 (22%)	196 (77%)	256 (100%)
I am very conscious of the positive impact my work has on others	1 (<1%)	0 (0%)	8 (3%)	58 (23%)	189 (74%)	256 (100%)
I have a positive impact on others in my work on a regular basis	1 (<1%)	0 (0%)	9 (4%)	80 (31%)	166 (65%)	256 (100%)
Total	4 (<1%)	0 (0%)	20 (2%)	232 (23%)	769 (75%)	1,025 (100%)

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[1] *PSM Index* was calculated as the average of the five item responses. Full descriptives can be found in Appendix A.

Nonprofit executives had high perceptions of their social impact. Overwhelmingly, respondents felt that their work made a positive difference in the lives of others (85%), were very aware of the ways that their work benefitted others (77%), and were very conscious of the positive impact that their work had on others (74%). While this scale is previously validated, I did run a Cronbach's to reaffirm validity and, as demonstrated by alpha's 0.8 and above, this scale performed well above the 0.7 cut-off for confirmatory use (Garson, 2012). Because responses were skewed (2.746), I recoded the index scores[2] into a bivariate measure: below 3 became 0, and above 3, 1.

Table 3-11: Cronbach's Alpha for Perceived Social Impact

Imputation Number	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Original data	.910	.915	4
1	.912	.917	4
2	.910	.916	4
3	.911	.916	4
4	.909	.914	4
5	.911	.916	4

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[2] *PSI Index* was calculated as the average of the four item responses. Full descriptives can be found in Appendix A.

3.7.2.3 Developmental Culture

Table 3-12: Presence of Developmental Culture

To what extent do you agree with the following statements?

Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
My organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks...	4 (2%)	32 (12%)	52 (20%)	126 (49%)	43 (17%)	257 (100%)
The glue that holds my organization together is a commitment to innovation...	6 (2%)	37 (14%)	83 (32%)	95 (37%)	37 (14%)	258 (100%)
The staff shows great readiness to meet new challenges	3 (1%)	17 (7%)	35 (14%)	139 (54%)	64 (25%)	258 (100%)
Total	13 (2%)	86 (11%)	170 (22%)	360 (47%)	144 (19%)	773 (100%)

The bulk of responding nonprofit executives agree that their organization is

entrepreneurial (49%), committed to innovation (37%), and ready to meet new challenges

(54%). As with purposeful and political performance use, responses to support capacity

demonstrate good distribution across response categories. While this scale is previously

validated, I did run a Cronbach's to reaffirm validity and, as demonstrated by alpha's 0.8 and

above, this scale performed well above the 0.7 cut-off for confirmatory use (Garson, 2012)

and is normally distributed.[3]

Table 3-13: Cronbach's Alpha for Developmental Culture

Imputation Number	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Original data	.812	.812	3
1	.814	.814	3
2	.816	.816	3
3	.816	.816	3
4	.814	.814	3
5	.811	.811	3

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[3] *Culture Index* is calculated as the average of the three item responses. Full descriptives can be found in Appendix A.

3.7.2.4 Support Capacity

Table 3-14: Level of Support Capacity

To what extent do you agree with the following statements?

Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
My organization has committed adequate resources (i.e. time, people, money) to be used in the measurement of organizational performance	12 (5%)	72 (28%)	29 (11%)	98 (38%)	45 (18%)	256 (100%)
My organization can readily relate outputs to organizational operations	5 (2%)	30 (12%)	39 (15%)	131 (51%)	50 (20%)	255 (100%)
My organization has staff capable of collecting performance information in...	4 (2%)	37 (14%)	27 (11%)	125 (49%)	64 (25%)	257 (100%)
My organization has staff capable of thoroughly analyzing performance data	11 (4%)	57 (22%)	37 (14%)	100 (39%)	51 (20%)	256 (100%)
My organization has adequate information technology for performance measure...	20 (8%)	53 (21%)	53 (21%)	90 (36%)	37 (15%)	253 (100%)
Total	52 (4%)	249 (19%)	185 (14%)	544 (43%)	247 (19%)	1,277(100%)

In exploring support capacity, while a substantial amount of nonprofit executives

disagree to some extent that their organization has adequately committed resources in the

measurement of organizational performance (33%), the majority of respondents agree (to

varying degrees) that their organization is adequately resourced in regards to performance

measurement (56%). Further, 51% of respondents agree that their staff can readily relate

outputs to operations (an additional 18% strongly agree); 49% agree that staff is capable of

collecting performance information in a timely way; 39% agree that staff is capable of

thoroughly analyzing performance; and 36% agree that IT is adequate for performance

measurement (36%). As with purposeful and political performance use, responses to support

capacity demonstrate good distribution across response categories and the index score[4] is

normally distributed.

Table 3-15: Cronbach's Alpha for Support Capacity

Imputation Number	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Original data	.858	.860	5
1	.854	.857	5
2	.849	.852	5
3	.851	.854	5
4	.850	.853	5
5	.851	.854	5

Table 3-16: Support Capacity Factor Analysis

	Component
	1
SupportCap_AdequateResources	.777
SupportCap_RelateOutputsandOperations	.775
SupportCap_CollectTimely	.844
SupportCap_StaffAnalyze	.811
SupportCap_AdequateIT	.798

While the items used to measure support capacity in this study have demonstrated

conceptual validity in previous work (Berman & Wang, 2000; Kroll, 2015), this is the first

test of these items for use in a scale. As demonstrated by alpha's 0.8 and above, this scale

performed well above the 0.7 cut-off for confirmatory use (Garson, 2012). With a suitably

high Cronbach's alpha establishing convergent validity, I then ensured divergent validity in a

principle components analysis with varimax rotation. With clean factor loadings (items

loading at or above 0.70 with cross loadings below 0.40 for both original and imputed data)

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[4] *SupCap Index* is calculated as the average of the five item responses. Full descriptives can be found in Appendix A.

(Garson, 2012) and proof of unidimensionality (with rotation the analysis still showed a single component), these support capacity items hold together suitably for use as an index.

In addition to calculating Cronbach's alpha and running a factor analysis, I include support capacity as a latent variable measured by five indicator items in several structural equation measurement models through SPSS' structural equation modeling program AMOS. These can be seen in Appendix C and in the following chapter, but summarized, these models empirically show the appropriateness of using the five support capacity items as a composite measure for organizational support capacity.

3.7.2.5 Stakeholder Involvement

The following charts offer descriptive results for stakeholder involvement. It is important to note that of the 260 responding executives, 87% reported working in partnership with other organizations (n=223).

Table 3-17: Stakeholders Requiring Performance Measurement

Do the majority of your [type] stakeholders require your organization to use performance measurement?

Stakeholder Type	External	Internal	Partner
Yes	181 (71%)	155 (61%)	119 (54%)
No	75 (29%)	101 (39%)	102 (46%)
Total	256 (100%)	256 (100%)	221 (100%)

It appears that regardless of the stakeholder type, stakeholder groups regularly require nonprofits to use performance measurement. Surveyed nonprofit executives reported that this is most common for external stakeholder groups (71%) than it is for internal stakeholders (61%) and partners (54%).

Table 3-18: Stakeholder Support for Performance Measurement

Overall, how supportive are the following groups of the use of performance measurement within your organization?

Stakeholder Type	Unsupportive	Somewhat unsupportive	Neither unsupportive nor supportive	Somewhat supportive	Supportive	Total
External	3 (1%)	8 (3%)	40 (16%)	61 (24%)	144 (56%)	256 (100%)
Internal	1 (<1%)	6 (2%)	29 (11%)	88 (34%)	132 (52%)	256 (100%)
Partner	0 (0%)	4 (2%)	65 (29%)	61 (28%)	91 (41%)	221 (100%)

Following a similar pattern of requirement, all explored stakeholder groups were supportive of the use of performance measurement within surveyed nonprofits. 56% of those responding reported external stakeholders as being supportive of the use of performance measurement, 52% of internal stakeholders, and 41% of organizational partners. The lack of variance in support level led me to recode these support scales for internal and external support into dummy variables for use in subsequent models. A response of 0-2 became a 0, and 3-4, a 1,

Table 3-19: Community Partnership Activity Level

How active is your organization in this/these partnerships?

Not Active	Somewhat Active	Active	Very Active	Extremely Active	Total
33 (13%)	30 (12%)	60 (24%)	88 (35%)	43 (17%)	254 (100%)

To measure level of activity in community partnerships, I recoded two variables into one measure. For use in analysis, I collapsed the items which 1) asked whether respondents were part of a community partnership with 2) a report of how active participating organizations were in those partnerships into a single 5-point measure. In essence, a respondent who answered that they did not participate in a partnership was coded as "not active". No participants reported being part of a partnership but not being active, the lowest item on the original scale. This allowed me to keep the reported codes for activity level.

3.7.3 Establishing Divergent Validity among Concepts

Because many of the concepts central to this study are highly related, I explored the relationships across items and concepts in my survey several ways: an itemized factor analysis and variance inflation factors. Using a principle component analysis with varimax rotation, the factor loadings in the itemized factor analysis (Table 3-20) show evidence of convergent and divergent validity for study variables. Component 2 is unequivocally support capacity; component 3, perceived social impact; component 4, public service motivation; component 5, goal clarity; and component 6, developmental culture. Components 1, 7, and 8 do show some evidence of cross-loading. In particular, leadership support loads with two stakeholder support items in component 7. Additionally, political information use cross-loads on components 1 and 8: with purposeful performance information use, and community partnership activity level. This is only problematic, however, if cross loading is a definitional tautology. In this case, cross loading may be causal: the constructs in question (information use and stakeholder involvement) are definitionally different. While these overlaps are not ideal, leadership support is a well-documented driver of information use and is treated as a unique concept in related research. Furthermore, given the results of the aforementioned factor analysis on information use types and the treatment of purposeful and political use in the literature, the notion that purposeful and political use are conceptually distinct holds. In essence, evidence of cross-loading is not problematic to the theoretical integrity of the study.

Nevertheless, despite conceptual differentiation, analyses may suffer from multicollinearity issues. To assess whether or not certain variables should be collapsed or excluded, I ran variance inflation factors for each variable in the model. As demonstrated by Table 3-21, multicollinearity is not an issue: VIFs do not approach 5, the typical threshold

indicated problematic collinearity (Garson, 2014a). A full correlation matrix is included in

Appendix A which further confirms this.

Table 3-20: Factor Analysis Rotated Component Matrix

	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SupportCap_AdequateResources	.009	.707	.096	.064	.200	.074	.099	.202
SupportCap_RelateOutputsandOperations	.110	.688	.026	.127	.231	.101	.195	.047
SupportCap_CollectTimely	.039	.812	.134	.073	.103	.006	.137	.073
SupportCap_StaffAnalyze	.125	.823	.054	.034	.002	.051	.056	-.090
SupportCap_AdequateIT	.098	.770	.071	-.065	.057	.072	.126	.017
GoalClarity_MissionClear	.058	.133	.139	.201	.751	.199	.017	.104
GoalClarity_ExplainGoals	.094	.141	.121	.026	.831	-.018	.125	.036
GoalClarity_ClearlyDefined	.100	.241	.122	.173	.786	.091	.112	-.033
StakeInvolve_ExternalHowSupp	.065	.202	.075	-.013	.027	-.016	.841	.154
StakeInvolve_InternalHowSupp	.139	.344	.117	.013	.279	.147	.698	.011
StakeInvolve_CommPartnershipActive	.029	.000	-.042	.227	-.115	.141	.219	.694
LeadershipSupport	.356	.299	.177	.175	.100	.004	.552	.054
DevCulture_EntreprenurialTakeRisks	.075	.136	.111	.178	.021	.812	.121	.118
DevCulture_CommitInnovateandDev	.099	.054	.096	.154	.084	.841	-.033	.072
DevCulture_ReadyChallenge	.026	.076	.189	.127	.126	.779	.008	-.084
PSM_MeaningfulServiceImportant	.026	.050	.127	.725	.227	.128	.044	.163
PSM_RemindedDailyEvents	.006	.000	.002	.750	.054	.151	.004	.184
PSM_MakingDiffinSociety	.079	.046	.211	.726	.154	.107	.005	-.150
PSM_Sacrifices	.153	-.034	.228	.711	.014	.159	.034	-.036
PSM_Ridiculed	.096	.156	.251	.671	-.015	-.013	.029	.000
PSI_PositiveDiff	.031	.115	.797	.221	.105	.126	.075	.088
PSI_WorkBenefitOthers	.037	.088	.877	.172	.137	.089	.121	.038
PSI_PosiImpactWorkonOthers	.077	.088	.898	.149	.121	.093	.067	.068
PSI_RegularBasis	.086	.098	.802	.225	.057	.142	.018	-.024
PIU_Purposeful_Personnel	.737	.064	.056	.032	.077	.088	.094	.198
PIU_Purposeful_Strategic	.795	.029	-.008	.043	.019	.057	.084	.012
PIU_Purposeful_DaytoDay	.815	.121	.137	.063	.085	.003	.039	.043
PIU_Purposeful_AllocateResources	.799	.000	-.030	.136	.037	.029	.037	-.071
PIU_Purposeful_Efficient	.776	.076	.008	.115	-.052	.091	.117	.100
PIU_Political_OrgSuccesstoStakeholders	.519	.232	.077	-.029	.185	.009	-.097	.473
PIU_Political_Resources	.466	.132	.180	-.022	.179	.002	.082	.626
PIU_Political_ValueofOrgtoPublic	.547	.107	.180	-.097	.207	-.112	-.029	.533

Table 3-21: Variance Inflation Factors

	Collinearity Statistics	
	Tolerance	VIF
Support Capacity	.665	1.503
Goal Clarity	.722	1.385
Culture	.786	1.273
PSM	.715	1.398
PSI	.712	1.404
External Support	.574	1.742
Internal Support	.493	2.029
Partnership Activity	.901	1.109
FTEs	.895	1.117

3.8 Chapter 3 Summary and Upcoming Chapter

To summarize, this study uses a survey to test hypotheses about executive performance information use in nonprofit youth-focused service delivery organizations. Using the 2014 NCCS Core Data file, I identified a total population of 6, 534 organizations across various youth development organization types. I then conducted a pre-test of the proposed survey with eight nonprofit professionals from January 4th through January 13th and revised survey items based on the feedback from the pre-test. I then disseminated the survey to 1,496 possible participants via Qualtrics. My response rate was 17.4%, n=260, after imputation. After running several tests on the representativeness of my response group, I discovered that my sample is larger than the population average, suggesting that findings from this study more likely generalize to nonprofits with greater assets and higher revenue.

Descriptive analysis shows that dependent variables are normally distributed and achieve satisfactory convergent and divergent validity for use as additive composite scores. Tests of scales for independent variables – support capacity, developmental culture, public service motivation, perceived social impact, and goal clarity – achieve suitable divergent and convergent validity. As such, support capacity and developmental culture both retain their intended 5-point coding. Public service motivation, perceived social impact, goal clarity, leadership support, and internal and external stakeholder support, on the other hand, are recoded into bivariate dummy variables to address skew.

In Chapter 4, I analyze my survey data using stepwise and comprehensive ordinary least squares models as well as a series of partial structural equation models. The chapter closes with a section on hypothesis testing, moving toward the final discussion and conclusion chapter.

CHAPTER 4. ANALYSES AND RESULTS

4.1 Introduction

The previous chapter presented initial descriptive data on variables included in this study. This early investigation demonstrated adequate convergent and divergent validity among constructs and provides rationale for recoding variables when appropriate. Again, independent variables public service motivation, perceived social impact, and internal and external stakeholder support are measured with bivariate dummy variables marking high/low levels of each variable as absolute skew fell above the 1.0 cutoff for non-normal distribution (Garson, 2014a). Independent variables support capacity and developmental culture are used as averaged index scores, each item measured on a 5-point scale. Partnership activity level, a single item, is also measured on a 5-point scale. Control variables goal clarity and leadership support are measured with bivariate dummy variables, and the square root of full time employees is used to measure organizational size. Dependent variables purposeful and political use are both measured with additive scales, ranging 0-25 and 0-15 respectively, and are normally distributed.

This chapter has three sections. First, I present stepwise and comprehensive ordinary least squares models of purposeful and political information use. Second, after teasing out the strongest relationships between variables, I build partial structural equation models to further interrogate those variable relationships for which the OLS models did not provide satisfactory results. Third, I link these analyses to the hypotheses generated in Chapter 2 in the hypothesis testing and discussion section.

4.2 Ordinary Least Squares Models

4.2.1 Purposeful Information Use

To analyze the drivers of purposeful information use, I use a series of progressively inclusive multiple regression models. To do this, I categorize my independent and control variables by unit of analysis (e.g. individual, organizational, and environmental) and run partial models on each subset of the variables. Those variables which are significant in these partial models are subsequently included in a more comprehensive full model. Model 1 includes individual level independent variables: dichotomous measures of public service (PSM) motivation, perceived social impact (PSI), the interaction of PSM and PSI, and leadership support. Model 2 adds organizational level predictor variables: a dichotomous measure of goal clarity; index measures of support capacity and developmental culture; the interaction of support capacity and developmental culture; and the square root of full time employees. Model 3 folds in environmental level independent variables: dichotomous measures of internal and external stakeholder support of performance measurement, and a scalar measure of activity level within community based partnerships.

Model 4, discussed later, is a comprehensive model of all variables regardless of previous model significance entered with variables entered in a single block rather than stepwise. I include this model as a point of comparison as this "standard method will allow [the researcher] to test hypotheses about the model as a whole; if that is the goal, then that is what should be used" (Meyers, Gamst, & Guarino, 2013, pp. 361–62). Essentially, by including stepwise and complete block models, I offer a more parsimonious model achieved by trimming and a comprehensive model for comparison. Lastly, because this study uses

imputed data, tables in this section include model summaries and coefficients for original

data, each imputed data set, and pooled statistics when available.

Table 4-1: Purposeful Use Model Summaries

Imputation Number	Model 1			Model 2			Model 3		
	R Sq.	Adj. R Sq.	Std. Error	R Sq.	Adj. R Sq.	Std. Error	R Square	Adj. R Sq.	St. Error
Original data	.139	.124	5.62256	.152	.129	5.61022	.154	.136	5.61132
1	.140	.127	5.57160	.170	.151	5.49507	.163	.147	5.50634
2	.122	.108	5.64493	.159	.139	5.54572	.153	.137	5.55282
3	.139	.126	5.59384	.168	.148	5.52295	.158	.141	5.54556
4	.129	.115	5.59986	.161	.141	5.51637	.158	.141	5.51670
5	.137	.124	5.57952	.162	.142	5.51983	.158	.141	5.52345

The R square values indicate that Model 1 accounts, on average, for 13% of the

variance in our dependent variable. Models 2 and 3 each account for 16%. The incremental

increase in adjusted R squared also indicates a decrease in standard error suggesting that of

these three models, Model 3 minimizes the variation in purposeful performance information

use not explained by the model: it fits the data best.

The coefficients table below shows pooled coefficients and statistical significance.

Coefficients tables showing estimates across imputations are found in Appendix B. I will

refer to pooled estimates unless otherwise noted. In Model 1, leadership support is shown to

be a statistically significant positive predictor of purposeful performance information use (p

$< .001$ across imputations) at the pooled level. None of the other variables achieve statistical

significance at the model level save for the interaction of PSM and PSI in imputation 5. Still,

this term does not achieve pooled significance and as such, is not included in Models 2 and 3.

Table 4-2: Purposeful Model Pooled Coefficients

			Model 1 Coefficients	**Mode 2** Coefficients	**Model 3** Coefficients	**Model 4** Coefficients
Individual	Pooled	(Constant)	9.118	5.620	4.665	7.246
		Leader Support	5.417***	4.785***	4.900***	4.258**
		PSM	-4.708			-5.357
		PSI	-1.472			-1.866
		PSM*PSI	6.004			5.873
Organization	Pooled	Goal Clarity		2.506*	2.793*	2.472*
		Sqrt FTEs		-.092		-.079
		Support Capacity		-.292		-.635
		Culture		.078		-.383
		SupCap*Cult		.323		.419
Enviro	Pooled	External Support			.039	-.152
		Internal Support			.430	.403
		Activity			.676*	.665*

* = p < 0.05; ** = p < 0.01; *** = p < 0.001

In Model 2, leadership support maintains its significance at the p < 0.001 level and goal clarity is shown to be a positive significant predictor. No other organizational level variables – support capacity, developmental culture, their interaction, and organizational size (FTEs) – are found to be significant in pooled or model estimates and as such, are not included in further OLS models.

Because hypothesis 11 suggests that of the dimensions of support capacity, staff training will be the strongest predictor of purposeful performance information use, I also ran Model 2 with the support capacity items broken out. These tables are included in the Appendix, but can be summarized by the following: This model accounts for approximately 18% of the variance in purposeful performance information use, about 2% more than the model measuring support capacity as an index. It also shows slight improvements in standard error. Insofar as how support capacity items performed in the regression, none achieved pooled statistical significance, and at the model level, only staff capable of analyzing performance information is significant and only in imputation 5. In addition, it is worth noting that when the support capacity items are entered separately, development culture is

significant in imputations 2 and 3, but does not achieve pooled significance. I further explore

the instability between support capacity, developmental culture, and purposeful use in the

following section using structural equation modelling.

In Model 3, both leadership support and goal clarity maintain statistical significance.

Furthermore, while internal and external support are not shown to be significant predictor

variables of purposeful use, community partnership activity level is. These coefficients

interpreted then, indicate that executives who demonstrate high levels of support for

performance measurement and strongly believe that their organization has clear goals

demonstrate an additional 4.900 and 2.793 points of purposeful performance information use

respectively (on a scale of $0 - 25$) as compared to executives with low levels of support and

organizations with less clear goals. In addition, a one unit increase in the level of

collaborative activity is associated with a 0.676 point increase in purposeful use.

Table 4-3: Purposeful Model 4 Summary

Imputation Number	R	R Square	Adjusted R Square	Std. Error of the Estimate
Original data	.433[a]	.187	.142	5.55896
1	.439[b]	.192	.153	5.48632
2	.440[c]	.193	.154	5.49639
3	.444[b]	.197	.158	5.49104
4	.441[b]	.194	.155	5.47108
5	.442[d]	.195	.156	5.47505

Model 4 includes all variables in individual, organizational, and environmental levels:

dichotomous measures public service motivation, perceived social impact, and their

interaction; leadership support; goal clarity; internal and external stakeholder support of

performance measurement; organizational size measured by the square root of full time

employees; and scalar measures community partnership activity level; support capacity, and

developmental culture. As with Model 3, partnership activity level, leader support, and goal

clarity are all significant predictors of purposeful performance information use.

Of these significant independent variables, leadership support has the largest effect size: a leader who is highly supportive of performance measurement is associated with a 4.258 point increase in purposeful performance information use as compared to a leader who demonstrates low support for performance measurement. High goal clarity is associated with a 2.472 point increase in purposeful performance information us as compared to organizations with low levels of goal clarity. Lastly, a one unit increase in partnership activity level is associated with 0.665 unit increase in purposeful use. According to the R squared value, this model accounts for approximately 18% of the variance in purposeful use. As compared to Model 3, an increased adjusted R squared and a decreased standard error demonstrate improved model fit, however this is likely attributable to the additional variables in the model, in regards to variable significance and effect size, these models converge.

4.2.2 Political Information Use

I approach models of political information use the same way I did purposeful use, with a series of progressively more inclusive regression models with independent and control variables categorized by unit of analysis. Those variables which find significance in a partial model are subsequently included in the next, more comprehensive, model. Model 1 includes individual level independent variables: dichotomous measures of public service (PSM) motivation, perceived social impact (PSI), the interaction of PSM and PSI, and leadership support. Model 2 folds in organizational level predictor variables: a dichotomous measure of goal clarity; index measures of support capacity and developmental culture; the square root of full time employees; and the interaction of support capacity and developmental culture. Model 3 incorporates environmental level independent variables: dichotomous measures of internal and external stakeholder support of performance measurement, and a scalar measure

of activity level within community based partnerships. Model 4 is a comprehensive model of all variables pertinent to the study regardless of previous statistical significance. Again, I include this standard single block variable entry as a way to test hypotheses about the model as a whole (Meyers et al., 2013), and provide a comparison to the trimmed model.

Table 4-4: Political Use Model Summaries

Imputation Number	Model 1			Model 2			Model 3		
	R Sq.	Adj. R Sq.	Std. Error	R Sq.	Adj. R Sq.	Std. Error	R Square	Adj. R Sq.	St. Error
Original data	.083	.068	3.44514	.156	.122	3.30696	.192	.168	3.23342
1	.084	.070	3.40864	.158	.127	3.30176	.180	.157	3.24533
2	.081	.067	3.40874	.155	.125	3.30021	.175	.152	3.24941
3	.084	.069	3.39366	.159	.129	3.28349	.182	.159	3.22561
4	.071	.057	3.42166	.154	.124	3.29729	.181	.159	3.23130
5	.085	.071	3.39370	.161	.130	3.28291	.186	.163	3.21973

The R square values indicate that Model 1 accounts for approximately 8% of the variance in political performance information use, Model 2 accounts for approximately 16%, and Model 3 accounts for approximately 18%. As with purposeful use models, the adjusted R squared values increase across models suggesting incremental improvement in model fit.

Referring to the coefficients table, in Model 1, both leadership support and the interaction between PSM and PSI are statistically significant predictors of political performance information, at the model and pooled levels. In Model 2, leadership support loses its significance while PSM and the interaction between PSM and PSI are significant as is goal clarity. In Model 3, previous variables – PSM, PSM*PSI, and goal clarity – maintain their significance alongside additional environmental variables where internal support and community partnership activity level are shown to be statistically significant predictors of political use.

Table 4-5: Political Models Pooled Coefficients

			Model 1 Coefficients	Mode 2 Coefficients	Model 3 Coefficients	Model 4 Coefficients
Individual	Pooled	(Constant)	7.601	5.948	4.808	5.543
		Leader Support	1.954**	1.179		.578
		PSM	-3.182	-3.703	-4.290*	-4.237*
		PSI	-.887	-1.106	-1.040	-1.070
		PSM*PSI	4.181*	4.282*	5.018*	4.745*
Organization	Pooled	Goal Clarity		1.651*	2.077**	1.637*
		Sqrt FTEs		.014		.005
		Support Capacity		.378		.007
		Culture		-.238		-.609
		SupCap*Cult		.151		.238
Envir	Pooled	External Support			.449	.166
		Internal Support			1.474*	.969
		Activity			.619***	.601***

* = p < 0.05; ** = p < 0.01; *** = p < 0.001

This means that in Model 3, for every increase in the level of community partnership activity, there is an associated 0.601 point increase in political use (on a scale of $0 - 15$). There is also a positive relationship between internal support of performance measurement and political use – for executives reporting high levels of internal stakeholder support, there is an associated increase of .969 political use points as compared to executives reporting low levels of internal stakeholder support. Similarly, high goal clarity is associated with an increase of 1.637 political use points as compared to organizations with low goal clarity.

The significance of the interaction between PSM and PSI demonstrates that exhibiting high levels of PSM *and* PSI is a significant predictor of political information use. As demonstrated by the following graphic display, having a high level of PSI appears to moderate the negative effect of high PSM on political information use: it makes it less severe. Data are pulled from imputation 2. The coefficients listed in the model hint at this relationship: high PSM in isolation has a negative impact on political use.

Figure 4-1: Political Model 3 Graphic Display of PSM and PSI Interaction
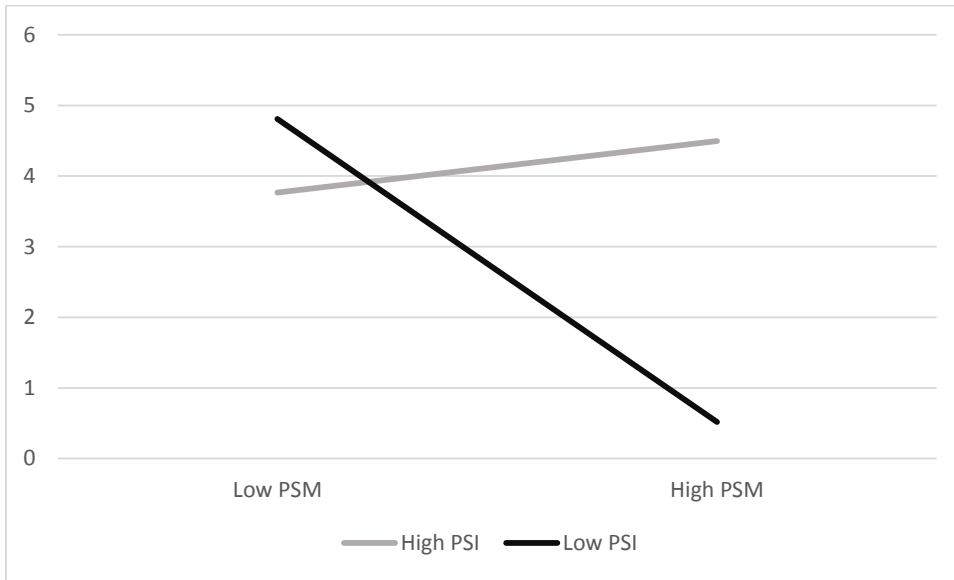
Model 4 includes all variables at individual, organizational, and environmental levels: dichotomous measures of leadership support; PSM, PSI, and their interaction; goal clarity; and internal and external stakeholder support of performance measurement; as well as index measures of support capacity, developmental culture, a scalar measure of the level of activity in community partnerships, and organizational size as measured by the square root of full time employees. As demonstrated by the R square value, this model accounts for approximately 21% of the variance in political performance information use.

Table 4-6: Political Model 4 Summary

Imputation Number	R	R Square	Adjusted R Square	Std. Error of the Estimate
Original data	.463[a]	.214	.171	3.21117
1	.458[b]	.210	.171	3.21767
2	.452[c]	.205	.166	3.22222
3	.455[b]	.207	.168	3.20822
4	.458[b]	.209	.171	3.20752
5	.462[d]	.214	.176	3.19630

Compared to Model 3, increased adjusted R square and decreased standard errors demonstrate a better model fit, but again, this is likely attributable to the presence of additional variables in the model. In this full model, PSM, the interaction between PSM and

PSI, goal clarity, and community partnership activity level are all significant positive predictors of political performance information use. High goal clarity is associated with a 1.467 – 1.853 unit increase in political performance information us as compared to organizations with low levels of goal clarity. Furthermore, a one unit increase in partnership activity level is associated with 0.587 - 0.681 unit increase in political information use. As with Model 3, the presence of high PSM *and* PSI does have an overall negative effect on political information use, but the presence of high PSI appears to moderate the stronger negative effect of high PSM in isolation.

Figure 4-2: Political Model 4 Graphic Display of PSM and PSI Interaction
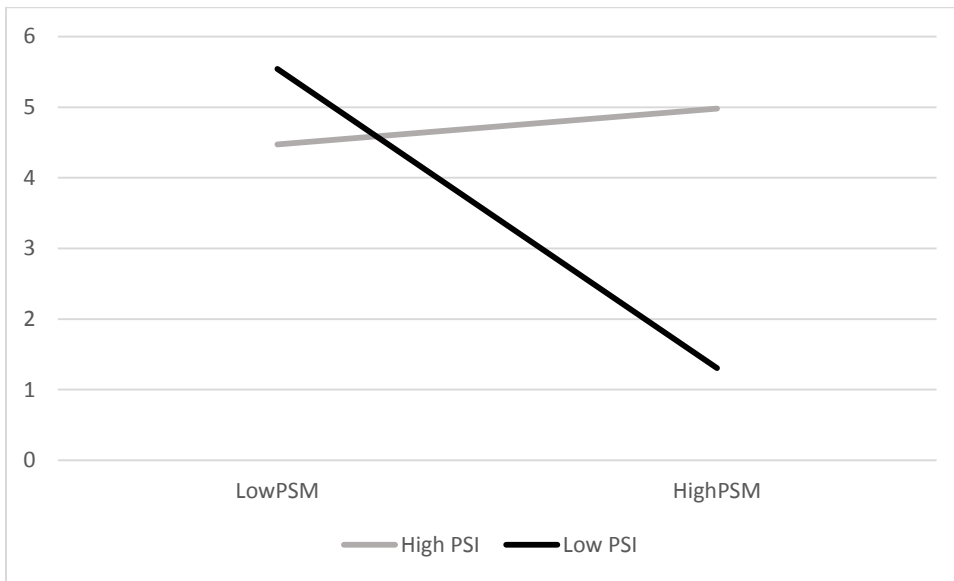
4.3 Structural Equation Models

In addition to OLS, I performed a structural equational modeling (SEM) analysis of purposeful and political use using the statistical program SPSS and AMOS version 22. I chose SEM because it offers several advantages to traditional regression pertinent to this study: use of confirmatory factor analysis to reduce measurement error, ability to model mediating variables (i.e. support capacity and developmental culture), and the ability to test a

model with multiple dependent variables (i.e. purposeful and political performance information use) (Garson, 2014b).

This section uses a series of partial models focusing specifically on those variables for which findings from the OLS models were inconsistent or insignificant – specifically support capacity, developmental culture, and stakeholder involvement – to ascertain whether their lack of significance is related to some underlying measurement error. I do not present a comprehensive structural equation model of purposeful and political performance information use for several reasons. First, many of the independent variables used in the OLS models are left skewed, causing me to recode them as dummy variables for inclusion in the OLS models. Skew was strongest in PSM, PSI, goal clarity, and leadership support. SEM does allow researchers to include dummy variables in analyses, but they must be modeled exogenously. This prevents me from testing the mediation relationship between PSM and PSI or performing any meaningful structural analysis among variables iteratively. In short, running a comprehensive model in SEM including all dummied variables wouldn't actually test the hypothesized comprehensive model. Skew can be addressed by using an alternative estimation method, like asymptotically distribution-free estimation or elliptical distribution theory. However, my sample size (N=260) is not large enough to ensure accuracy with these estimation methods. ADF requires samples sizes between 200 and 500 for simpler models, and EDT works best for sample sizes in the thousands (Garson, 2014b).

In SEM, maximum likelihood estimation (ML) is the convention estimation method. Not only is ML known for having lower standard errors than other methods of estimation, it does not assume uncorrelated error terms. While maximum likelihood is a better fit for large sample sizes, it is common practice to use this estimation method for small and medium

samples (Garson, 2014b). However, ML does require that variables be normally distributed and indicators are continuous interval level measurements. In these models, indicator variables are ordinal, but they do meet the inclusion requirement of having five categories and being within the plus-or-minus 1.5 range for acceptable kurtosis (Garson, 2014b). Severe skew in the model can inflate chi-square, causing models to appear worse than they actually are and increasing the likelihood of type I error (rejecting a model which need not be rejected) (Garson, 2014b; Kline, 2005). To ensure that skew was not problematic, I ran each partial model using ADF and ML estimation to see if the two differed substantively. They did not, and as such, results from the ML models are reported.

Reporting SEM results varies widely among researchers. Here, I follow guidelines developed by the American Psychological Association and McDonald and Ho (APA, 2002; McDonald & Ho, 2002). I follow a two-step approach in presenting each of the structural equation models: I begin demonstrating adequate fit in my measurement model. This step, validating the measurement model, is "regarded by many SEM researchers as a required first step before undertaking structural analysis" (Garson, 2014b, p. 89; Kline, 2005). The measurement model includes covariance paths connecting all exogenous variables and is evaluated like any other SEM, using goodness of fit, significance of path weights, and modification indexes. Final measurement models, like final full models, are achieved iteratively. Often, the final measurement model differs from the initial measurement model in terms. For brevity's sake, I include only the final measurement models in this chapter. Initial measurement models and related statistics can be found in the appendices. After providing results on final measurement models, I use them to test each partial full model and briefly interpret findings.

4.3.1 Exploring Support Capacity and Developmental Culture

Given the instability of statistical significance around support capacity and developmental culture as predictors of purposeful performance information use and a hypothesized interaction between the two independent variables, I ran a partial structural equation model exploring the relationships between these three variables.

4.3.1.1 The Final Measurement Model

The final measurement model presented in Figure 6-1 differs from the initial measurement model in that it includes a covariance path between error terms 8 and 9. This covariance was added after referencing the modification index included in the Appendix where the MI for this covariance was 8.338 and the parameter change was 1.00. The MI is related to a decrease in chi-square, where a lower value indicates a better model fit. In this case, including a covariance between error 8 and error 9 would decrease the chi-square value by about 8. There exist many criteria for deciding to add or subtract arrows in the model, but all require that some underlying theoretical reason exist for such a change (Garson, 2014b). While correlated error terms are not particularly desirable, errors 7 and 8 do measure the same latent variable (support capacity) and are related in the sense that both measure staff capabilities: the ability to collect information in a timely way and analyze it. The covariance suggestion from the modification index simply indicates that after accounting for the cause of correlation between the indicator variables by the latent variable, there is still "some unmeasured influence connecting the two indicator variables" (Garson, 2014b, p. 26).

Figure 4-3: Support Capacity and Developmental Culture Final Measurement Model
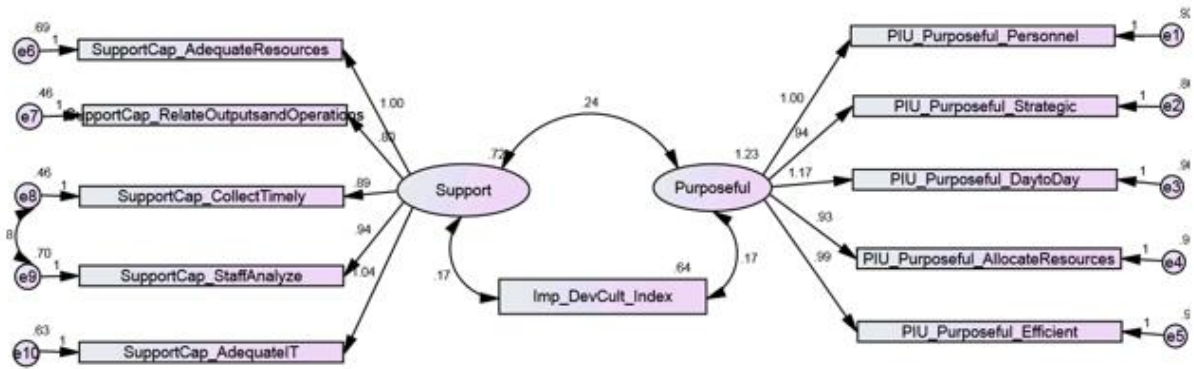
After adding the correlated error terms, the model chi-square (51.581) becomes nonsignificant (p=0.124), supporting an assessment of good model fit (Garson, 2014b). In addition, the normed fit index or NFI is 0.956: above the 0.95 threshold for good fit of the measurement model (Garson, 2014b; Schumacker & Lomax, 2004). NFI varies from 0 to 1 where 1 equals perfect fit. NFI measures the proportion by which the proposed model improves model fit as compared to the null model: a model where each measured variable is uncorrelated. In this case, the NFI of 0.956 indicates that this measurement model improves the null model by almost 96%. Lastly, RMSEA (root mean square error of approximation) is 0.032, indicating good model fit: convention dictates that RMSEA of less than or equal to 0.05 indicates good model fit (Garson, 2014b; Schumacker & Lomax, 2004). There is no standard for reporting goodness of fit, I report three measures of model fit here to address the diverse criteria of assessing model fit (Garson, 2014b; Jaccard & Wan, 1996). Additional model fit measures are included in Appendix C.

Table 4-7: Support Capacity and Developmental Culture Final Measurement Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	51.581	41	.124	1.258	.956	.032
Saturated model	.000	0			1.000	
Independence model	1178.052	55	.000	21.419	.000	.281

Next, it is important to examine the regression weights from latent variables to indicator variables. As demonstrated in the tables below all paths and covariances are significant, suggesting that no variables be dropped. In SEM, parameter estimates (structural coefficients) are constants which indicate the nature (positive or negative) and size of the relationship between two variables, like an OLS coefficient. Unstandardized parameter estimates keep the scaling information of variables and are interpreted in reference to that scale. Standardized parameter estimates, on the other hand, remove scaling making them suitable for comparison of parameters throughout the model. Standardized estimates, in a sense, are effect-size estimates.

Almost all indicators (Purpose 1-5 and Support 1-5) meet the 0.7 standardized estimate threshold for a well-fitting model, meaning that at least half of the variance in the indicator is explained by the latent variable. This is not true for Support4 (i.e. staff able to analyze data) and Purpose4 (i.e. use data to allocate resources). Still, both of these indicators are theoretically important to this study and as such, are retained in the model (Garson, 2014b).

Table 4-8: Support Capacity and Developmental Culture Final Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Purposeful	<-->	Support	.242	.073	3.307	***	par_9
Purposeful	<-->	Imp_DevCult_Index	.173	.061	2.847	.004	par_10
Support	<-->	Imp_DevCult_Index	.165	.049	3.391	***	par_11
e8	<-->	e9	.185	.053	3.502	***	par_12

*** = p < .001

Table 4-9: Support Capacity and Developmental Culture Final Measurement Model Regression Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Purpose2	<---	Purposeful	.941	.746	.080	11.767	***	par_1
Purpose3	<---	Purposeful	1.169	.806	.092	12.746	***	par_2
Purpose4	<---	Purposeful	.932	.735	.083	11.177	***	par_3
Purpose5	<---	Purposeful	.987	.740	.087	11.314	***	par_4
Purpose1	<---	Purposeful	1.000	.755				
Support1	<---	Support	1.000	.714				
Support2	<---	Support	.800	.708	.081	9.884	***	par_5
Support3	<---	Support	.894	.747	.089	10.070	***	par_6
Support4	<---	Support	.939	.689	.099	9.448	***	par_7
Support5	<---	Support	1.038	.744	.099	10.534	***	par_8

*** = p < .001

4.3.1.2 The Full Model

A full model is the combination of the measurement and structural models. The structural model consists of the paths which connect simple and latent variables. Having verified the measurement model, we now use it to test the hypothesized structural relationships between variables included in the model. Here, because I anticipate developmental culture (measured by an index score) to mediate the effect of support capacity on purposeful use, I model direct paths connecting support capacity to developmental culture, support capacity to purposeful use, and developmental culture to purposeful use.

Figure 4-4: Support Capacity and Developmental Culture Full Model
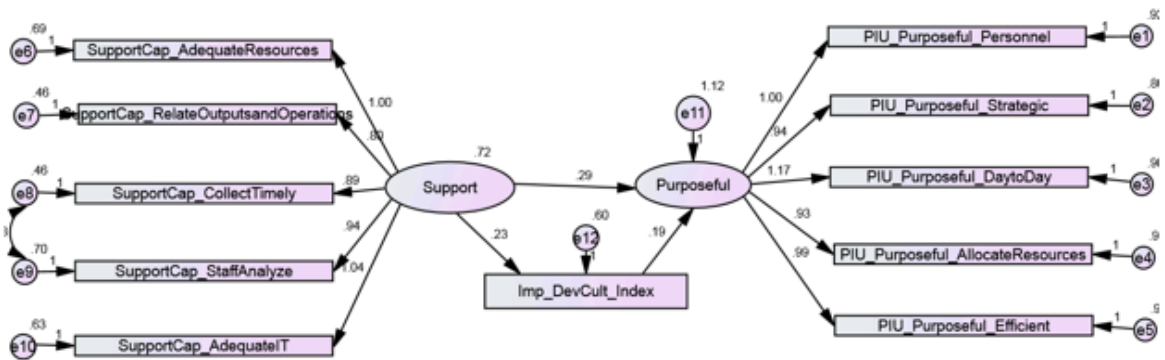
As with the measurement model, the full model achieves adequate fit demonstrated by a nonsignificant model chi-square (i.e. CMIN), NFI above 0.95, and RMSEA below 0.05 (Garson, 2014b; Schumacker & Lomax, 2004).

Table 4-10: Support Capacity and Developmental Culture Full Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	51.581	41	.124	1.258	.956	.032
Saturated model	.000	0			1.000	
Independence model	1178.052	55	.000	21.419	.000	.281

In examining the regression and standardized regression weights in Table 6-5, we again note that all paths are significant (Garson, 2014). While the model does achieve good fit, an examination of the standard estimates reveals that while indicator variables are well explained by the latent variables on which they load, the structural paths do not achieve similar path strength.

Table 4-11: Support Capacity and Developmental Culture Full Model Regression and Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Culture	<---	Support	.229	.243	.064	3.559	***	par_10
Purposeful	<---	Support	.290	.223	.099	2.931	.003	par_9
Purposeful	<---	Culture	.195	.141	.093	2.095	.036	par_11
Purpose2	<---	Purposeful	.941	.746	.080	11.767	***	par_1
Purpose3	<---	Purposeful	1.169	.806	.092	12.746	***	par_2
Purpose4	<---	Purposeful	.932	.735	.083	11.177	***	par_3
Purpose5	<---	Purposeful	.987	.740	.087	11.314	***	par_4
Purpose1	<---	Purposeful	1.000	.755				
Support1	<---	Support	1.000	.741				
Support2	<---	Support	.800	.708	.081	9.884	***	par_5
Support3	<---	Support	.894	.747	.089	10.070	***	par_6
Support4	<---	Support	.939	.689	.099	9.448	***	par_7
Support5	<---	Support	1.038	.744	.099	10.534	***	par_8

***=p<=.001

To understand variable effects, I calculated direct, indirect, and total effects of each variable included on the model. In the following table, columns indicate the "from" variable and rows, the "to" variable. For the purposes of this study, I am most interested in the effect of support capacity as mediated by developmental culture on purposeful use. As indicated in

the following table, the total effect of support capacity on purposeful use is 0.335, which is

the effect we would find if there was no mediator in the model. The direct effect of support

capacity on purposeful use is 0.290, slightly less than the total effect. The indirect effect of

support capacity which passes through developmental culture is 0.045: about 13% of the total

effect of support capacity on purposeful use is mediated by developmental culture, a fairly

small effect.

Table 4-12: Support Capacity and Developmental Culture Full Model Effects

	Total Effects			Direct Effects			Indirect Effects		
	Support	**Culture**	**Purposeful**	**Support**	**Culture**	**Purposeful**	**Support**	**Culture**	**Purposeful**
Culture	.229	.000	.000	.229	.000	.000	.000	.000	.000
Purposeful	.335	.195	.000	.290	.195	.000	.045	.000	.000
Support1	1.000	.000	.000	1.000	.000	.000	.000	.000	.000
Support2	.800	.000	.000	.800	.000	.000	.000	.000	.000
Support3	.894	.000	.000	.894	.000	.000	.000	.000	.000
Support4	.939	.000	.000	.939	.000	.000	.000	.000	.000
Support5	1.038	.000	.000	1.038	.000	.000	.000	.000	.000
Purpose1	.335	.195	1.000	.000	.000	1.000	.335	.195	.000
Purpose2	.315	.184	.941	.000	.000	.941	.315	.184	.000
Purpose3	.391	.228	1.169	.000	.000	1.169	.391	.228	.000
Purpose4	.312	.182	.932	.000	.000	.932	.312	.182	.000
Purpose5	.331	.192	.987	.000	.000	.987	.331	.192	.000

4.3.2 Exploring Comparative Hypotheses: Developmental Culture

I hypothesized that while developmental culture would be a positive predictor of both

purposeful and political performance information use, it would have a greater influence on

purposeful use than political use. In running the OLS models, I discovered that overall,

developmental culture was not a significant predictor of either type of performance

information use. However, given developmental culture's significance in the previous SEM

model and the attention paid to developmental culture as a driver of purposeful use, I wanted

to ascertain its significance and impact when modelling individually. Consequently, I built a

partial model exploring the relative importance of developmental culture

(*imp_devcult_index*) on purposeful and political use.

4.3.2.1 The Final Measurement Model

The final measurement model includes a covariance arrow between unobserved errors 7 and 8 of purposeful performance information use. While covarying error is not ideal, using data to allocate resources and/or make an organization more efficient are conceptually similar which may be the cause for this covariance.

Figure 4-5: Developmental Culture Final Measurement Model
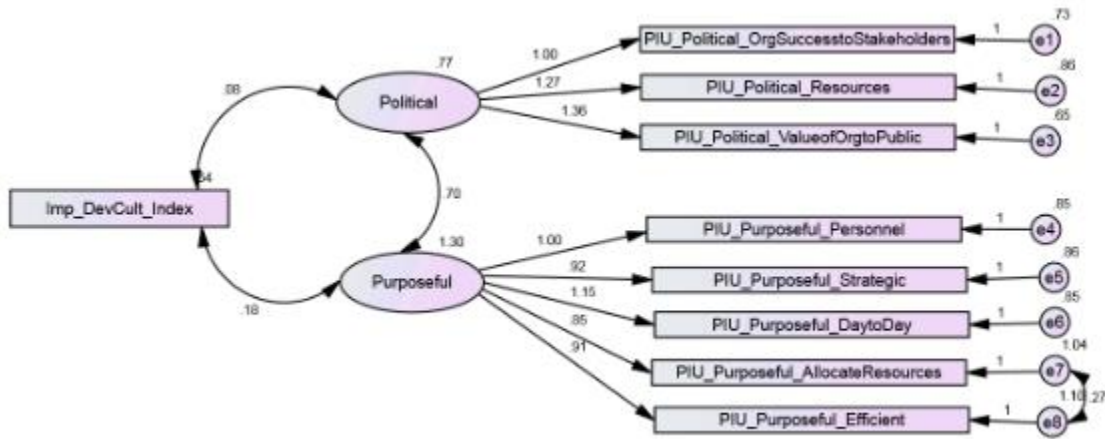
As demonstrated in the following table, this model achieves good fit: model chi-square (CMIN) is not significant, NFI is 0.968 (above the 0.95 threshold for good fit), and RMSEA is less than 0.05 (Garson, 2014b; Schumacker & Lomax, 2004).

Table 4-13: Developmental Culture Final Measurement Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	32.572	24	.113	1.357	.968	0.037
Saturated model	.000	0			1.000	
Independence model	1006.764	36	.000	27.966	.000	.323

Table 4-19 shows all regression paths are significant. Again, nearly all indicators meet the 0.7 standard estimate threshold for well-fitting models. This means that at least half of the variance in the indicator is explained by the latent variable. This is not true for Purpose 4, use data to allocate resources, the same indicator variable with covarying error. This does substantiate the notion that there exists and underlying relationship between allocating

resources and making the organization more efficient. Intuitively it appears that these

behaviors are conceptually similar. Nevertheless, because prior research treats them as

separate behaviors (Moynihan & Hawes, 2012) I keep both indicators in the model.

Table 4-14: Developmental Culture Final Measurement Model Regression Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Purpose1	<---	Purposeful	1.000	.778				
Purpose2	<---	Purposeful	.915	.748	.076	12.062	***	par_3
Purpose3	<---	Purposeful	1.151	.818	.087	13.253	***	par_4
Purpose4	<---	Purposeful	.849	.689	.078	10.938	***	par_5
Purpose5	<---	Purposeful	.913	.705	.081	11.226	***	par_6
Political1	<---	Political	1.000	.716				
Political2	<---	Political	1.272	.769	.117	10.860	***	par_1
Political3	<---	Political	1.365	.830	.121	11.321	***	par_2

*** = p < .001

4.3.2.2 The Full Model

Figure 4-6: Developmental Culture Full Model
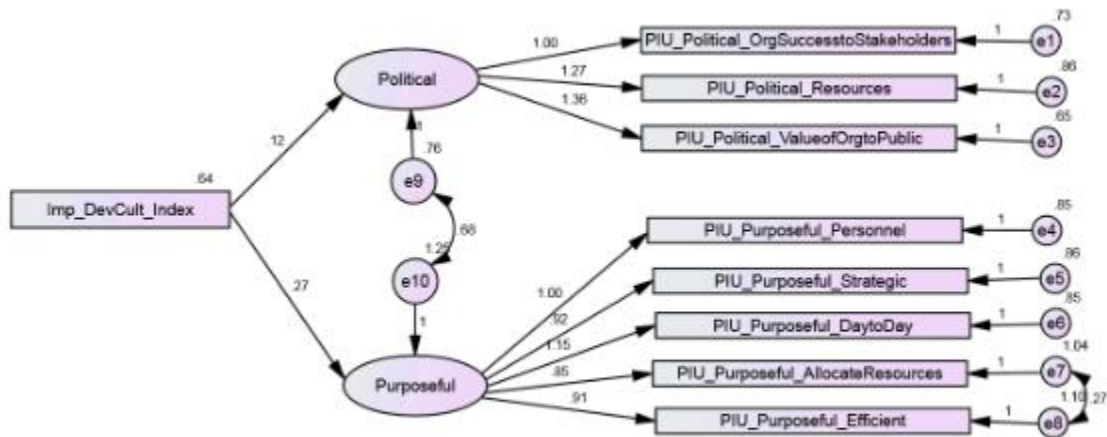
Table 4-15: Developmental Culture Full Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	32.572	24	.113	1.357	.968	0.037
Saturated model	.000	0			1.000	
Independence model	1006.764	36	.000	27.966	.000	.323

The full model achieves adequate fit as demonstrated by a nonsignificant model chi-square (i.e. CMIN), NFI above 0.95, and RMSEA below 0.05 (Garson, 2014b; Schumacker & Lomax, 2004). According to the regression weights table, developmental culture does have a significant positive effect (total effect being 0.272) on purposeful use, but its influence on political use, a total effect of 0.113, is not statistically significant (p = 0.112).

Table 4-16: Developmental Culture Full Model Regression Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Political	<---	Culture	.119	.109	.075	1.588	.112	par_8
Purposeful	<---	Culture	.275	.193	.095	2.901	.004	par_9
Purpose1	<---	Purposeful	1.000	.778				
Purpose2	<---	Purposeful	.915	.748	.076	12.062	***	par_3
Purpose3	<---	Purposeful	1.151	.818	.087	13.253	***	par_4
Purpose4	<---	Purposeful	.849	.689	.078	10.938	***	par_5
Purpose5	<---	Purposeful	.913	.705	.081	11.226	***	par_6
Political1	<---	Political	1.000	.716				
Political2	<---	Political	1.272	.769	.117	10.860	***	par_1
Political3	<---	Political	1.365	.830	.121	11.321	***	par_2

*** = p < .001

4.3.3 Exploring Comparative Hypotheses: Stakeholder Involvement

I hypothesized that external stakeholder support of performance measurement would be positively associated with political performance information use, and that internal stakeholder support of performance measurement would be positively associated with purposeful performance information use. Further, I anticipated that external stakeholder support would be a stronger predictor of political performance information use than internal stakeholder support would be of purposeful performance information use. The OLS models did not confirm these educated guesses: external stakeholder support was not shown to be a statistically significant predictor of purposeful nor political use, and internal support was a significant positive predictor of political use, not purposeful. Being unexpected results, I tested these comparative hypotheses in a partial structural equation model, looking

specifically at internal and external stakeholder support and their relationship with purposeful

and political performance information use.

4.3.3.1 The Final Measurement Model

The final measurement model shown below includes an additional covariance

between error terms 7 and 8 on the latent variable Purposeful as seen in the previous

developmental culture model.

Figure 4-7: Stakeholder Involvement Final Measurement Model
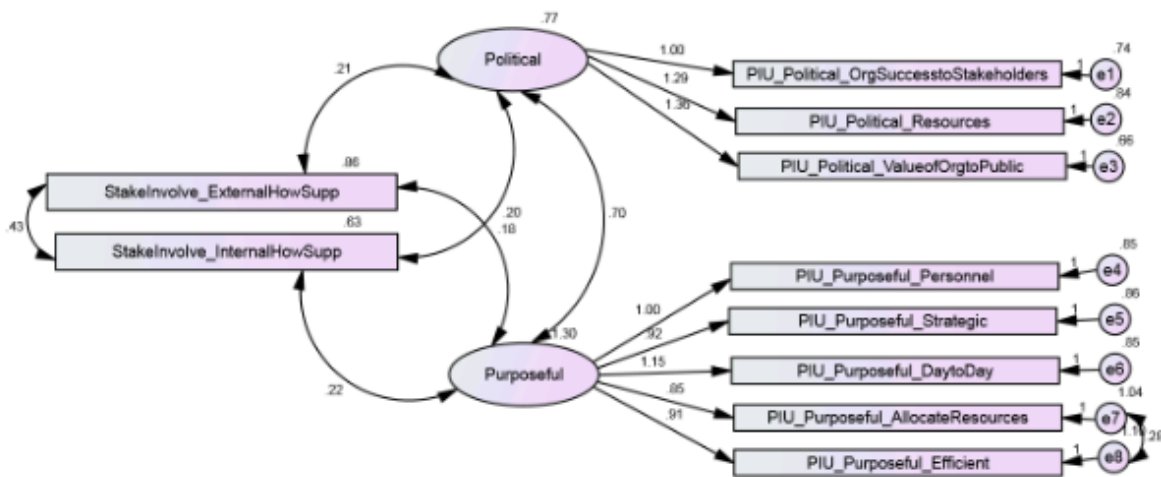
Regarding model goodness of fit, model chi-square is appropriately nonsignificant –

36.410 with a p value of .195. NFI is 0.968, above the 0.95 good fit threshold (Schumaker &

Lomax, 2004), and RMSEA is 0.029: convention dictates that RMSEA should be less than or

equal to 0.05 for good fit (Garson, 2014b; Schumacker & Lomax, 2004).

Table 4-17: Stakeholder Involvement Final Measurement Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	36.410	30	.195	1.214	.968	0.29
Saturated model	.000	0			1.000	
Independence model	1133.047	45	.000	25.179	.000	.306

According to the regression weights table, all indicator paths are significant. The same is true for all covariance paths. Almost all indicators meet the 0.7 standard estimate threshold for a well-fitting model. Again, Purpose4 (data used to allocate resources) falls just short. For the same reasons explained in the previous model (i.e. possible conceptual overlap but theoretical and research precedence to treat as independent construct), this indicator is retained here.

Table 4-18: Stakeholder Involvement Final Measurement Model Regression and Standardized Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Purpose1	<---	Purposeful	1.000	.778				
Purpose2	<---	Purposeful	.916	.748	.076	12.075	***	par_3
Purpose3	<---	Purposeful	1.151	.818	.087	13.262	***	par_4
Purpose4	<---	Purposeful	.846	.688	.078	10.911	***	par_5
Purpose5	<---	Purposeful	.910	.703	.081	11.198	***	par_6
Political1	<---	Political	1.000	.714				
Political2	<---	Political	1.288	.776	.118	10.936	***	par_1
Political3	<---	Political	1.360	.825	.120	11.318	***	par_2

*** = p < .001

4.3.3.2 The Full Model

Figure 4-8: Stakeholder Involvement Full Model
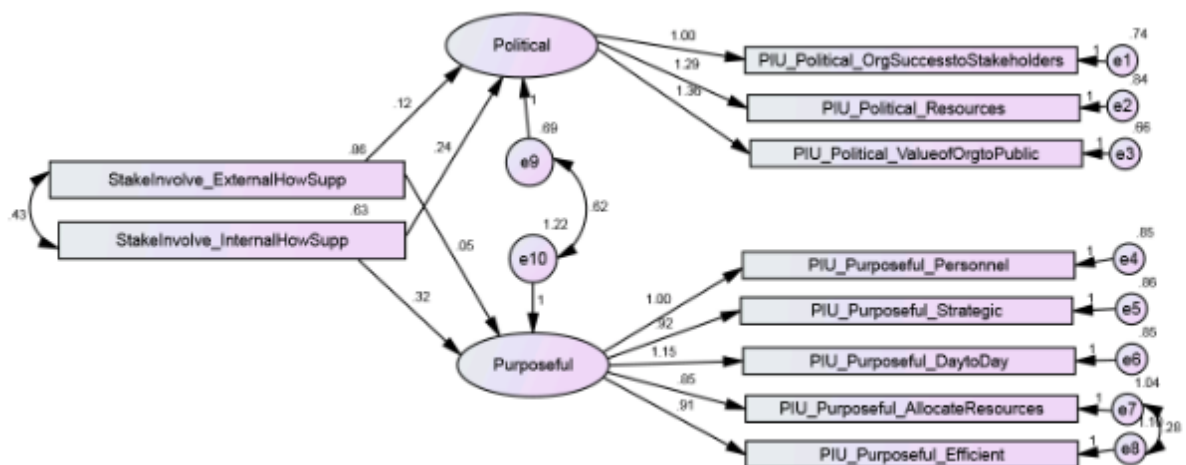
Table 4-19: Stakeholder Involvement Full Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	36.410	30	.195	1.214	.968	0.029
Saturated model	.000	0			1.000	
Independence model	1133.047	45	.000	25.179	.000	.306

Referring to goodness of fit measures, model chi-square (CMIN) is not significant,

NFI is above 0.95, and RMSEA is below 0.05, all of which indicate good model fit (Garson,

2014b; Schumacker & Lomax, 2004). To assess variable significance, we refer to the

regression and standardized regression weights table. With p values of 0.112 and 0.622, it

appears that external stakeholder support is not a significant predictor of political nor

purposeful use. Internal support, however, is shown to be a significant positive predictor of

both purposeful and political use. To understand the effect of internal support on both kinds

of use, we refer to the subsequent model effects table. Here, we see that internal support has a

total effect of 0.321 on purposeful use, and a smaller 0.237 total effect on political use.

Standard estimates support this notion, that the impact of internal support is slightly greater

on purposeful use (0.224) than political (0.216).

Table 4-20: Stakeholder Involvement Full Model Regression and Standardized Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Political	<---	ExtSup	.121	.129	.076	1.588	.112	par_9
Purposeful	<---	ExtSup	.048	.039	.098	.493	.622	par_10
Political	<---	IntSup	.237	.216	.090	2.636	.008	par_11
Purposeful	<---	IntSup	.321	.224	.116	2.775	.006	par_12
Purpose1	<---	Purposeful	1.000	.778				
Purpose2	<---	Purposeful	.916	.748	.076	12.075	***	par_3
Purpose3	<---	Purposeful	1.151	.818	.087	13.262	***	par_4
Purpose4	<---	Purposeful	.846	.688	.078	10.911	***	par_5
Purpose5	<---	Purposeful	.910	.703	.081	11.198	***	par_6
Political1	<---	Political	1.000	.714				
Political2	<---	Political	1.288	.776	.118	10.936	***	par_1
Political3	<---	Political	1.360	.825	.120	11.318	***	par_2

*** = p < .001

4.4 Hypothesis Testing and Discussion

The primary research questions driving this study are: 1) what drives nonprofit executives to use performance information; and 2) are specific drivers of information use more likely to promote purposeful or political performance information use? Prior research indicates that public service motivation, perceived social impact, and leadership support for performance measurement all positively influence purposeful performance information use (Dull, 2009; Kroll & Vogel, 2014; Moynihan & Ingraham, 2004; Moynihan & Lavertu, 2012; Moynihan & Pandey, 2010; Moynihan et al., 2012a). Organizationally, goal clarity, support capacity, and developmental culture have been found to positively influence purposeful use (Berman & Wang, 2000; Julnes & Holzer, 2001; Moynihan & Hawes, 2012a; Moynihan et al., 2012a). At the environmental level, stakeholder involvement – in the form of internal, external, and partnership support of performance measurement – positively influence purposeful use (Berman & Wang, 2000; Bourdeaux & Chikoto, 2008; Moynihan & Hawes, 2012a). Fewer research has been done on political use although, as it pertains to this study, evidence suggests that perceived social impact and goal clarity are positive influencers (Moynihan et al., 2012a, 2012b).

In investigating the drivers of nonprofit executive performance information use and their comparative effects specifically on purposeful and political use, I generated 15 hypotheses guided by existing evidence and theory. To test these hypotheses, I ran a series of progressively inclusive ordinary least squares models as well as partial structural equation models. In this section I discuss analytic support, or lack thereof, for these hypotheses. Findings are summarized in Table 4-21.

4.4.1 Individual Independent Variables

4.4.1.1 Public service motivation: Hypothesis 1

> **H1***:* Public service motivation will be positively associated with purposeful performance information use

I hypothesized that because individuals with high public service motivation care about achieving organizational goals, they will use performance information as a tool to help them achieve those goals (Moynihan et al., 2012a; Saliterer & Korac, 2014). Regression models predicting purposeful use do not confirm this. PSM fails to achieve statistical significance (Model 1 p = 0.148). Conversely, PSM is a significant predictor of political use (Model 3 p = 0.024; Model 4 p = 0.027), but negatively so (Model 3 b = -2.264; Model 4 b = -2.218). Hypothesis 1 is not supported.

4.4.1.2 Perceived social impact: Hypotheses 2 – 4

> **H2**: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and purposeful performance information use

> **H3**: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and political performance information use

> **H4**: The interaction between perceived social impact and public service motivation will have a stronger effect on political performance information use than purposeful performance information use

Because higher perceived social impact drives executives to use performance data as a management tool to achieve goals they value, I hypothesized that perceived social impact would positively influence the relationship between public service motivation and purposeful use (Moynihan & Lavertu, 2012; Moynihan, Pandey, & Wright, 2012a). Because employees who see the value of their work are more likely to be willing to argue in support of it to external stakeholders and the public, I expected that perceived social impact would also have a positive interaction effect on the relationship between public service motivation and

political use. In addition, in previous studies, perceived social impact was found to have a stronger effect on political use than purposeful use (Moynihan, Pandey & Wright, 2012a), and I anticipated a seeing as similar pattern here.

Regression models support the last two of these three claims. In models of purposeful use, neither PSM (Model 4 p = 0.105), PSI (Model 4 p = 0.479), nor their interaction (Model 4 p = 0.092) achieve statistical significance. In models of political use, not only are PSM and its interaction with PSI (Model 4 p = 0.019) statistically significant, evidence suggests that PSI does positively influence the relationship between PSM and political use: it mitigates the negative impact of isolated PSM on political use. Even interacted, the effect of PSM and PSI negatively influence political use. Hypothesis 2 is not supported, but hypotheses 3 and 4 are.

4.4.1.3 Interpretation

It is difficult to say why PSM and PSI do not influence purposeful use significantly. It is possible that with the presence of high leadership support – by far the most prominent of the individual level variables driving purposeful information use in this model (Model 4 p = 0.001, b = 3.389) – PSM and PSI simply fall by the wayside. In contrast, with models of political use, leadership support's influence is nonsignificant, potentially allowing the relationship of PSM and PSI to fully surface. It may also be an issue of position. When prosocial values, specifically public service motivation, were investigated by Moynihan et al., survey participants held a variety of organizational roles, from management to front-line employee (2012a). The links between PSI and purposeful use may be more pronounced for individuals not working in an executive position which is why they do not show up in this study.

Despite the negative overall effect the interaction of PSM and PSI has on political use, the finding that PSI does have a positive relationship with political use aligns with Moynihan et al.'s work on prosocial values (2012a). In that study, the authors contend that the links between PSI and information use support one of the larger assumptions of transformational leadership – "that individuals are responsive to a sense of care and service beyond themselves" (Moynihan et al., 2012a, p. 476; Van Wart, 2005) – and suggest that exploring ways to "connect individuals to the impact of their work" (p. 476) might bring about improved adherence to public sector management reforms. The findings from this study don't refute this, but it appears that PSI's ability to promote adherence to performance-oriented reforms is demonstrably bound by existing executive attitudes and motivations, at least in the nonprofit sector. In this sense, connecting individuals to the impact of their work may not be enough to garner support for results-oriented reforms from individuals who would otherwise be inclined to resist them. In short, PSI may not have the positive effect scholars infer it to have.

There is an assumption in performance information use literature that PSM is positively associated with both forms of information use (Moynihan et al., 2012a), but as seen here, this may not be the case for nonprofit executives. Rather, for these individuals (or possibly more broadly, individuals at the executive level) PSM's negative association with political use could suggest an alternate form of crowding out: data use may appear to cheapen the strongly held motivations and values executives have for working in the nonprofit sector by making extrinsic the intrinsic rationale for doing this work.

4.4.2 Organizational Independent Variables

4.4.2.1 Developmental culture: Hypotheses 5 – 8

> **H5**: Developmental culture of a nonprofit will be positively related to purposeful performance information use

> **H6**: Developmental culture of a nonprofit will be positively related to political performance information use

> **H7**: Developmental culture will be stronger predictor of purposeful performance information use than political performance information use

> **H8**: Developmental culture will have a positive interaction effect on the relationship between support capacity and purposeful performance information use

I hypothesized that organizations with developmental cultures are likely to engage in performance information use because use facilitates learning and improvement through additional feedback. Organizations with these kinds of innovative and entrepreneurial cultures are well suited to engage in purposeful performance information use as they are associated with a focus on flexibility, adaptability and readiness, growth (Kroll, 2015; Folz, Abdelrazek, & Chung, 2009; Johansson & Siverbo, 2009) and, to a lesser extent, resource acquisition. To that end, nonprofits with developmental cultures may engage in political information use (Moynihan & Pandey, 2012a). I anticipated a positive interaction effect because organizations with developmental cultures are often willing to try new things, thus creating an environment in which support capacity may be more readily and effectively utilized – increasing data availability, quality, and ultimately, the likelihood of purposeful use.

4.4.2.1.1 OLS Models

There is no evidence stemming from the regression models to suggest that developmental culture is a significant predictor of purposeful or political use. These models do not support hypotheses 5 – 7.

4.4.2.1.2 SEM Models

Developmental culture's total lack of significance in the regression analysis was unanticipated, especially considering the attention it has garnered as an important driver of purposeful information use (Folz, Addelrazek, & Chung, 2009; Johansson & Siverbo, 2009; Moynihan & Pandey, 2010; Kroll, 2015). Consequently, I included developmental culture as a simple variable, measured by its index score, in two structural equation models.

The first modeled developmental culture as mediating the relationship between support capacity and purposeful performance information use. Again, I hypothesized this because an organization with a developmental culture would be better able to tap into the benefits of existing support capacity. This partial model – including only support capacity, developmental culture, and purposeful use – supports this notion. Developmental culture is a significant predictor of purposeful use (p = 0.036), although its effect is not substantial: for each unit increase in developmental culture, there is an approximate 1/5 of a point increase in purposeful use (measured here on a five point scale, b = 0.195), providing limited support for hypothesis 5. The model does show a significant mediating relationship between support capacity and developmental culture (p < 0.001): the total effect of support capacity is 0.229, but the indirect effect, that which is routed through developmental culture, is 0.045, about 13%, supporting hypothesis 8.

The second SEM model focuses on the comparative importance of developmental culture as a driver of purposeful and political use. Again, in this model, developmental

culture is shown to be a significant and positive driver of purposeful performance information use. Conversely, the path connecting developmental culture and political use is not significant. In this sense, hypothesis 5 and 7 find support as developmental culture is both significant (p = 0.004) and positively associated (b = 0.275) for purposeful use when it is not for political (p = 0.112). Hypothesis 6 meanwhile, is not supported. Nevertheless, these models can provide only limited support for related hypotheses. When testing comprehensive models of purposeful and political use, neither support capacity nor developmental culture are significant. While important on their own, they are not primary drivers of purposeful or political information use when combined with other variables in the model.

4.4.2.2 Support Capacity: Hypotheses 9 - 11

H9: Support capacity of a nonprofit will be positively associated with purposeful performance information use

H10: Support capacity of a nonprofit will be positively associated with political performance information use

H11: Of the dimensions of support capacity, staff training will be the strongest predictor of purposeful performance information use

Evidence suggests that the success of performance management is partially dependent on the level of support extended to management systems during adoption and implementation (Kroll, 2015; Berman & Wang, 2000; de Lancer Julnes & Holzer, 2001; Moynihan & Hawes, 2012; Yang & Hsieh, 2006). As such, I hypothesized that support capacity of a nonprofit would be positively associated with both purposeful use. Further, because support capacity allows organizations to make the most out of performance measurement, it may influence executives to use information politically largely through making data more reliable and accessible to a variety of stakeholders. The idea that training will be central to purposeful use

stems from Carnochan's 2013 comparative case study which finds that organizations with

dedicated and well-trained staff not only maintain information systems more consistently,

they were better able to utilize performance information purposefully.

4.4.2.2.1 OLS Models

As was the case with developmental culture, in each of the OLS models, support

capacity fails to achieve statistical significance. An additional regression model with support

capacity items (instead of the index score) alongside other organizational variables

demonstrates similar nonsignificance. Related tables can be found in Appendix B. These

models do not support hypotheses 9, 10, or 11.

4.4.2.2.2 SEM Model

I include support capacity in the SEM model investigating the relationships between

support capacity, developmental culture, and purposeful use. I discuss developmental

culture's role as a mediating variable in the previous section, but discuss support capacity in

this model independently of developmental culture here. Interpreting the standardized

regression weights of the indicators for support capacity, we see that Support3, staff capable

of collecting information in a timely way, shares the greatest amount of variance with the

latent construct, support capacity ($b = 0.747$). In the full model, Support3 covaries with

Support4, staff capable of analyzing performance data, aligning with the notion that items 2-

4 of this construct are intended to capture the staff training dimension of support capacity

(see pg. 45). The weight of these items compared to the rest of the scale suggest that staff

capacity or training may be the most central, or at least characteristic, dimension of support

capacity, providing limited support for hypothesis 11.

As for support capacity's relationship with purposeful information use, the SEM

model does confirm a significant and positive (0.290) association. Hypothesis 9 is supported

with the caveat that controlling for other factors, support capacity does not achieve similar significance.

4.4.3 Environmental Independent Variables

4.4.3.1 External Stakeholder Support Hypothesis 12

> **H12**: External stakeholder support of performance measurement will be positively associated with political performance information use

I expected nonprofit executives to use performance information politically as a way of legitimizing efforts and activities to external constituencies, particularly funders and government contractors (Moynihan, Pandey & Wright, 2012). For nonprofit executives, I anticipated that external stakeholders might look to performance data as a way to manage their principal-agent relationship, in which case nonprofit executives would be even more likely to use data to advocate for continued support. External stakeholder support is included in OLS models 3 and 4 but it is not shown to be a statistically significant predictor of purposeful nor political information use. For models 3 and 4, pooled p = 0.970 and 0.887 respectively. Hypothesis 12 is not supported by OLS models.

4.4.3.2 Internal Stakeholder Support Hypothesis 13

> **H13**: Internal stakeholder support of performance measurement will be positively associated with purposeful performance information use

In line with stewardship theory, I hypothesized that internal stakeholder support would influence nonprofit executives to use performance information purposefully by encouraging leaders to take performance information seriously. Internal stakeholder support would, in effect, create pressure on executives to stay current on their department's data as a way to align goals and work together to achieve them (Moynihan & Ingraham, 2004; Berman & Wang, 2000; Bourdeaux & Chikoto, 2008; Ho, 2006; Moynihan & Hawes, 2012;

Moynihan & Pandey, 2010; Yang & Hsieh, 2006). Internal stakeholder support, like external stakeholder support, is included in OLS models 3 and 4 where it achieves pooled p values of 0.350 and 0.318 respectively for purposeful use, and 0.039 and 0.194 for political use respectively. While internal stakeholder support is not a significant predictor of purposeful use in either model, it does show promise as a positive driver of political use (Model 3 p = 0.039; b = 2.067), when controlling for goal clarity, PSM, PSI, and other forms of stakeholder involvement. Hypothesis 13 is not supported.

4.4.3.3 External & Internal Stakeholder Support Hypothesis 14

> **H14**: External stakeholder support will be a stronger predictor of political performance information use than internal stakeholder support will be of purposeful performance information use

I anticipated a stronger relationship between external stakeholder support and political use given the pressure to engage in performance management coming from external sources (i.e. funders, contractors). It is also true that performance management initiatives in nonprofits less frequently come from internal sources (Carnochan et al., 2014) suggesting that performance management is less intrinsically valuable to nonprofit executives.

4.4.3.3.1 OLS Models

While the regression models do not allow for direct comparison of coefficients, it is clear from a lack of statistical significance that internal stakeholder support is the stronger predictor of information use. External stakeholder support is not a significant predictor for either kind of information use while internal support is significant and positively associated with political use, not purposeful, as was hypothesized. Hypothesis 14 is not supported.

4.4.3.3.2 SEM Model

The SEM model confirms this. Again, even when examining internal and external stakeholder support without additional variables, external support does not achieve statistical

significance (purposeful: p = 0.622; political: p = 0.112). Internal stakeholder support, on the other hand, is significant for both types of use (purposeful: 0.006; political: p = 0.008). Based on the standardized parameter estimate (purposeful: 0.224; political: 0.216), internal support is a stronger predictor of purposeful use. This provides limited support for hypothesis 13, but does not support hypothesis 14.

4.4.3.4 Partnership Activity Level Hypothesis 15

H15: Activity in a collaborative arrangement will be positively associated with political performance information use

Because inter-organizational relationships can become political struggles wherein participating organizations try to influence each other, I anticipated that these kinds of networks would create greater awareness around performance goals and would promote data use as a way to manage these network relationships, in accordance with resource dependency theory (Carman, 2011, referencing Donaldson, 1995). In the OLS models, community partnership activity level is significant and positively associated not only with political use, but also purposeful use. Not only is this hypothesis fully supported, it suggests that executive information use is, perhaps, likely inspired by peer-pressure rather than supervisory or subordinate pressure.

4.4.3.5 Interpretation

In a sense then, not only does collaborative pressure positively influence information use as a way to promote or defend one's own organization amongst peers, it provides some level of accountability between members which, in turn, promotes adherence to results-oriented reforms as demonstrated by purposeful use. This finding doesn't directly address the criticism that networks fail to provide bureaucratic-like accountability (Kroll, 2015a; Moynihan & Hawes, 2012a), but it does show that network pressure can be a kind of control

mechanism, one that can influence individual behavior and promote accountability (Moynihan & Hawes, 2012a).

The lack of significance for eternal stakeholder support as a driver of political use was not anticipated. It may be that external stakeholder support is a better predictor of other types of performance use, particularly passive use. Pressure to use performance measurement could, instead, drive nonprofit executives to use information passively or perversely, as a way of simply abiding by, or appearing to abide by, the dictates of grantors, funders, and/or boards. Moynihan and Lavertu found something similar in their assessment of GPRA and PART (2012).

Essentially, in principal-agent arrangements, like that of nonprofits and contractors, performance measurement functions are the easiest behaviors for principals to monitor. Funders, donors, boards, and even national headquarter organizations may not have the in-depth programmatic knowledge necessary to assess managerial information use, and as such, more directly track whether performance plans, goals, reporting, and measurements are followed (Thomson, 2010). These types of behaviors more closely associate with passive use (Moynihan & Lavertu, 2012). Indeed, a cursory (and anecdotal) search of national websites for big brothers big sisters and the boys and girls club yields copious documentation on impact, evaluation, and mandated measurements. This isn't to say that agency theory is not at work, it just doesn't result in the active response from agents principals might prefer.

Evidence does suggest, however, that internal stakeholder support of performance measurement does positively influence political use. Limited evidence suggests internal support also positively influences purposeful use. This indicates that when staff, clients, or boards of directors support performance measurement within an organization, a leader is

more likely to use that data on behalf of the organization. I assumed the alignment of goals between principals and agents in stewardship theory (Caers et al., 2009; Carman, 2011; Lex Donaldson & Davis, 1991) would manifest as purposeful use. Instead, it seems that by boosting the likelihood executives stay current on data and performance trends, internal stakeholders influence executives to become advocates. In line with stewardship theory, I anticipated that nonprofit executives would use performance information because it would allow them to better serve the public and build trust among stakeholders. It's quite possible that, for this group, political use is the best way to achieve those goals.

4.4.5 Control Variables

Although this dissertation does not propose hypotheses for included control variables, this study confirms that, even in nonprofits, goal clarity and leadership support are significant predictors of both purposeful and political performance information use (Moynihan & Laduyt, 2009; Moynihan, Pandey & Wright, 2012a, 2012b; Dull, 2009; Moynhihan & Ingraham, 2004; Moynihan & Lavertu, 2012). The study also confirms the notion that organizational size is not a significant factor in purposeful or political information use (Bourdeaux & Chikoto, 2008; Melkers & Willoughby, 2005; Moynihan & Ingraham, 2004; Taylor, 2011).

Interestingly, leadership support is not a significant predictor of political use. This was unexpected. Generally, political use appears to be more strongly driven by stakeholder involvement: this is true in the OLS models and reconfirmed in the SEM model. Logically, it follows that a leader's support of performance management would strongly undergird their subsequent use of that measurement in traditional organizational management. But, when use becomes outward facing, it seems nonprofit executives are more prone to follow personal

feelings about information use and behavioral expectations from outsiders, specifically

partner organizations.

4.4.6 Chapter 4 Summary and Upcoming Chapter

This chapter includes an overview of the analysis for this dissertation and a

discussion of where the empirical evidence supports or fails to support the hypotheses

originally presented in Chapter 2. Chapter 5 opens with a brief discussion of results from the

preliminary investigation of the relationship between performance information use and

perceived organizational performance followed by a summary and discussion of overall

study findings, linking the empirical findings back to the central research questions of this

study. The chapter then closes with contributions of, limitations of, and future directions for

this research.

Table 4-21: Summary of Hypothesis Testing

| Variable		Related Hypothesis	Supported
Individual	Public Service Motivation	**H1**: Public service motivation will be positively associated with purposeful performance information use	Not Supported
	Perceived Social Impact	**H2**: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and purposeful performance information use	Not Supported
		H3: Perceived social impact will have a positive interaction effect on the relationship between public service motivation and political performance information use	**Supported**
		H4: The interaction between perceived social impact and public service motivation will have a stronger effect on political performance information use than purposeful performance information use	**Supported**
Organizational	Developmental Culture	**H5**: Developmental culture of a nonprofit will be positively related to purposeful performance information use	*Limited Support*
		H6: Developmental culture of a nonprofit will be positively related to political performance information use	Not Supported
		H7: Developmental culture will be stronger predictor of purposeful performance information use than political performance information use	*Limited Support*
		H8: Developmental culture will have a positive interaction effect on the relationship between support capacity and purposeful performance information use	*Limited Support*
	Support Capacity	**H9**: Support capacity of a nonprofit will be positively associated with purposeful performance information use	*Limited Support*
		H10: Support capacity of a nonprofit will be positively associated with political performance information use	Not Supported
		H11: Of the dimensions of support capacity, staff training will be the strongest predictor of purposeful performance information use	*Limited Support*
Environmental	Stakeholder Involvement	**H12**: External stakeholder support of performance measurement will be positively associated with political performance information use	Not Supported
		H13: Internal stakeholder support of performance measurement will be positively associated with purposeful performance information use	Not Supported
		H14: External stakeholder support will be a stronger predictor of political performance information use than internal stakeholder support will be of purposeful performance information use	Not Supported
		H15: Activity in a collaborative arrangement will be positively associated with political performance information use	**Supported**

CHAPTER 5. DISCUSSION, LIMITATIONS, AND CONCLUSION

5.1 Introduction

The previous chapter presented the analysis and discussion of hypothesized

relationships between individual, organizational, and environmental drivers of purposeful

and political performance information use. Analytic methods included stepwise and

comprehensive ordinary least squares models as well as partial structural equation models.

This chapter describes the results from an exploratory study of the relationship between

performance information use and perceived organizational performance, and extends the

discussion of empirical findings to central research questions. In closing, this chapter outlines

contributions to literature, limitations, and possible directions for future research.

5.2 Information Use and Organizational Performance

A secondary research interest of this study was to better understand if and how

performance information use drives organizational performance. Intended to be exploratory

in nature, I did not develop specific hypotheses around how information use would affect

perceived organizational performance. Still, this investigation is inspired by recent attempts

to evaluate whether using data does elevate organizational performance (McAfee &

Brynjolfsson, 2015). Succinctly, there isn't a wealth of information showing that embracing

data improves performance (Kroll, 2015b). That isn't to say that it doesn't, only that the links

between information use and improved organizational performance are not well understood.

While perceptual measures of performance are less reliable and more prone to bias, I

included in the survey two items measuring perceived organizational performance. They

asked executives to what extent they agreed 1) that performance information use had

substantially improved their organization; and 2) that their organization was a top performer

compared to similar organizations. The analysis included here uses only the second of these

two measures. Considering the shortcomings of the dependent variable – it is perceptual and a single item – the results from this analysis are exploratory.

For brevity's sake, I include measurement models and statistics for iterations 1 and 2 of the full model in the appendices. The measurement model, including latent variables purposeful and political use, and the scalar measure of perceived organizational performance does achieve good model fit. Regarding the full models, through iterative model development, it becomes apparent that the best model of the relationship between purposeful information use, political information use, and perceived organizational performance is one that is fully mediated.

Iteration 1 of the full model shows a lack of statistical significance on the path connecting purposeful use and organizational performance: according to this model, purposeful use does not meaningfully influence performance. In addition, while political use has a positive influence on perceived organizational performance (0.294), purposeful use – though nonsignificant – has the opposite effect (-0.086): it appears to decrease perceived organizational performance among executives, albeit by a slight margin.

Figure 5-1: Information Use and Performance Full Model Iteration 1
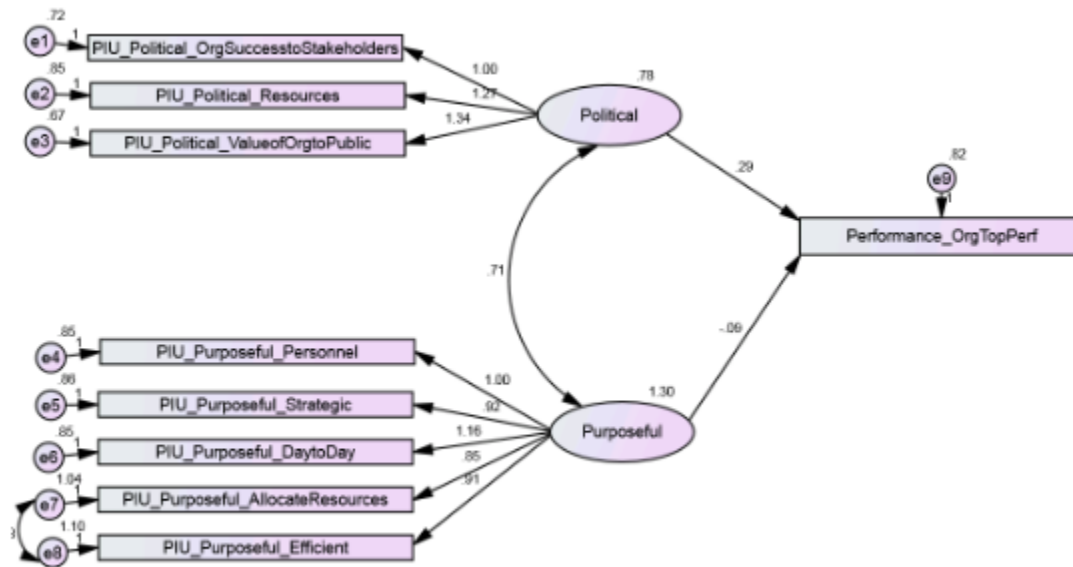
Importantly, however, political and purposeful use in this model covary significantly: the model does not specify how these variables are related, just that they are related. The same was true for previous SEM models including these dual dependent variable operationalizations. This covariance suggested some underlying relationship. Either: 1) purposeful and political use have conceptual overlap, or 2) there is a causal relationship. Given prior research, information use theory and typologies, and efforts to establish divergent validity among concepts for this study, I modelled the latter of these two options: a causal relationship.

Given the insignificant but slightly negative effect of purposeful use on performance, I investigated political use as a partially mediating variable of purposeful use in full model iteration 2. There was empirical support for this – that purposeful use might inspire or precede political use - as evidenced in iteration 1 modification index suggestions where the largest suggested regression paths linked purposeful items to political ones.

Figure 5-2: Information Use and Performance Full Model Iteration 2
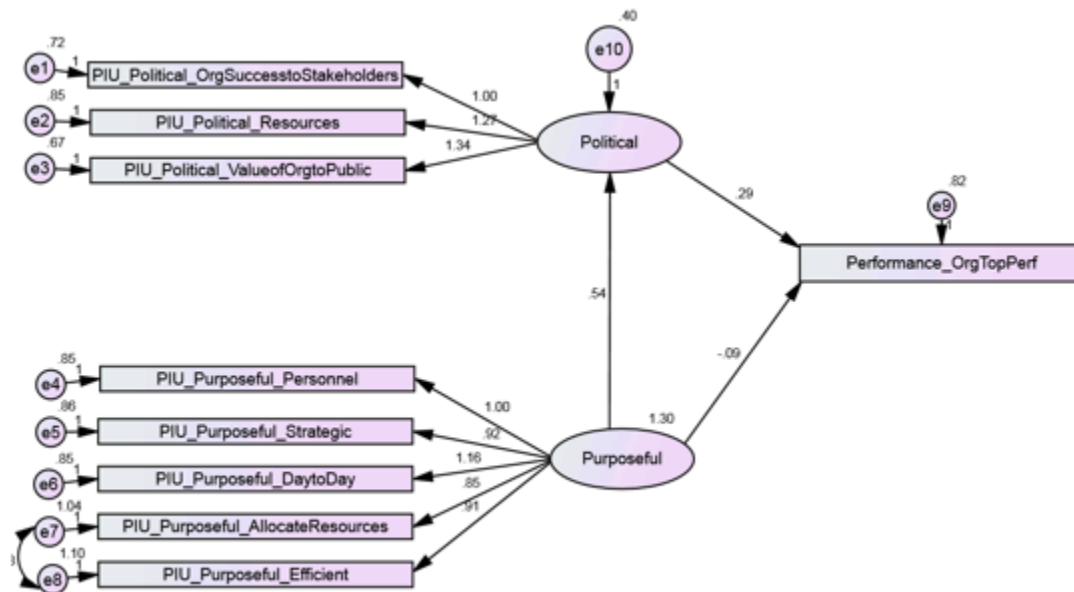
Still, the regression path linking purposeful use to organizational performance remained nonsignificant. In iteration 3, I dropped this path, achieving marginally better model fit.

Figure 5-3: Information Use and Performance Full Model Iteration 3
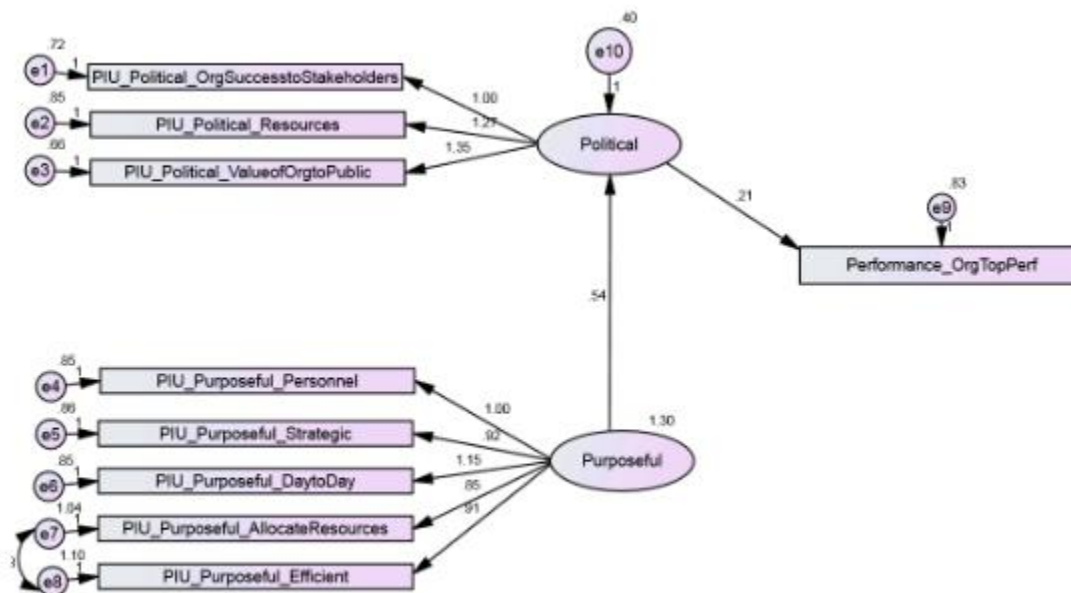
Table 5-1: Information Use and Performance Full Model Iteration 3 Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	34.335	25	.101	1.081	.966	.038
Saturated model	.000	0			1.000	
Independence model	1008.530	36	.000	28.015	.000	.323

This fully mediated model achieves satisfactory goodness of fit measures. Model-chi square and RMSEA drop very slightly (a good thing) while NFI decreases. This model does not appear to fit the data any better than the partially mediated Iteration 2 model based on these fit measures. To adequately compare these models, Iterations 2 and 3, the following table offers the parsimony normed fit index (PNFI) as well as the Akaike and Bayesian Information Criteria (AIC and BIC).[5]

Table 5-2: Information Use and Performance Iteration 3 and Iteration 2 Comparison Fit Measures

	Model 3			Model 2		
	PNFI	AIC	BIC	PNFI	AIC	BIC
Default model	.671	74.335	145.549	.645	75.361	150.135
Saturated model	.000	90.000	250.231	.000	90.000	250.231
Independence model	.000	1026.530	1058.576	.000	1026.530	1058.576

As shown in the following table, it appears that a fully mediated model (Model 3) is preferable to partial mediation: it achieves a higher PNFI, it is more parsimonious, and slightly lower AIC and BIC, it comes closer to the model-implied covariance matrix and with less complexity.

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[5] PNFI is the quotient of the parsimony ratio and NFI: when the research model is closer to the saturated model NFI is penalized. This fit measure penalizes less parsimonious models meaning larger values are better. AIC measures the difference between the model-implied and the observed covariance matrices, lower values are better but have no real meaning save for their relationship to other AICs. BIC "is an approximation to the log of a Bayes factor for the model of interest compared to the saturated model" (Garson, 2014b, p. 388). Essentially, BIC penalizes complex models with large sample sizes. Like AIC, BIC is only meaningful in relation to other BICs.

Table 5-3: Information Use and Performance Full Model Iteration 3 Regression Weights

			Estimate	Std. Estimate	S.E.	C.R.	P	Label
Political	<---	Purposeful	.541	.698	.063	8.550	***	par_9
Political2	<---	Political	1.269	.772	.116	10.956	***	par_1
Political3	<---	Political	1.349	.825	.119	11.379	***	par_2
Purpose2	<---	Purposeful	.916	.748	.076	12.040	***	par_3
Purpose3	<---	Purposeful	1.154	.819	.087	13.247	***	par_4
Purpose4	<---	Purposeful	.849	.689	.078	10.911	***	par_5
Political1	<---	Political	1.000	.720				
Purpose1	<---	Purposeful	1.000	.777				
Purpose5	<---	Purposeful	.912	.703	.082	11.178	***	par_6
Perf2	<---	Political	.206	.196	.071	2.890	.004	par_8

*** = $p \leq .001$

According to the regression weights table, all included paths are statistically significant. The total effect of purposeful use on political use is 0.541 with a standard error of 0.698. This is a fairly large effect: not only does purposeful use appear to increase political use by about half a point on a five point scale, according to squared multiple correlations (Appendix C) it accounts for about 50% of the variance in political use. Political use does appear to be a positive and significant predictor of perceived performance, but with a parameter estimate of 0.206 and standardized estimate of 0.196, it does not have the effect on perceived performance that purposeful use has on it. In all, this model only explains about 4% of the dependent variable.

5.3 Summary of Findings and Research Questions

The primary goal of this study was to investigate factors which influence purposeful performance information use and political performance information use of nonprofit executives. A secondary goal was to explore the relationship between types of information use and organizational performance. This dissertation confirms and expands on prior research findings in a new context and brings to light new evidence suggesting that the primary drivers of information use differ depending on the type of use in question. Furthermore, early

evidence suggests that information use types do not impact organizational performance uniformly.

5.3.1 Discussion of Study Findings

Largely speaking, of the hypothesized relationships, it appears that both purposeful and political information use by nonprofit executives are driven primarily by individual and environmental factors. With the exception of the control variable goal clarity, none of the organizational variables proved significant in the ordinary least squares models. This was not anticipated but it does underscore that there are distinct contextual differences which influence nonprofit executive information use as compared to research on public managers in governmental settings.

The notion that organizational characteristics, like support capacity and developmental culture, are weaker determinants of use hints at the possibility that nonprofit executive behavior is more directly shaped by individual motivations and environmental constraints, possibly because nonprofit directors dedicate additional time to advocating for their organization, in turn exerting less strategic control in the form of traditional management. Considering the evidence that some nonprofit organizations do view evaluation primarily as a marketing and promotional tool (Carman & Fredericks, 2008), and that political use contributes more directly to performance, it may be that nonprofit executives believe their time is better spent advocating for their nonprofit, not managing its day-to-day operations.

Table 5-4: OLS Regression Comprehensive Models of Performance Information Use

Independent Variables	Purposeful Use		Political Use	
Leadership Support	4.258	(1.256)***	.578	(.690)
Public Service Motivation	-5.357	(3.298)	-4.237	(1.910)*
Perceived Social Impact	-1.866	(2.638)	-1.070	(1.573)
PSM*PSI	5.873	(3.484)	4.745	(2.022)*
Goal Clarity	2.472	(1.148)*	1.637	(.682)*
Organizational Size	-.079	(.088)	.005	(.051)
Support Capacity	-.635	(1.345)	.007	(.774)
Culture	-.383	(1.164)	-.609	(.674)
SupCap*DevCult	.419	(.449)	.238	(.259)
External Support	-.152	(1.066)	.166	(.622)
Internal Support	.403	(1.268)	.969	(.746)
Partnership Activity Level	.665	(.289)*	.601	(.168)***

*** = p<.001; **=p<.01; *p<.05; standard error in parentheses

Still, neither the investigation of information use drivers nor the exploration of information use and performance proves that purposeful information use doesn't relate to organizational performance. They simply highlight that purposeful use alone by nonprofit executives might not result in the performance boons hoped for. However, like Ho's 2011 examination of information use in sub-departmental performance based budgeting, it may be that the real links between purposeful information use and organizational performance occur at the programmatic level, with program and division directors.

Study findings, in tandem with the results from the secondary exploration of organizational performance, suggest a need for further testing and examination of Moynihan's widely accepted four typologies of performance information use (2008), especially for nonprofit organizations. While the information use and organizational performance model offered is incredibly simple, it does highlight that political information use can be a mechanism for improving organizational performance in nonprofits. This doesn't mean that the aforementioned used types are not accurate, but it does call into question the academic insistence that purposeful use is the best way, or at least most doctrinally sound way, to boost performance.

An essential question remains: why and how does political use improve organizational performance? As nonprofits deliver services through service delivery networks and co-management structures, nonprofit managers increasingly "operate through incentives and persuasion rather than hierarchy…exercis[ing] a different kind of power, with an emphasis on charisma and inspiration rather than rule-making" (Brandsen & van Hout, 2006, p. 547): the expectation of nonprofit managers is more salesman than traditional organizational leader. If true, political use by nonprofit executives boosts performance because the environments in which they operate – with pressure from funders, clients, and network partners alike – dictate as much. Perhaps it is for this reason too then, that partnership activity level had such a strong relationship with both kinds of information use. For nonprofit executives operating in networks, it seems it is peer-pressure from partner organizations which has the most consistent impact on executive behavior.

5.3.2 Research Questions and Contributions

Again, the primary research questions asked in this dissertation are:

1) What drives nonprofit executives to use performance information?

2) Are different drivers more likely to promote specific types of use?

To answer question one, generally speaking, this study finds that leadership support, public service motivation, perceived social impact, goal clarity, and activity in a community partnership are important drivers of nonprofit executive performance information use. However, these drivers do not all influence purposeful and political use equally. While goal clarity and activity in a community partnership promote both kinds of use, leadership support is significant only in relation to purposeful use, and PSM and PSI drive political use. The answer to question two is yes, different drivers promote specific types of use.

While this study of performance information use is not the first to include variables like PSM, PSI, support capacity, developmental culture, and stakeholder involvement, it is one of the first to do so exclusively in a nonprofit context. It is also one of the few studies to include dual operationalizations of performance information use. Findings confirm not only that different types of information use exist, but that what drives use is relative to the type of use being assessed and the context in which use occurs. By relying so heavily on investigations of purposeful use in government settings, the existing stream of literature fails to capture important contextual differences and alternative types of use which would render theories of information use more generalizable and better explain information use's relationship with performance. This dissertation demonstrates the importance of evaluating existing evidence in new contexts and exploring the dimensionality of information use.

5.4 Limitations

In addition to the typical caveats of cross-sectional research, the topic area and single information design of this study invite the possibility of social desirability and common-source error. The former describes the tendency of respondents to answer survey items in a way that they believe will be viewed more favorably than their true answer by others. Because performance measurement and management are often cited as best practices within many professions, participating managers may have inflated the degree to which they use performance information within their organization (Lavrakas, 2008). Common source bias occurs "when some of the common variation between two concepts is a function of the common measurement and/or source used to gather the data"; it is nonrandom error caused by method or source (Meier & O'Toole, 2013; Richardson, Simmering, & Sturman, 2009).

To combat social desirability, I did include passages within the survey assuring participants that taking the survey is in no way an evaluation of their work and that their candor is most appreciated. I also limited the frequency of purely perceptual measures in my survey as they are particularly susceptible to the effects of both these biases. As such, despite the prominence of perceptual items to measure performance information use within the literature, I choose behaviorally focused and temporally grounded items which have been shown to be less susceptible to common source bias. In addition, independent variables included in this study are fairly congruent to subjects proven to be less likely to suffer bias (e.g. environmental support, observable behaviors, and managing in networks) (Meier & O'Toole, 2013). Furthermore, while this study does include hypotheses about direct effects, which can be severely impacted by bias, several hypotheses instead test comparative variable relationships within multivariate models.

While this dissertation did utilize a data collection process which sampled from across the United States – an improvement from nonprofit performance measurement and management studies which investigate few organizations, are from a single state, or are case-studies – this study suffers from a less than desirable response rate and, based on one-sample T-tests, is more representative of larger youth development nonprofit organizations. In tandem, these considerations challenge generalizability of these findings. Furthermore, the smaller sample size precluded comprehensive analysis using structural equation modelling which would have standardized errors across operationalizations of the dependent variable allowing for a more comprehensive assessment of the relative weight and effect of each variable in the model. While OLS is common in much of the performance information use literature, it is a crude way to handle independent variables at different units of analysis.

5.5 Future Research

This dissertation inspires many directions for future research. The understudied

nature of performance information use in and outside the nonprofit sector (LeRoux &

Wright, 2010; Moynihan et al., 2012a) means much remains to be explored.

Specific to the drivers of purposeful and political performance information use, and

given the surprising importance of activity in community partnerships in promoting both

types of use, parsing the relative importance of peer-pressure as a form of accountability is a

valuable line of inquiry. In short, are nonprofit executives reacting to norms of their

profession, patterning behavior after other nonprofit executives in their collaboration, or are

they beholden to partner organizations more out of a regional or community sense of

obligation? These kinds of questions help get at the root of whether networks do provide

behavioral oversight commensurate to that of hierarchical organizations, which ultimately

undergirds our understanding of effective network governance (Kroll, 2015a; Moynihan et

al., 2012a).

Further, the lack of significance around organizational characteristics as drivers of

information use is worth reexamining. Results from this study suggest that there are, perhaps,

greater incentives for and pressure on nonprofit executives to use information politically. It is

possible, however, that purposeful use is occurring, just not at the executive level (Ho, 2011).

Future studies should examine information use at the programmatic and division levels with

particular attention to organizational attributes.

This dissertation's focus on youth development organizations is consistent with a

focus on human service nonprofit organizations in assessments of evaluation, performance

measurement, and performance management in the sector (Carnochan et al., 2014; MacIndoe

& Barman, 2013). However, the focus on service-delivery organizations limits the generalizability of findings to related professional settings. If the goal is to develop theories of information use which are not so context dependent, there is an acute need for research which investigates more diverse nonprofit and governmental populations.

Similarly, future studies of information use will benefit from diversity in research methodologies. A limitation common to this and other empirical investigations of information use is a heavy reliance on self-administered surveys. Qualitative and mixed-method approaches would allow for richer data better able to describe the rationale behind an executive decision to use data purposefully, politically, passively, or perversely.

Additionally, the exploratory study of purposeful and political information use and organizational performance finds evidence of a mediating relationship between use types, but does so in an overly simplified model. Important controls, environmental constraints, and possible mediating relationships are needed to fully assess the ways in which performance information use drives performance. Currently, performance information use has become a proxy outcome measure for performance-oriented reforms (Kroll, 2015a; Tantardini & Kroll, 2015), but it is not the true hope of performance management doctrine. Understanding the drivers of different types of information use is important, but as a milestone, not an end-goal. The value in this stream of research will be in future investigations' ability to understand the mechanisms and contingencies through which information use improves, or doesn't improve, organizational performance.

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APPENDICES

Appendix A. Descriptive Statistics

Table A-1: Descriptive Statistics

Imputation Number		N Stat.	Range Stat.	Min. Stat.	Max. Stat.	Mean Stat.	Std. Dev. Stat.	Skewness Stat.	Std. E
Original data	Support Capacity Index	249	3.60	.40	4.00	2.5269	.88552	-.332	.154
	Culture Index	257	4.00	.00	4.00	2.6913	.79702	-.575	.152
	Purpose Index	248	25.00	.00	25.00	13.3629	6.03611	-.089	.155
	Political Index	251	15.00	.00	15.00	9.1793	3.56367	-.174	.154
	External Sup Dummy	256	1.00	.00	1.00	.8008	.40020	-1.515	.152
	Internal Sup Dummy	256	1.00	.00	1.00	.8594	.34832	-2.080	.152
	Leader Sup Dummy	257	1.00	.00	1.00	.8677	.33947	-2.183	.152
	Goal Dummy	258	1.00	.00	1.00	.8837	.32118	-2.408	.152
	PSM Dummy	255	1.00	.00	1.00	.8353	.37164	-1.819	.153
	PSI Dummy	254	1.00	.00	1.00	.9528	.21258	-4.293	.153
	Sqrt FTEs	255	47.96	.00	47.96	3.9483	4.18671	5.714	.153
	Goal Clarity Index	258	4.00	.00	4.00	3.5000	.62187	-1.701	.152
	PSM Index	255	4.00	.00	4.00	3.3984	.53241	-1.570	.153
	PSI Index	254	4.00	.00	4.00	3.7165	.47242	-2.746	.153
	Perf_OrgTopPerf	252	4	0	4	2.93	.925	-.832	.153
	External Sup	256	4	0	4	3.31	.926	-1.249	.152
	Internal Sup	256	4	0	4	3.34	.801	-1.162	.152
	Activity	254	4	0	4	2.31	1.254	-.477	.153
	Leader Sup	257	4	0	4	3.31	.812	-1.192	.152
	Valid N (listwise)	225							
1	Support Capacity Index	260	3.60	.40	4.00	2.5300	.88376	-.331	.151
	Culture Index	260	4.00	.00	4.00	2.6885	.79787	-.573	.151
	Purpose Index	260	25.00	.00	25.00	13.3654	5.96201	-.097	.151
	Political Index	260	15.00	.00	15.00	9.1846	3.53424	-.180	.151
	External Sup Dummy	260	1.00	.00	1.00	.8000	.40077	-1.509	.151
	Internal Sup Dummy	260	1.00	.00	1.00	.8538	.35394	-2.015	.151
	Leader Sup Dummy	260	1.00	.00	1.00	.8692	.33780	-2.203	.151
	Goal Dummy	260	1.00	.00	1.00	.8769	.32916	-2.308	.151
	PSM Dummy	260	1.00	.00	1.00	.8346	.37224	-1.812	.151
	PSI Dummy	260	1.00	.00	1.00	.9500	.21837	-4.153	.151
	Sqrt FTEs	260	47.96	.00	47.96	4.0222	4.24536	5.427	.151
	Goal Clarity Index	260	4.00	.00	4.00	3.4897	.63190	-1.664	.151
	PSM Index	260	4.00	.00	4.00	3.3954	.53131	-1.540	.151
	PSI Index	260	4.00	.00	4.00	3.7144	.47417	-2.682	.151
	Perf_OrgTopPerf	260	4	0	4	2.91	.936	-.790	.151
	External Sup	260	4	0	4	3.30	.943	-1.292	.151
	Internal Sup	260	4	0	4	3.33	.805	-1.128	.151
	Activity	260	4	0	4	2.31	1.266	-.481	.151
	Leader Sup	260	4	0	4	3.31	.809	-1.191	.151
	Valid N (listwise)	260							

Table A-1 Continued

Imputation Number		N Stat.	Range Stat.	Min. Stat.	Max. Stat.	Mean Stat.	Std. Dev. Stat.	Skewness Stat.	Std. E
2	Support Capacity Index	260	3.60	.40	4.00	2.5369	.87524	-.352	.151
	Culture Index	260	4.00	.00	4.00	2.6897	.80185	-.582	.151
	Purpose Index	260	25.00	.00	25.00	13.3308	5.97664	-.081	.151
	Political Index	260	15.00	.00	15.00	9.1538	3.52807	-.157	.151
	External Sup Dummy	260	1.00	.00	1.00	.8000	.40077	-1.509	.151
	Internal Sup Dummy	260	1.00	.00	1.00	.8615	.34605	-2.106	.151
	Leader Sup Dummy	260	1.00	.00	1.00	.8615	.34605	-2.106	.151
	Goal Dummy	260	1.00	.00	1.00	.8808	.32468	-2.364	.151
	PSM Dummy	260	1.00	.00	1.00	.8346	.37224	-1.812	.151
	PSI Dummy	260	1.00	.00	1.00	.9500	.21837	-4.153	.151
	Sqrt FTEs	260	47.96	.00	47.96	4.0198	4.21524	5.491	.151
	Goal Clarity Index	260	4.00	.00	4.00	3.4936	.62649	-1.673	.151
	PSM Index	260	4.00	.00	4.00	3.3969	.53162	-1.547	.151
	PSI Index	260	4.00	.00	4.00	3.7154	.47297	-2.699	.151
	Perf_OrgTopPerf	260	4	0	4	2.92	.930	-.788	.151
	External Sup	260	4	0	4	3.30	.931	-1.239	.151
	Internal Sup	260	4	0	4	3.35	.798	-1.165	.151
	Activity	260	4	0	4	2.28	1.253	-.445	.151
	Leader Sup	260	4	0	4	3.30	.815	-1.154	.151
	Valid N (listwise)	260							
3	Support Capacity Index	260	3.60	.40	4.00	2.5323	.87859	-.325	.151
	Culture Index	260	4.00	.00	4.00	2.6872	.80459	-.592	.151
	Purpose Index	260	25.00	.00	25.00	13.2654	5.98347	-.061	.151
	Political Index	260	15.00	.00	15.00	9.1462	3.51744	-.154	.151
	External Sup Dummy	260	1.00	.00	1.00	.8000	.40077	-1.509	.151
	Internal Sup Dummy	260	1.00	.00	1.00	.8615	.34605	-2.106	.151
	Leader Sup Dummy	260	1.00	.00	1.00	.8692	.33780	-2.203	.151
	Goal Dummy	260	1.00	.00	1.00	.8846	.32010	-2.422	.151
	PSM Dummy	260	1.00	.00	1.00	.8308	.37568	-1.775	.151
	PSI Dummy	260	1.00	.00	1.00	.9538	.21022	-4.351	.151
	Sqrt FTEs	260	47.96	.00	47.96	4.0275	4.21055	5.509	.151
	Goal Clarity Index	260	4.00	.00	4.00	3.4974	.62033	-1.690	.151
	PSM Index	260	4.00	.00	4.00	3.3908	.53905	-1.521	.151
	PSI Index	260	4.00	.00	4.00	3.7144	.47213	-2.698	.151
	Perf_OrgTopPerf	260	4	0	4	2.91	.940	-.805	.151
	External Sup	260	4	0	4	3.30	.943	-1.292	.151
	Internal Sup	260	4	0	4	3.35	.798	-1.165	.151
	Activity	260	4	0	4	2.30	1.257	-.473	.151
	Leader Sup	260	4	0	4	3.31	.810	-1.199	.151
	Valid N (listwise)	260							

Table A-1 Continued

		N	Range	Min.	Max.	Mean	Std. Dev.	Skewness	
Imputation Number		Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Std. E
4	Support Capacity Index	260	3.60	.40	4.00	2.5369	.87453	-.349	.151
	Culture Index	260	4.00	.00	4.00	2.6872	.80032	-.560	.151
	Purpose Index	260	25.00	.00	25.00	13.3346	5.95215	-.081	.151
	Political Index	260	15.00	.00	15.00	9.1923	3.52289	-.180	.151
	External Sup Dummy	260	1.00	.00	1.00	.8000	.40077	-1.509	.151
	Internal Sup Dummy	260	1.00	.00	1.00	.8615	.34605	-2.106	.151
	Leader Sup Dummy	260	1.00	.00	1.00	.8615	.34605	-2.106	.151
	Goal Dummy	260	1.00	.00	1.00	.8808	.32468	-2.364	.151
	PSM Dummy	260	1.00	.00	1.00	.8308	.37568	-1.775	.151
	PSI Dummy	260	1.00	.00	1.00	.9538	.21022	-4.351	.151
	Sqrt FTEs	260	47.96	.00	47.96	4.0567	4.25504	5.374	.151
	Goal Clarity Index	260	4.00	.00	4.00	3.4949	.62376	-1.673	.151
	PSM Index	260	4.00	.00	4.00	3.3931	.53520	-1.529	.151
	PSI Index	260	4.00	.00	4.00	3.7154	.47092	-2.715	.151
	Perf_OrgTopPerf	260	4	0	4	2.94	.924	-.825	.151
	External Sup	260	4	0	4	3.30	.944	-1.307	.151
	Internal Sup	260	4	0	4	3.34	.797	-1.156	.151
	Activity	260	4	0	4	2.30	1.244	-.472	.151
	Leader Sup	260	4	0	4	3.30	.815	-1.154	.151
	Valid N (listwise)	260							
5	Support Capacity Index	260	3.60	.40	4.00	2.5377	.87574	-.346	.151
	Culture Index	260	4.00	.00	4.00	2.6936	.79501	-.575	.151
	Purpose Index	260	25.00	.00	25.00	13.3000	5.96081	-.069	.151
	Political Index	260	15.00	.00	15.00	9.1423	3.52034	-.153	.151
	External Sup Dummy	260	1.00	.00	1.00	.7962	.40363	-1.479	.151
	Internal Sup Dummy	260	1.00	.00	1.00	.8538	.35394	-2.015	.151
	Leader Sup Dummy	260	1.00	.00	1.00	.8654	.34197	-2.154	.151
	Goal Dummy	260	1.00	.00	1.00	.8769	.32916	-2.308	.151
	PSM Dummy	260	1.00	.00	1.00	.8308	.37568	-1.775	.151
	PSI Dummy	260	1.00	.00	1.00	.9500	.21837	-4.153	.151
	Sqrt FTEs	260	47.96	.00	47.96	4.0273	4.23462	5.451	.151
	Goal Clarity Index	260	4.00	.00	4.00	3.4936	.62375	-1.660	.151
	PSM Index	260	4.00	.00	4.00	3.3923	.53273	-1.527	.151
	PSI Index	260	4.00	.00	4.00	3.7096	.48162	-2.668	.151
	Perf_OrgTopPerf	260	4	0	4	2.92	.914	-.825	.151
	External Sup	260	4	0	4	3.30	.935	-1.224	.151
	Internal Sup	260	4	0	4	3.33	.804	-1.119	.151
	Activity	260	4	0	4	2.30	1.254	-.484	.151
	Leader Sup	260	4	0	4	3.30	.813	-1.176	.151
	Valid N (listwise)	260							

Table A-2: Cronbach's Alpha for Goal Clarity

Imputation Number	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Original data	.811	.817	3
1	.817	.822	3
2	.815	.820	3
3	.811	.816	3
4	.811	.816	3
5	.812	.818	3

Table A-3: Perceived Organizational Performance Frequencies

To what extent do you agree with the following statements?

Item	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total
Using performance information has substantially improved my organization	8 (3%)	5 (2%)	48 (19%)	117 (46%)	74 (29%)	252 (100%)
Compared to similar organizations, my organization is a top performer	5 (2%)	12 (5%)	51 (20%)	112 (44%)	72 (29%)	252 (100%)

Table A-4: All Variable Correlation Matrix

		FTEs	External Support	Internal Support	Partnership Activity	Support Capacity	Goal Clarity	Culture	PSM	PSI
FTEs	Pearson Correlation	1	-.171**	.015	.041	.138**	.022	-.038	-.037	-.104**
	Sig. (2-tailed)		.000	.568	.105	.000	.395	.131	.147	.000
	N	1555	1552	1552	1550	1545	1554	1552	1550	1549
External Support	Pearson Correlation	-.171**	1	.588**	.195**	.352**	.175**	.078**	.071**	.162**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.002	.005	.000
	N	1552	1556	1556	1553	1547	1556	1555	1553	1552
Internal Support	Pearson Correlation	.015	.588**	1	.081**	.505**	.404**	.250**	.163**	.262**
	Sig. (2-tailed)	.568	.000		.001	.000	.000	.000	.000	.000
	N	1552	1556	1556	1553	1547	1556	1555	1553	1552
Partnership Activity	Pearson Correlation	.041	.195**	.081**	1	.110**	.069**	.169**	.197**	.093**
	Sig. (2-tailed)	.105	.000	.001		.000	.007	.000	.000	.000
	N	1550	1553	1553	1554	1544	1554	1553	1551	1550
Support Capacity	Pearson Correlation	.138**	.352**	.505**	.110**	1	.386**	.227**	.166**	.256**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000
	N	1545	1547	1547	1544	1549	1548	1546	1544	1544
Goal Clarity	Pearson Correlation	.022	.175**	.404**	.069**	.386**	1	.247**	.284**	.331**
	Sig. (2-tailed)	.395	.000	.000	.007	.000		.000	.000	.000
	N	1554	1556	1556	1554	1548	1558	1556	1554	1553
Culture	Pearson Correlation	-.038	.078**	.250**	.169**	.227**	.247**	1	.368**	.329**
	Sig. (2-tailed)	.131	.002	.000	.000	.000	.000		.000	.000
	N	1552	1555	1555	1553	1546	1556	1557	1555	1554
PSM	Pearson Correlation	-.037	.071**	.163**	.197**	.166**	.284**	.368**	1	.442**
	Sig. (2-tailed)	.147	.005	.000	.000	.000	.000	.000		.000
	N	1550	1553	1553	1551	1544	1554	1555	1555	1553
PSI	Pearson Correlation	-.104**	.162**	.262**	.093**	.256**	.331**	.329**	.442**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
	N	1549	1552	1552	1550	1544	1553	1554	1553	1554

Appendix B. Ordinary Least Squares Models

Table B-1: Purposeful Use Model 1 Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.373	.139	.124	5.62256
1	1	.374	.140	.127	5.57160
2	1	.349	.122	.108	5.64493
3	1	.373	.139	.126	5.59384
4	1	.359	.129	.115	5.59986
5	1	.371	.137	.124	5.57952

Table B-2: Purposeful Use Model 2 Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.390[a]	.152	.129	5.61022
1	1	.413[b]	.170	.151	5.49507
2	1	.399[a]	.159	.139	5.54572
3	1	.410[a]	.168	.148	5.52295
4	1	.401[a]	.161	.141	5.51637
5	1	.403[a]	.162	.142	5.51983

Table B-3: Purposeful Use Model 2 with Support Capacity by Item Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.328[a]	.108	.076	5.78031
1	1	.328[b]	.108	.079	5.72120
2	1	.339[c]	.115	.087	5.71070
3	1	.322[b]	.104	.075	5.75474
4	1	.342[b]	.117	.089	5.68105
5	1	.324[b]	.105	.077	5.72781

Table B-4: Purposeful Use Model 3 Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.392[a]	.154	.136	5.61132
1	1	.404[a]	.163	.147	5.50634
2	1	.392[a]	.153	.137	5.55282
3	1	.397[a]	.158	.141	5.54556
4	1	.397[a]	.158	.141	5.51670
5	1	.397[a]	.158	.141	5.52345

Table B-5: Purposeful Use Model 1 Coefficients

Imputation Number		Model	Unstandardized Coefficients B	Unstandardized Coefficients Beta	Standardized Coefficients Beta	t	Sig.	Fraction Missing Info	Relative Increase Variance	Relative Efficiency
Original data	1	(Constant)	7.243	2.863		2.530	.012			
		Leader Support	5.513	1.087	.314	5.074	.000			
		PSM	-2.965	3.525	-.177	-.841	.401			
		PSI	.459	2.990	.016	.153	.878			
		PSM*PSI	4.116	3.680	.264	1.119	.264			
1	1	(Constant)	8.489	2.570		3.303	.001			
		Leader Support	5.852	1.052	.332	5.560	.000			
		PSM	-4.021	3.176	-.251	-1.266	.207			
		PSI	-.823	2.656	-.030	-.310	.757			
		PSM*PSI	4.887	3.327	.326	1.469	.143			
2	1	(Constant)	9.337	2.364		3.951	.000			
		Leader Support	4.992	1.050	.289	4.756	.000			
		PSM	-4.761	3.141	-.297	-1.516	.131			
		PSI	-1.358	2.499	-.050	-.544	.587			
		PSM*PSI	6.137	3.299	.405	1.860	.064			
3	1	(Constant)	8.664	2.581		3.357	.001			
		(Constant)	5.560	1.059	.314	5.253	.000			
		Leader Support	-4.413	3.276	-.277	-1.347	.179			
		PSM	-1.428	2.663	-.050	-.536	.592			
		PSI	5.967	3.422	.397	1.744	.082			
4	1	(Constant)	9.919	2.539		3.906	.000			
		Leader Support	5.203	1.050	.302	4.954	.000			
		PSM	-5.463	3.284	-.345	-1.664	.097			
		PSI	-2.044	2.684	-.072	-.761	.447			
		PSM*PSI	6.745	3.421	.451	1.971	.050			
5	1	(Constant)	9.180	2.381		3.856	.000			
		Leader Support	5.480	1.040	.314	5.271	.000			
		PSM	-4.883	3.106	-.308	-1.572	.117			
		PSI	-1.704	2.453	-.062	-.695	.488			
		PSM*PSI	6.286	3.265	.420	1.925	.055			
Pooled	1	(Constant)	9.118	2.566		3.554	.000	.061	.063	.988
		Leader Support	5.417	1.111		4.876	.000	.112	.120	.978
		PSM	-4.708	3.251		-1.448	.148	.034	.034	.993
		PSI	-1.472	2.640		-.557	.577	.036	.036	.993
		PSM*PSI	6.004	3.431		1.750	.080	.049	.051	.990

Table B-6: Purposeful Use Model 2 Coefficients

Imputation Number	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Fraction Missing Info	Relative Increase Variance	Relative Efficiency
			B	Std. Error	Beta					
Original data 1		(Constant)	5.513	3.725		1.480	.140			
		Leader Support	4.768	1.172	.269	4.067	.000			
		Goal Clarity	2.634	1.227	.138	2.147	.033			
		Sqrt FTEs	-.080	.118	-.043	-.680	.497			
		Support Capacity	-.313	1.500	-.045	-.209	.835			
		Culture	.219	1.294	.029	.169	.866			
		SupCap*DevCult	.285	.503	.161	.566	.572			
1	1	(Constant)	5.354	3.107		1.723	.086			
		Leader Support	5.217	1.071	.296	4.873	.000			
		Goal Clarity	2.248	1.090	.124	2.062	.040			
		Sqrt FTEs	-.082	.084	-.058	-.966	.335			
		Support Capacity	-.198	1.253	-.029	-.158	.875			
		Culture	.115	1.101	.015	.105	.917			
		SupCap*DevCult	.291	.430	.168	.677	.499			
2	1	(Constant)	5.226	3.138		1.665	.097			
		Leader Support	4.307	1.049	.249	4.105	.000			
		Goal Clarity	2.695	1.113	.146	2.421	.016			
		Sqrt FTEs	-.101	.085	-.071	-1.186	.237			
		Support Capacity	-.079	1.243	-.012	-.063	.950			
		Culture	.261	1.106	.035	.236	.814			
		SupCap*DevCult	.276	.428	.159	.645	.520			
3	1	(Constant)	6.458	3.131		2.062	.040			
		Leader Support	5.105	1.078	.288	4.736	.000			
		Goal Clarity	2.505	1.126	.134	2.224	.027			
		Sqrt FTEs	-.094	.085	-.066	-1.108	.269			
		Support Capacity	-.848	1.252	-.125	-.678	.498			
		Culture	-.246	1.105	-.033	-.223	.824			
		SupCap*DevCult	.480	.429	.277	1.118	.265			

Table B-6 Continued

4	1	(Constant)	5.007	3.128		1.601	.111			
		Leader Support	4.374	1.049	.254	4.171	.000			
		Goal Clarity	2.725	1.109	.149	2.457	.015			
		Sqrt FTEs	-.094	.084	-.067	-1.118	.265			
		Support Capacity	.142	1.235	.021	.115	.908			
		Culture	.270	1.100	.036	.246	.806			
		SupCap*DevCult	.208	.426	.120	.488	.626			
5	1	(Constant)	6.053	3.133		1.932	.054			
		Leader Support	4.920	1.066	.282	4.616	.000			
		Goal Clarity	2.358	1.093	.130	2.158	.032			
		Sqrt FTEs	-.091	.085	-.065	-1.076	.283			
		Support Capacity	-.478	1.267	-.070	-.377	.706			
		Culture	-.008	1.107	-.001	-.008	.994			
		SupCap*DevCult	.361	.433	.208	.833	.405			
Pooled	1	(Constant)	5.620	3.198		1.757	.079	.045	.046	.991
		Leader Support	4.785	1.158		4.133	.000	.168	.187	.967
		Goal Clarity	2.506	1.130		2.219	.027	.041	.042	.992
		Sqrt FTEs	-.092	.085		-1.086	.277	.008	.008	.998
		Support Capacity	-.292	1.319		-.222	.825	.106	.113	.979
		Culture	.078	1.128		.069	.945	.044	.045	.991
		SupCap*DevCult	.323	.444		.728	.467	.067	.069	.987

Table B-7: Purposeful Use Model 2 with Support Capacity by Item Coefficients

Imputation Number	Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Fraction Missing Info.	Relative Increase Variance	Relative Efficiency
Original data	1 (Constant)	5.129	1.876		2.735	.007			
	SC_AdequateResources	-.506	.433	-.100	-1.168	.244			
	SC_Outputs&Operations	.709	.534	.111	1.327	.186			
	SC_CollectTimely	-.402	.570	-.068	-.706	.481			
	SC_StaffAnalyze	.804	.480	.154	1.674	.096			
	SC_AdequateIT	.416	.440	.079	.944	.346			
	Goal Clarity	3.654	1.278	.191	2.860	.005			
	Culture	.983	.493	.129	1.996	.047			
	Sqrt_FTEs	-.031	.124	-.017	-.251	.802			
1	1 (Constant)	6.120	1.662		3.683	.000			
	SC_AdequateResources	-.292	.408	-.059	-.717	.474			
	SC_Outputs&Operations	.627	.491	.103	1.278	.202			
	SC_CollectTimely	-.572	.535	-.098	-1.071	.285			
	SC_StaffAnalyze	.787	.437	.153	1.803	.073			
	SC_AdequateIT	.566	.408	.112	1.386	.167			
	Goal Clarity	3.088	1.152	.170	2.679	.008			
	Culture	.870	.462	.116	1.884	.061			
	Sqrt_FTEs	-.111	.088	-.079	-1.255	.211			
2	1 (Constant)	5.440	1.696		3.208	.002			
	SC_AdequateResources	-.331	.406	-.066	-.816	.415			
	SC_Outputs&Operations	.588	.488	.095	1.204	.230			
	SC_CollectTimely	-.396	.528	-.067	-.750	.454			
	SC_StaffAnalyze	.677	.432	.131	1.566	.119			
	SC_AdequateIT	.533	.400	.106	1.332	.184			
	Goal Clarity	3.409	1.158	.185	2.943	.004			
	Culture	1.021	.456	.137	2.237	.026			
	Sqrt_FTEs	-.115	.090	-.081	-1.282	.201			
3	1 (Constant)	5.927	1.703		3.480	.001			
	SC_AdequateResources	-.210	.404	-.042	-.521	.603			
	SC_Outputs&Operations	.544	.493	.088	1.103	.271			
	SC_CollectTimely	-.541	.536	-.092	-1.009	.314			
	SC_StaffAnalyze	.656	.438	.127	1.498	.136			
	SC_AdequateIT	.511	.408	.101	1.251	.212			
	Goal Clarity	3.387	1.189	.181	2.850	.005			
	Culture	.970	.460	.130	2.109	.036			
	Sqrt_FTEs	-.130	.088	-.092	-1.482	.140			

Table B-7 Continued

4	1	(Constant)	5.553	1.684			3.299	.001			
		SC_AdequateResources	-.283	.402	-.057		-.704	.482			
		SC_Outputs&Operations	.633	.490	.102		1.292	.197			
		SC_CollectTimely	-.532	.530	-.091		-1.003	.317			
		SC_StaffAnalyze	.690	.436	.135		1.583	.115			
		SC_AdequateIT	.577	.403	.114		1.431	.154			
		Goal Clarity	3.686	1.152	.201		3.201	.002			
		Culture	.887	.456	.119		1.946	.053			
		Sqrt_FTEs	-.110	.088	-.078		-1.248	.213			
5	1	(Constant)	5.949	1.687			3.527	.000			
		SC_AdequateResources	-.220	.403	-.044		-.546	.586			
		SC_Outputs&Operations	.718	.496	.116		1.447	.149			
		SC_CollectTimely	-.539	.533	-.092		-1.010	.313			
		SC_StaffAnalyze	.839	.438	.163		1.914	.057			
		SC_AdequateIT	.226	.404	.045		.558	.577			
		Goal Clarity	3.251	1.146	.180		2.838	.005			
		Culture	.907	.464	.121		1.957	.051			
		Sqrt_FTEs	-.116	.089	-.083		-1.313	.190			
Pooled	1	(Constant)	5.798	1.715			3.380	.001	.034	.035	.993
		SC_AdequateResources	-.268	.408			-.655	.513	.019	.019	.996
		SC_Outputs&Operations	.622	.497			1.252	.210	.020	.021	.996
		SC_CollectTimely	-.516	.538			-.959	.337	.020	.020	.996
		SC_StaffAnalyze	.730	.445			1.641	.101	.039	.039	.992
		SC_AdequateIT	.483	.435			1.108	.269	.143	.156	.972
		Goal Clarity	3.364	1.184			2.840	.005	.043	.044	.992
		Culture	.931	.465			2.004	.045	.022	.023	.996
		Sqrt_FTEs	-.116	.089			-1.309	.191	.011	.011	.998

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Table B-8: Purposeful Use Model 3 Coefficients

Imputation Number	Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Fraction Missing Info.	Relative Increase Variance	Relative Efficiency
Original data	1 (Constant)	4.630	1.512		3.063	.002			
	Leader Support	4.897	1.182	.275	4.144	.000			
	Goal Clarity	2.987	1.175	.159	2.543	.012			
	Ext Support	-.167	1.071	-.011	-.156	.876			
	Int Support	.472	1.274	.027	.371	.711			
	Activity	.682	.297	.140	2.298	.022			
1	1 (Constant)	4.660	1.397		3.336	.001			
	Leader Support	5.322	1.130	.302	4.709	.000			
	Goal Clarity	2.568	1.078	.142	2.382	.018			
	Ext Support	.079	1.039	.005	.076	.939			
	Int Support	.412	1.204	.024	.343	.732			
	Activity	.612	.275	.130	2.228	.027			
2	1 (Constant)	4.551	1.433		3.177	.002			
	Leader Support	4.412	1.097	.255	4.023	.000			
	Goal Clarity	3.041	1.097	.165	2.773	.006			
	Ext Support	.222	1.042	.015	.213	.832			
	Int Support	.513	1.225	.030	.419	.676			
	Activity	.735	.280	.154	2.630	.009			
3	1 (Constant)	4.619	1.437		3.215	.001			
	Leader Support	5.220	1.136	.295	4.595	.000			
	Goal Clarity	2.733	1.115	.146	2.452	.015			
	Ext Support	-.037	1.044	-.002	-.035	.972			
	Int Support	.274	1.227	.016	.223	.824			
	Activity	.644	.279	.135	2.311	.022			
4	1 (Constant)	4.659	1.416		3.291	.001			
	Leader Support	4.595	1.095	.267	4.197	.000			
	Goal Clarity	3.055	1.095	.167	2.789	.006			
	Ext Support	.130	1.037	.009	.126	.900			
	Int Support	.333	1.215	.019	.274	.784			
	Activity	.710	.280	.148	2.534	.012			
5	1 (Constant)	4.837	1.384		3.495	.001			
	Leader Support	4.949	1.136	.284	4.358	.000			
	Goal Clarity	2.565	1.081	.142	2.372	.018			
	Ext Support	-.198	1.049	-.013	-.189	.850			
	Int Support	.616	1.228	.037	.502	.616			
	Activity	.678	.279	.143	2.430	.016			
Pooled	1 (Constant)	4.665	1.418		3.290	.001	.007	.007	.999
	Leader Support	4.900	1.198		4.089	.000	.135	.147	.974
	Goal Clarity	2.793	1.125		2.482	.013	.058	.059	.989
	Ext Support	.039	1.057		.037	.970	.029	.029	.994
	Int Support	.430	1.229		.350	.727	.015	.015	.997
	Activity	.676	.284		2.383	.017	.037	.038	.993

Table B-9: Purposeful Use Model 4 Coefficients

Imputation Number	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Fraction Missing Info.	Relative Increase Variance	Relative Efficiency
		B	Std. Error	Beta					
Original data 1	(Constant)	6.173	4.172		1.479	.140			
	Leader Support	4.420	1.266	.253	3.492	.001			
	PSM	-3.121	3.686	-.185	-.847	.398			
	PSI	.759	3.116	.026	.244	.808			
	PSM*PSI	3.448	3.854	.219	.895	.372			
	Goal Clarity	2.728	1.237	.145	2.206	.028			
	Sqrt FTEs	-.103	.127	-.052	-.814	.417			
	Support Capacity	-1.157	1.600	-.166	-.723	.470			
	Culture	-.793	1.382	-.103	-.574	.567			
	SupCap*DevCult	.561	.532	.315	1.053	.293			
	Ext Support	-.289	1.113	-.019	-.260	.795			
	Int Support	.023	1.376	.001	.017	.987			
	Active	.804	.318	.162	2.525	.012			
1	1 (Constant)	6.892	3.738		1.844	.066			
	Leader Support	4.855	1.159	.275	4.189	.000			
	PSM	-4.280	3.168	-.267	-1.351	.178			
	PSI	-1.119	2.648	-.041	-.423	.673			
	PSM*PSI	4.359	3.322	.291	1.312	.191			
	Goal Clarity	2.165	1.118	.120	1.937	.054			
	Sqrt FTEs	-.069	.087	-.049	-.785	.433			
	Support Capacity	-.588	1.288	-.087	-.457	.648			
	Culture	-.387	1.136	-.052	-.341	.733			
	SupCap*DevCult	.410	.436	.237	.938	.349			
	Ext Support	-.014	1.061	-.001	-.014	.989			
	Int Support	.104	1.231	.006	.084	.933			
	Active	.591	.281	.126	2.100	.037			
2	1 (Constant)	6.622	3.481		1.902	.058			
	Leader Support	3.707	1.129	.215	3.284	.001			
	PSM	-5.802	3.140	-.361	-1.848	.066			
	PSI	-2.041	2.490	-.075	-.820	.413			
	PSM*PSI	6.346	3.278	.419	1.936	.054			
	Goal Clarity	2.695	1.124	.146	2.397	.017			
	Sqrt FTEs	-.084	.088	-.059	-.956	.340			
	Support Capacity	-.374	1.277	-.055	-.293	.770			
	Culture	-.153	1.143	-.021	-.134	.893			
	SupCap*DevCult	.346	.433	.199	.799	.425			
	Ext Support	-.076	1.061	-.005	-.072	.943			
	Int Support	.594	1.261	.034	.471	.638			
	Active	.712	.285	.149	2.501	.013			

Table B-9 Continued

3	1(Constant)	7.922	3.725		2.127	.034			
	Leader Support	4.514	1.165	.255	3.876	.000			
	PSM	-4.900	3.288	-.308	-1.490	.137			
	PSI	-1.643	2.642	-.058	-.622	.535			
	PSM*PSI	5.717	3.432	.380	1.666	.097			
	Goal Clarity	2.449	1.138	.131	2.152	.032			
	Sqrt FTEs	-.086	.088	-.061	-.983	.326			
	Support Capacity	-1.220	1.274	-.179	-.957	.339			
	Culture	-.754	1.128	-.101	-.668	.504			
	SupCap*DevCult	.583	.432	.337	1.350	.178			
	Ext Support	-.211	1.061	-.014	-.198	.843			
	Int Support	.449	1.268	.026	.354	.723			
	Active	.642	.285	.135	2.256	.025			
4	1(Constant)	6.921	3.707		1.867	.063			
	Leader Support	3.901	1.137	.227	3.432	.001			
	PSM	-5.967	3.269	-.377	-1.825	.069			
	PSI	-2.122	2.649	-.075	-.801	.424			
	PSM*PSI	6.430	3.405	.430	1.888	.060			
	Goal Clarity	2.688	1.120	.147	2.400	.017			
	Sqrt FTEs	-.080	.086	-.057	-.923	.357			
	Support Capacity	-.258	1.260	-.038	-.204	.838			
	Culture	-.223	1.124	-.030	-.198	.843			
	SupCap*DevCult	.318	.429	.183	.741	.460			
	Ext Support	-.179	1.056	-.012	-.170	.865			
	Int Support	.447	1.256	.026	.356	.722			
	Active	.702	.286	.147	2.456	.015			
5	1(Constant)	7.872	3.481		2.261	.025			
	Leader Support	4.313	1.159	.247	3.721	.000			
	PSM	-5.833	3.124	-.368	-1.868	.063			
	PSI	-2.405	2.470	-.088	-.974	.331			
	PSM*PSI	6.513	3.265	.435	1.995	.047			
	Goal Clarity	2.362	1.105	.130	2.137	.034			
	Sqrt FTEs	-.078	.087	-.055	-.891	.374			
	Support Capacity	-.735	1.300	-.108	-.565	.572			
	Culture	-.397	1.146	-.053	-.346	.730			
	SupCap*DevCult	.438	.440	.252	.996	.320			
	Ext Support	-.280	1.060	-.019	-.264	.792			
	Int Support	.421	1.246	.025	.338	.736			
	Active	.680	.284	.143	2.392	.018			
Pooled	1(Constant)	7.246	3.688		1.964	.050	.033	.033	.993
	Leader Support	4.258	1.256		3.389	.001	.174	.194	.966
	PSM	-5.357	3.298		-1.624	.105	.061	.063	.988
	PSI	-1.866	2.638		-.707	.479	.044	.045	.991
	PSM*PSI	5.873	3.484		1.686	.092	.084	.088	.984
	Goal Clarity	2.472	1.148		2.153	.031	.047	.049	.991
	Sqrt FTEs	-.079	.088		-.905	.366	.007	.007	.999
	Support Capacity	-.635	1.345		-.472	.637	.098	.103	.981
	Culture	-.383	1.164		-.329	.742	.049	.050	.990
	SupCap*DevCult	.419	.449		.934	.351	.066	.068	.987
	Ext Support	-.152	1.066		-.143	.887	.012	.012	.998
	Int Support	.403	1.268		.318	.751	.025	.025	.995
	Active	.665	.289		2.300	.021	.036	.036	.993

Table B-10: Political Use Model 1 Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.289[a]	.083	.068	3.44514
1	1	.290[a]	.084	.070	3.40864
2	1	.284[a]	.081	.067	3.40874
3	1	.289[a]	.084	.069	3.39366
4	1	.267[a]	.071	.057	3.42166
5	1	.292[a]	.085	.071	3.39370

Table B-11: Political Use Model 2 Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.395[a]	.156	.122	3.30696
1	1	.397[b]	.158	.127	3.30176
2	1	.394[c]	.155	.125	3.30021
3	1	.399[d]	.159	.129	3.28349
4	1	.393[c]	.154	.124	3.29729
5	1	.401[c]	.161	.130	3.28291

Table B-12: Political Use Model 3 Summary

Imputation Number	Model	R	R Square	Adj. R Square	Std. Error of Est.
Original data	1	.439[a]	.192	.168	3.23342
1	1	.424[b]	.180	.157	3.24533
2	1	.418[c]	.175	.152	3.24941
3	1	.426[b]	.182	.159	3.22561
4	1	.426[b]	.181	.159	3.23130
5	1	.431[c]	.186	.163	3.21973

Table B-13: Political Use Model 1 Coefficients

Imputation Number	Model	Unstandardized Coefficients B	Unstandardized Coefficients Beta	Standardized Coefficients Beta	t	Sig.	Fraction Missing Info	Relative Increase Variance	Relative Efficiency
Original data	1 (Constant)	6.522	1.754		3.719	.000			
	Leader Support	1.956	.659	.190	2.969	.003			
	PSM	-2.068	2.160	-.210	-.958	.339			
	PSI	.187	1.828	.011	.102	.919			
	PSM*PSI	3.071	2.253	.333	1.363	.174			
1	1 (Constant)	7.360	1.573		4.680	.000			
	Leader Support	2.066	.644	.197	3.209	.002			
	PSM	-3.152	1.943	-.332	-1.622	.106			
	PSI	-.542	1.625	-.034	-.334	.739			
	PSM*PSI	3.949	2.035	.444	1.940	.053			
2	1 (Constant)	8.048	1.427		5.639	.000			
	Leader Support	1.905	.634	.187	3.006	.003			
	PSM	-3.565	1.897	-.376	-1.879	.061			
	PSI	-1.435	1.509	-.089	-.951	.343			
	PSM*PSI	4.709	1.992	.527	2.364	.019			
3	1 (Constant)	7.414	1.566		4.735	.000			
	Leader Support	1.976	.642	.190	3.077	.002			
	PSM	-2.972	1.987	-.317	-1.496	.136			
	PSI	-.857	1.616	-.051	-.531	.596			
	PSM*PSI	4.107	2.076	.465	1.978	.049			
4	1 (Constant)	7.904	1.552		5.094	.000			
	Leader Support	1.739	.642	.171	2.710	.007			
	PSM	-3.327	2.007	-.355	-1.658	.099			
	PSI	-.890	1.640	-.053	-.542	.588			
	PSM*PSI	4.232	2.091	.478	2.025	.044			
5	1 (Constant)	7.278	1.448		5.025	.000			
	Leader Support	2.083	.632	.202	3.295	.001			
	PSM	-2.897	1.889	-.309	-1.533	.126			
	PSI	-.710	1.492	-.044	-.476	.635			
	PSM*PSI	3.909	1.986	.442	1.968	.050			
Pooled	1 (Constant)	7.601	1.562		4.866	.000	.062	.064	.988
	Leader Support	1.954	.657		2.974	.003	.056	.058	.989
	PSM	-3.182	1.968		-1.617	.106	.023	.023	.995
	PSI	-.887	1.620		-.547	.584	.053	.054	.990
	PSM*PSI	4.181	2.067		2.023	.043	.030	.030	.994

Table B-14: Political Use Model 2 Coefficients

Imputation Number	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Fraction Missing Info	Relative Increase Variance	Relative Efficiency
		B	Std. Error	Beta					
Original data	(Constant)	5.104	2.455		2.079	.039			
	Leader Support	.820	.689	.080	1.189	.236			
	PSM	-2.190	2.166	-.224	-1.011	.313			
	PSI	-.333	1.828	-.019	-.182	.856			
	PSM*PSI	2.873	2.246	.313	1.279	.202			
	Goal Clarity	1.601	.712	.145	2.247	.026			
	Sqrt FTEs	.072	.070	.066	1.038	.300			
	Support Capacity	.535	.925	.132	.579	.563			
	Culture	-.232	.806	-.051	-.288	.774			
	SupCap*DevCult	.117	.307	.114	.381	.704			
1	(Constant)	5.567	2.247		2.478	.014			
	Leader Support	1.305	.651	.125	2.004	.046			
	PSM	-3.288	1.895	-.346	-1.735	.084			
	PSI	-.646	1.591	-.040	-.406	.685			
	PSM*PSI	3.642	1.984	.410	1.836	.068			
	Goal Clarity	1.515	.660	.141	2.297	.022			
	Sqrt FTEs	.010	.052	.013	.201	.841			
	Support Capacity	.437	.762	.109	.574	.567			
	Culture	-.181	.677	-.041	-.268	.789			
	SupCap*DevCult	.133	.261	.130	.509	.611			
2	(Constant)	6.453	2.083		3.098	.002			
	Leader Support	1.215	.636	.119	1.911	.057			
	PSM	-4.340	1.877	-.458	-2.312	.022			
	PSI	-1.856	1.494	-.115	-1.243	.215			
	PSM*PSI	5.065	1.955	.567	2.590	.010			
	Goal Clarity	1.505	.666	.139	2.260	.025			
	Sqrt FTEs	.019	.052	.023	.369	.713			
	Support Capacity	.457	.753	.113	.607	.544			
	Culture	-.198	.679	-.045	-.292	.770			
	SupCap*DevCult	.132	.258	.128	.510	.611			
3	(Constant)	6.111	2.226		2.746	.006			
	Leader Support	1.194	.651	.115	1.835	.068			
	PSM	-3.434	1.950	-.367	-1.761	.079			
	PSI	-.925	1.575	-.055	-.587	.558			
	PSM*PSI	4.154	2.028	.470	2.048	.042			
	Goal Clarity	1.830	.671	.167	2.726	.007			
	Sqrt FTEs	.015	.052	.018	.285	.776			
	Support Capacity	.075	.749	.019	.101	.920			
	Culture	-.402	.668	-.092	-.603	.547			
	SupCap*DevCult	.231	.256	.227	.900	.369			
4	(Constant)	5.856	2.231		2.625	.009			
	Leader Support	.924	.644	.091	1.436	.152			
	PSM	-3.634	1.958	-.388	-1.856	.065			
	PSI	-.805	1.594	-.048	-.505	.614			
	PSM*PSI	4.091	2.033	.462	2.012	.045			
	Goal Clarity	1.745	.666	.161	2.620	.009			
	Sqrt FTEs	.011	.051	.013	.206	.837			
	Support Capacity	.473	.744	.118	.636	.525			
	Culture	-.264	.669	-.060	-.395	.693			
	SupCap*DevCult	.139	.256	.135	.542	.589			

Table B-14 Continued

5	(Constant)	5.754	2.082		2.763	.006			
	Leader Support	1.256	.641	.122	1.959	.051			
	PSM	-3.818	1.867	-.407	-2.045	.042			
	PSI	-1.298	1.479	-.081	-.878	.381			
	PSM*PSI	4.456	1.948	.504	2.288	.023			
	Goal Clarity	1.658	.653	.155	2.538	.012			
	Sqrt FTEs	.014	.052	.016	.261	.794			
	Support Capacity	.447	.767	.111	.583	.560			
	Culture	-.142	.679	-.032	-.209	.835			
	SupCap*DevCult	.124	.261	.120	.473	.637			
Pooled	(Constant)	5.948	2.207		2.695	.007	.030	.030	.994
	Leader Support	1.179	.665		1.773	.076	.062	.064	.988
	PSM	-3.703	1.962		-1.888	.059	.053	.055	.989
	PSI	-1.106	1.635		-.676	.499	.110	.117	.979
	PSM*PSI	4.282	2.072		2.067	.039	.080	.084	.984
	Goal Clarity	1.651	.681		2.423	.016	.053	.055	.989
	Sqrt FTEs	.014	.052		.264	.792	.006	.006	.999
	Support Capacity	.378	.778		.486	.627	.059	.061	.988
	Culture	-.238	.684		-.348	.728	.027	.028	.995
	SupCap*DevCult	.151	.263		.576	.565	.035	.036	.993

Table B-15: Political Use Model 3 Coefficients

Imputation Number	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Fraction Missing Info.	Relative Increase Variance	Relative Efficiency
			B	Std. Error	Beta					
Original data	1	(Constant)	4.424	1.592		2.779	.006			
		PSM	-3.690	1.976	-.375	-1.867	.063			
		PSI	-1.264	1.565	-.074	-.808	.420			
		PSM*PSI	4.726	2.071	.511	2.282	.023			
		Goal Clarity	2.249	.665	.206	3.384	.001			
		Ext Support	.274	.610	.031	.449	.654			
		Int Support	1.544	.720	.152	2.146	.033			
		Activity	.715	.173	.248	4.123	.000			
1	1	(Constant)	4.760	1.585		3.004	.003			
		PSM	-3.904	1.861	-.411	-2.098	.037			
		PSI	-.648	1.551	-.040	-.418	.677			
		PSM*PSI	4.392	1.949	.494	2.254	.025			
		Goal Clarity	1.944	.640	.181	3.036	.003			
		Ext Support	.539	.603	.061	.894	.372			
		Int Support	1.389	.693	.139	2.004	.046			
		Activity	.627	.163	.225	3.850	.000			
2	1	(Constant)	5.254	1.464		3.590	.000			
		PSM	-4.784	1.827	-.505	-2.619	.009			
		PSI	-1.568	1.436	-.097	-1.092	.276			
		PSM*PSI	5.674	1.912	.635	2.967	.003			
		Goal Clarity	1.961	.646	.180	3.036	.003			
		Ext Support	.449	.603	.051	.745	.457			
		Int Support	1.534	.707	.151	2.169	.031			
		Activity	.609	.165	.216	3.698	.000			
3	1	(Constant)	4.620	1.580		2.924	.004			
		PSM	-4.226	1.909	-.451	-2.214	.028			
		PSI	-1.030	1.541	-.062	-.669	.504			
		PSM*PSI	5.096	1.990	.576	2.561	.011			
		Goal Clarity	2.255	.648	.205	3.478	.001			
		Ext Support	.431	.599	.049	.720	.472			
		Int Support	1.383	.704	.136	1.964	.051			
		Activity	.604	.163	.216	3.700	.000			

Table B-15 Continued

			B	Std. Error	Beta	t	Sig.			
4	1	(Constant)	4.576	1.582		2.892	.004			
		PSM	-4.264	1.912	-.455	-2.230	.027			
		PSI	-.774	1.544	-.046	-.501	.617			
		PSM*PSI	4.869	1.994	.550	2.441	.015			
		Goal Clarity	2.189	.642	.202	3.411	.001			
		Ext Support	.448	.600	.051	.747	.456			
		Int Support	1.406	.705	.138	1.995	.047			
		Activity	.644	.165	.228	3.902	.000			
5	1	(Constant)	4.827	1.443		3.345	.001			
		PSM	-4.270	1.802	-.456	-2.370	.019			
		PSI	-1.178	1.420	-.073	-.829	.408			
		PSM*PSI	5.058	1.884	.572	2.684	.008	.036	.037	.993
		Goal Clarity	2.037	.631	.190	3.227	.001	.034	.034	.993
		Ext Support	.376	.603	.043	.623	.534	.067	.070	.987
		Int Support	1.660	.695	.167	2.388	.018	.065	.067	.987
		Activity	.613	.164	.218	3.745	.000	.054	.056	.989
Pooled	1	(Constant)	4.808	1.560		3.081	.002	.036	.037	.993
		PSM	-4.290	1.894		-2.264	.024	.034	.034	.993
		PSI	-1.040	1.551		-.670	.503	.067	.070	.987
		PSM*PSI	5.018	2.011		2.495	.013	.065	.067	.987
		Goal Clarity	2.077	.659		3.151	.002	.054	.056	.989
		Ext Support	.449	.605		.742	.458	.011	.011	.998
		Int Support	1.474	.713		2.067	.039	.035	.036	.993
		Activity	.619	.165		3.757	.000	.012	.012	.998

Table B-16: Political Use Model 4 Coefficients

Imputation Number	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Fraction Missing Info.	Relative Increase Variance	Relative Efficiency
		B	Std. Error	Beta					
Original data 1	(Constant)	4.375	2.396		1.826	.069			
	Leader Support	.173	.729	.017	.238	.812			
	PSM	-3.128	2.127	-.319	-1.471	.143			
	PSI	-.700	1.787	-.040	-.391	.696			
	PSM*PSI	3.805	2.218	.413	1.715	.088			
	Goal Clarity	1.671	.699	.153	2.391	.018			
	Sqrt FTEs	.064	.073	.055	.871	.385			
	Support Capacity	.415	.919	.102	.452	.652			
	Culture	-.435	.793	-.096	-.548	.584			
	SupCap*DevCult	.118	.305	.114	.386	.700			
	Ext Support	.053	.643	.006	.082	.935			
	Int Support	1.001	.790	.097	1.268	.206			
	Activity	.681	.183	.235	3.720	.000			
1	1 (Constant)	5.212	2.192		2.377	.018			
	Leader Support	.713	.680	.068	1.049	.295			
	PSM	-3.882	1.858	-.409	-2.089	.038			
	PSI	-.679	1.553	-.042	-.437	.663			
	PSM*PSI	4.149	1.948	.467	2.130	.034			
	Goal Clarity	1.467	.655	.137	2.238	.026			
	Sqrt FTEs	.008	.051	.009	.153	.879			
	Support Capacity	.118	.755	.029	.156	.876			
	Culture	-.534	.666	-.120	-.801	.424			
	SupCap*DevCult	.202	.256	.197	.790	.431			
	Ext Support	.195	.622	.022	.314	.754			
	Int Support	.901	.722	.090	1.248	.213			
	Activity	.602	.165	.216	3.648	.000			
2	1 (Constant)	5.873	2.041		2.878	.004			
	Leader Support	.645	.662	.063	.975	.331			
	PSM	-4.783	1.841	-.505	-2.599	.010			
	PSI	-1.676	1.460	-.104	-1.148	.252			
	PSM*PSI	5.435	1.922	.608	2.828	.005			
	Goal Clarity	1.498	.659	.138	2.272	.024			
	Sqrt FTEs	.009	.051	.011	.184	.854			
	Support Capacity	.118	.749	.029	.157	.875			
	Culture	-.558	.670	-.127	-.834	.405			
	SupCap*DevCult	.209	.254	.203	.822	.412			
	Ext Support	.157	.622	.018	.252	.801			
	Int Support	.973	.739	.095	1.317	.189			
	Activity	.589	.167	.209	3.527	.001			

Table B-16 Continued

			B	Std. Error	Beta	t	Sig.			
3	1	(Constant)	5.828	2.176		2.678	.008			
		Leader Support	.633	.680	.061	.930	.353			
		PSM	-4.032	1.921	-.431	-2.098	.037			
		PSI	-.985	1.544	-.059	-.638	.524			
		PSM*PSI	4.680	2.005	.529	2.334	.020			
		Goal Clarity	1.853	.665	.169	2.787	.006			
		Sqrt FTEs	.000	.051	.000	-.003	.998			
		Support Capacity	-.301	.744	-.075	-.405	.686			
		Culture	-.760	.659	-.174	-1.153	.250			
		SupCap*DevCult	.319	.252	.313	1.264	.207			
		Ext Support	.190	.620	.022	.306	.760			
		Int Support	.856	.741	.084	1.155	.249			
		Activity	.587	.166	.210	3.527	.001			
4	1	(Constant)	5.464	2.173		2.515	.013			
		Leader Support	.360	.666	.035	.541	.589			
		PSM	-4.191	1.917	-.447	-2.187	.030			
		PSI	-.785	1.553	-.047	-.506	.613			
		PSM*PSI	4.597	1.996	.519	2.303	.022			
		Goal Clarity	1.764	.657	.163	2.686	.008			
		Sqrt FTEs	-.002	.051	-.002	-.040	.968			
		Support Capacity	.049	.739	.012	.067	.947			
		Culture	-.669	.659	-.152	-1.016	.310			
		SupCap*DevCult	.240	.251	.234	.955	.340			
		Ext Support	.181	.619	.021	.292	.771			
		Int Support	.932	.736	.092	1.266	.207			
		Activity	.634	.167	.224	3.785	.000			
5	1	(Constant)	5.337	2.032		2.626	.009			
		Leader Support	.539	.677	.052	.797	.426			
		PSM	-4.296	1.823	-.458	-2.356	.019			
		PSI	-1.227	1.442	-.076	-.851	.396			
		PSM*PSI	4.866	1.906	.550	2.553	.011			
		Goal Clarity	1.605	.645	.150	2.487	.014			
		Sqrt FTEs	.011	.051	.013	.215	.830			
		Support Capacity	.053	.759	.013	.070	.944			
		Culture	-.525	.669	-.119	-.784	.434			
		SupCap*DevCult	.218	.257	.213	.850	.396			
		Ext Support	.109	.619	.012	.176	.861			
		Int Support	1.184	.727	.119	1.628	.105			
		Activity	.592	.166	.211	3.568	.000			
Pooled	1	(Constant)	5.543	2.149		2.580	.010	.023	.023	.995
		Leader Support	.578	.690		.838	.402	.048	.049	.990
		PSM	-4.237	1.910		-2.218	.027	.040	.040	.992
		PSI	-1.070	1.573		-.681	.496	.079	.083	.984
		PSM*PSI	4.745	2.022		2.347	.019	.066	.068	.987
		Goal Clarity	1.637	.682		2.402	.017	.075	.078	.985
		Sqrt FTEs	.005	.051		.101	.919	.016	.016	.997
		Support Capacity	.007	.774		.009	.992	.064	.066	.987
		Culture	-.609	.674		-.904	.366	.028	.028	.994
		SupCap*DevCult	.238	.259		.916	.360	.041	.042	.992
		Ext Support	.166	.622		.267	.789	.004	.004	.999
		Int Support	.969	.746		1.298	.194	.036	.036	.993
		Activity	.601	.168		3.582	.000	.016	.016	.997

Appendix C. Structural Equation Models

Figure C-1: Support Capacity and Developmental Culture Initial Measurement Model
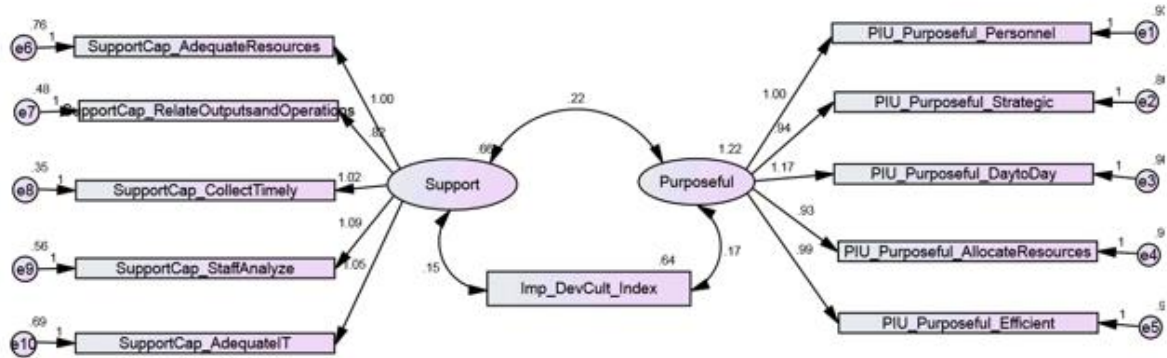
Table C-1: Support Capacity and Developmental Culture Initial Measurement Model Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
Imp_DevCult_Index	.000	4.000	-.578	-3.808	.452	1.488
Support5	.000	4.000	-.318	-2.092	-.879	-2.893
Support4	.000	4.000	-.408	-2.685	-.908	-2.989
Support3	.000	4.000	-.798	-5.256	-.120	-.395
Support2	.000	4.000	-.770	-5.068	.156	.514
Support1	.000	4.000	-.268	-1.763	-1.139	-3.748
Purpose5	.000	5.000	.078	.512	-.901	-2.967
Purpose4	.000	5.000	.216	1.425	-.905	-2.980
Purpose3	.000	5.000	-.831	-5.467	-.283	-.931
Purpose2	.000	5.000	.307	2.018	-.781	-2.571
Purpose1	.000	5.000	.203	1.334	-.846	-2.783
Multivariate					10.007	4.771

Table C-2: Support Capacity and Developmental Culture Initial Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	24	66.340	42	.010	1.580
Saturated model	66	.000	0		
Independence model	11	1178.052	55	.000	21.419

Table C-3: Support Capacity and Developmental Culture Initial Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2
Default model	.944	.926	.979	.972
Saturated model	1.000		1.000	
Independence model	.000	.000	.000	.000

Table C-4: Support Capacity and Developmental Culture Initial Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.764	.721	.747
Saturated model	.000	.000	.000

Table C-5: Support Capacity and Developmental Culture Initial Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90
Default model	.047	.024	.068
Independence model	.281	.267	.295

Table C-6: Support Capacity and Developmental Culture Initial Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Purposeful	<-->	Support	.222	.069	3.216	.001	par_9
Purposeful	<-->	Imp_DevCult_Index	.173	.061	2.847	.004	par_10
Support	<-->	Imp_DevCult_Index	.150	.046	3.259	.001	par_11

Table C-7: Support Capacity and Developmental Culture Initial Measurement Model Covariance Modification Index

			M.I.	Par Change
e10	<-->	Imp_DevCult_Index	.253	-.022
e10	<-->	Purposeful	.495	.045
e9	<-->	Imp_DevCult_Index	.231	-.019
e9	<-->	Purposeful	.225	.028
e9	<-->	e10	2.202	-.068
e8	<-->	Imp_DevCult_Index	.759	-.029
e8	<-->	Support	.289	.019
e8	<-->	Purposeful	1.879	-.068
e8	<-->	e10	.548	-.028
e8	<-->	e9	8.338	.100
e7	<-->	Imp_DevCult_Index	2.066	.051
e7	<-->	Support	.397	-.024
e7	<-->	Purposeful	1.305	.060
e7	<-->	e10	.038	.008
e7	<-->	e9	1.994	-.054

Table C-7 Continued

e7	<-->	e8	.029	-.005
e6	<-->	Imp_DevCult_Index	.722	.038
e6	<-->	Purposeful	.398	-.042
e6	<-->	e10	6.684	.132
e6	<-->	e9	.963	-.047
e6	<-->	e8	3.910	-.077
e6	<-->	e7	1.093	.044
e5	<-->	Imp_DevCult_Index	.472	.036
e5	<-->	Purposeful	.020	-.011
e5	<-->	e10	.548	.045
e5	<-->	e9	.476	.039
e5	<-->	e8	.371	-.028
e5	<-->	e6	.544	-.046
e4	<-->	Imp_DevCult_Index	.119	.017
e4	<-->	Support	1.152	-.058
e4	<-->	Purposeful	.036	.014
e4	<-->	e10	.134	.021
e4	<-->	e9	.505	.038
e4	<-->	e8	.165	-.018
e4	<-->	e7	2.397	-.074
e4	<-->	e6	.099	-.019
e4	<-->	e5	9.303	.208
e3	<-->	Imp_DevCult_Index	1.366	-.061
e3	<-->	Support	2.525	.090
e3	<-->	Purposeful	.021	-.011
e3	<-->	e10	.610	.047
e3	<-->	e8	.382	-.029
e3	<-->	e7	.145	.019
e3	<-->	e6	2.162	.092

Table C-7 Continued

e3	<-->	e5	2.465	-.111
e3	<-->	e4	.016	.008
e2	<-->	Imp_DevCult_Index	.061	-.012
e2	<-->	Support	.923	-.051
e2	<-->	Purposeful	.081	.020
e2	<-->	e10	.996	-.056
e2	<-->	e9	1.012	.053
e2	<-->	e8	.616	.034
e2	<-->	e7	.927	.045
e2	<-->	e6	10.564	-.190
e2	<-->	e4	.855	-.059
e2	<-->	e3	.032	-.012
e1	<-->	Imp_DevCult_Index	.333	.029
e1	<-->	Support	.025	.009
e1	<-->	Purposeful	.025	-.012
e1	<-->	e10	.104	-.019
e1	<-->	e9	3.225	-.098
e1	<-->	e8	.128	-.016
e1	<-->	e7	1.463	.059
e1	<-->	e6	3.811	.119
e1	<-->	e5	1.546	-.086
e1	<-->	e4	4.001	-.133
e1	<-->	e3	2.061	.099
e1	<-->	e2	1.786	.087

Table C-8: Support Capacity and Developmental Culture Initial Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Support5	<---	Imp_DevCult_Index	.159	-.028
Support5	<---	Purposeful	.368	.033
Support5	<---	Support4	.779	-.042
Support5	<---	Support3	.146	-.021
Support5	<---	Support2	.018	.008
Support5	<---	Support1	3.227	.084
Support5	<---	Purpose5	.770	.033
Support5	<---	Purpose4	.417	.026
Support5	<---	Purpose3	.742	.030
Support5	<---	Purpose2	.034	-.007
Support5	<---	Purpose1	.055	.009
Support4	<---	Imp_DevCult_Index	.166	-.026
Support4	<---	Purposeful	.150	.019
Support4	<---	Support5	.959	-.043
Support4	<---	Support3	2.267	.077
Support4	<---	Support2	.948	-.053
Support4	<---	Support1	.469	-.030
Support4	<---	Purpose5	.482	.024
Support4	<---	Purpose4	.505	.026
Support4	<---	Purpose3	.061	.008
Support4	<---	Purpose2	.781	.033
Support4	<---	Purpose1	.644	-.028
Support3	<---	Imp_DevCult_Index	1.076	-.056
Support3	<---	Purposeful	2.147	-.061
Support3	<---	Support5	.244	-.018
Support3	<---	Support4	3.081	.065
Support3	<---	Support2	.014	-.005

Table C-8 Continued

Support3	<---	Support1	1.937	-.050
Support3	<---	Purpose5	1.933	-.041
Support3	<---	Purpose4	1.589	-.039
Support3	<---	Purpose3	2.026	-.038
Support3	<---	Purpose2	.296	-.017
Support3	<---	Purpose1	1.556	-.037
Support2	<---	Imp_DevCult_Index	2.436	.090
Support2	<---	Purposeful	1.766	.059
Support2	<---	Support5	.016	.005
Support2	<---	Support4	.701	-.033
Support2	<---	Support1	.526	.028
Support2	<---	Purpose5	.776	.028
Support2	<---	Purpose3	1.436	.035
Support2	<---	Purpose2	2.294	.050
Support2	<---	Purpose1	2.760	.052
Support1	<---	Imp_DevCult_Index	.560	.054
Support1	<---	Purposeful	.233	-.027
Support1	<---	Support5	2.864	.082
Support1	<---	Support4	.338	-.029
Support1	<---	Support3	1.027	-.058
Support1	<---	Support2	.512	.043
Support1	<---	Purpose5	.624	-.031
Support1	<---	Purpose4	.279	-.022
Support1	<---	Purpose3	.159	.014
Support1	<---	Purpose2	5.373	-.096
Support1	<---	Purpose1	.687	.033
Purpose5	<---	Imp_DevCult_Index	.468	.057
Purpose5	<---	Support	.021	.013
Purpose5	<---	Support5	.330	.032

Table C-8 Continued

Purpose5	<---	Support4	.254	.029
Purpose5	<---	Support3	.039	-.013
Purpose5	<---	Support1	.173	-.023
Purpose5	<---	Purpose4	3.759	.093
Purpose5	<---	Purpose3	.699	-.035
Purpose5	<---	Purpose1	.575	-.035
Purpose4	<---	Imp_DevCult_Index	.024	.012
Purpose4	<---	Support	.958	-.083
Purpose4	<---	Support5	.169	-.022
Purpose4	<---	Support4	.077	-.015
Purpose4	<---	Support3	.884	-.059
Purpose4	<---	Support2	2.807	-.112
Purpose4	<---	Support1	.696	-.045
Purpose4	<---	Purpose5	3.675	.083
Purpose4	<---	Purpose2	.328	-.026
Purpose4	<---	Purpose1	1.485	-.053
Purpose3	<---	Imp_DevCult_Index	.780	-.075
Purpose3	<---	Support	1.729	.118
Purpose3	<---	Support5	1.897	.078
Purpose3	<---	Support4	.773	.051
Purpose3	<---	Support3	.464	.045
Purpose3	<---	Support2	1.209	.077
Purpose3	<---	Support1	3.391	.104
Purpose3	<---	Purpose5	.996	-.046
Purpose3	<---	Purpose2	.013	-.005
Purpose3	<---	Purpose1	.784	.041
Purpose2	<---	Imp_DevCult_Index	.172	-.033
Purpose2	<---	Support	.977	-.083
Purpose2	<---	Support5	1.694	-.069

Table C-8 Continued

Purpose2	<---	Support4	.012	-.006
Purpose2	<---	Support3	.124	-.022
Purpose2	<---	Support1	8.166	-.151
Purpose2	<---	Purpose4	.346	-.026
Purpose2	<---	Purpose1	.665	.035
Purpose1	<---	Imp_DevCult_Index	.363	.049
Purpose1	<---	Support	.074	.024
Purpose1	<---	Support4	.731	-.048
Purpose1	<---	Support2	.988	.068
Purpose1	<---	Support1	2.290	.083
Purpose1	<---	Purpose5	.614	-.035
Purpose1	<---	Purpose4	1.622	-.059
Purpose1	<---	Purpose3	.588	.031
Purpose1	<---	Purpose2	.689	.039

Table C-9: Support Capacity and Developmental Culture Initial Measurement Model Squared Multiple Correlations

	Estimate
Support5	.510
Support4	.580
Support3	.658
Support2	.475
Support1	.464
Purpose5	.548
Purpose4	.540
Purpose3	.649
Purpose2	.558
Purpose1	.569

Table C-10: Support Capacity and Developmental Culture Final Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	51.581	41	.124	1.258
Saturated model	66	.000	0		
Independence model	11	1178.052	55	.000	21.419

Table C-11: Support Capacity and Developmental Culture Final Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.956	.941	.991	.987	.991
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-12: Support Capacity and Developmental Culture Final Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.745	.713	.738
Saturated model	.000	.000	.000

Table C-13: Support Capacity and Developmental Culture Final Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.032	.000	.056	.884
Independence model	.281	.267	.295	.000

Table C-14: Support Capacity and Developmental Culture Final Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Purposeful	<-->	Support	.242	.073	3.307	***	par_9
Purposeful	<-->	Imp_DevCult_Index	.173	.061	2.847	.004	par_10
Support	<-->	Imp_DevCult_Index	.165	.049	3.391	***	par_11
e8	<-->	e9	.185	.053	3.502	***	par_12

Table C-15: Support Capacity and Developmental Culture Final Measurement Model Covariance Modification Index

			M.I.	Par Change
e10	<-->	Imp_DevCult_Index	.904	-.041
e10	<-->	Support	.018	.006
e10	<-->	Purposeful	.190	.028
e9	<-->	Support	.054	-.011
e9	<-->	Purposeful	.912	.056
e9	<-->	e10	.089	-.013
e8	<-->	Imp_DevCult_Index	.292	-.018
e8	<-->	Support	.200	.017
e8	<-->	Purposeful	1.419	-.058
e8	<-->	e10	.182	.016

e7	<-->	Imp_DevCult_Index	1.473	.043
e7	<-->	Support	.316	-.023
e7	<-->	Purposeful	.941	.051
e7	<-->	e10	1.464	-.048
e7	<-->	e9	.095	-.012
e7	<-->	e8	1.148	.033
e6	<-->	Imp_DevCult_Index	.279	.023
e6	<-->	Support	.014	.006
e6	<-->	Purposeful	.989	-.065
e6	<-->	e10	1.276	.056
e6	<-->	e9	.148	.018
e6	<-->	e8	1.114	-.040
e6	<-->	e7	.056	-.010
e5	<-->	Imp_DevCult_Index	.481	.036
e5	<-->	Purposeful	.018	-.010
e5	<-->	e10	.594	.046
e5	<-->	e9	.681	.045

Table C-15 Continued

e5	<-->	e8	.452	-.031
e5	<-->	e6	.695	-.051
e4	<-->	Imp_DevCult_Index	.139	.018
e4	<-->	Support	1.381	-.067
e4	<-->	Purposeful	.047	.016
e4	<-->	e10	.219	.027
e4	<-->	e9	.543	.039
e4	<-->	e8	.297	-.024
e4	<-->	e7	2.462	-.075
e4	<-->	e6	.077	-.016
e4	<-->	e5	9.371	.209
e3	<-->	Imp_DevCult_Index	1.468	-.063
e3	<-->	Support	3.049	.105
e3	<-->	Purposeful	.034	-.014
e3	<-->	e10	.358	.036
e3	<-->	e9	.026	.009
e3	<-->	e8	.224	-.022
e3	<-->	e7	.044	.010
e3	<-->	e6	1.811	.083
e3	<-->	e5	2.495	-.112
e3	<-->	e4	.015	.008
e2	<-->	Imp_DevCult_Index	.032	-.009
e2	<-->	Support	1.614	-.071
e2	<-->	Purposeful	.125	.025
e2	<-->	e10	.608	-.044
e2	<-->	e9	.636	.041
e2	<-->	e8	.306	.024
e2	<-->	e7	1.630	.060
e2	<-->	e6	10.432	-.186

Table C-15 Continued

e2	<-->	e4	.804	-.057
e2	<-->	e3	.030	-.011
e1	<-->	Imp_DevCult_Index	.278	.027
e1	<-->	Support	.169	.024
e1	<-->	Purposeful	.045	-.016
e1	<-->	e10	.491	-.041
e1	<-->	e9	2.491	-.085
e1	<-->	e7	.958	.048
e1	<-->	e6	3.188	.107
e1	<-->	e5	1.571	-.087
e1	<-->	e4	4.029	-.133
e1	<-->	e3	1.967	.097
e1	<-->	e2	1.794	.087

Table C-16: Support Capacity and Developmental Culture Final Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Support5	<---	Imp_DevCult_Index	.760	-.060
Support5	<---	Purposeful	.079	.015
Support5	<---	Support4	.015	-.006
Support5	<---	Support3	.048	.012
Support5	<---	Support2	.640	-.046
Support5	<---	Support1	.545	.034
Support5	<---	Purpose5	.451	.025
Support5	<---	Purpose4	.236	.019
Support5	<---	Purpose3	.272	.018
Support5	<---	Purpose2	.078	-.011
Support5	<---	Purpose1	.049	-.008
Support4	<---	Purposeful	.836	.045
Support4	<---	Support5	.032	-.008
Support4	<---	Support2	.040	-.011
Support4	<---	Support1	.061	.011
Support4	<---	Purpose5	1.306	.039
Support4	<---	Purpose4	1.186	.039
Support4	<---	Purpose3	.595	.024
Support4	<---	Purpose2	1.264	.041
Support4	<---	Purpose1	.089	-.010
Support3	<---	Imp_DevCult_Index	.462	-.036
Support3	<---	Purposeful	1.515	-.050
Support3	<---	Support5	.067	.009
Support3	<---	Support2	.490	.031
Support3	<---	Support1	.465	-.024
Support3	<---	Purpose5	1.606	-.036
Support3	<---	Purpose4	1.406	-.036

Table C-16 Continued

Support3	<---	Purpose3	1.374	-.031
Support3	<---	Purpose2	.271	-.016
Support3	<---	Purpose1	.689	-.024
Support2	<---	Imp_DevCult_Index	1.711	.075
Support2	<---	Purposeful	1.246	.050
Support2	<---	Support5	.546	-.029
Support2	<---	Support3	.417	.029
Support2	<---	Support1	.024	-.006
Support2	<---	Purpose5	.519	.023
Support2	<---	Purpose4	.047	-.007
Support2	<---	Purpose3	.901	.027
Support2	<---	Purpose2	2.426	.051
Support2	<---	Purpose1	1.885	.043
Support1	<---	Imp_DevCult_Index	.150	.028
Support1	<---	Purposeful	.781	-.049
Support1	<---	Support5	.477	.033
Support1	<---	Support3	.383	-.035
Support1	<---	Support2	.024	-.009
Support1	<---	Purpose5	1.270	-.043
Support1	<---	Purpose4	.608	-.032
Support1	<---	Purpose2	6.697	-.105
Support1	<---	Purpose1	.198	.017
Purpose5	<---	Imp_DevCult_Index	.469	.057
Purpose5	<---	Support	.015	.010
Purpose5	<---	Support5	.292	.031
Purpose5	<---	Support4	.281	.031
Purpose5	<---	Support3	.031	-.012
Purpose5	<---	Support1	.204	-.025
Purpose5	<---	Purpose4	3.791	.093

Table C-16 Continued

Purpose5	<---	Purpose3	.706	-.035
Purpose5	<---	Purpose1	.583	-.035
Purpose4	<---	Imp_DevCult_Index	.024	.012
Purpose4	<---	Support	1.129	-.088
Purpose4	<---	Support5	.197	-.024
Purpose4	<---	Support4	.063	-.014
Purpose4	<---	Support3	.847	-.058
Purpose4	<---	Support2	2.885	-.114
Purpose4	<---	Support1	.756	-.047
Purpose4	<---	Purpose5	3.705	.084
Purpose4	<---	Purpose2	.309	-.026
Purpose4	<---	Purpose1	1.492	-.053
Purpose3	<---	Imp_DevCult_Index	.787	-.075
Purpose3	<---	Support	2.059	.125
Purpose3	<---	Support5	1.774	.076
Purpose3	<---	Support4	.830	.053
Purpose3	<---	Support3	.496	.047
Purpose3	<---	Support2	1.131	.075
Purpose3	<---	Support1	3.216	.102
Purpose3	<---	Purpose5	1.009	-.046
Purpose3	<---	Purpose2	.012	-.005
Purpose3	<---	Purpose1	.747	.040
Purpose2	<---	Imp_DevCult_Index	.169	-.032
Purpose2	<---	Support	1.628	-.103
Purpose2	<---	Support5	1.774	-.071
Purpose2	<---	Support3	.109	-.020
Purpose2	<---	Support1	8.349	-.153
Purpose2	<---	Purpose4	.326	-.026
Purpose2	<---	Purpose1	.666	.035

Table C-16 Continued

Purpose1	<---	Imp_DevCult_Index	.361	.049
Purpose1	<---	Support	.266	.043
Purpose1	<---	Support4	.691	-.047
Purpose1	<---	Support2	.930	.066
Purpose1	<---	Support1	2.171	.081
Purpose1	<---	Purpose5	.624	-.035
Purpose1	<---	Purpose4	1.636	-.060
Purpose1	<---	Purpose3	.560	.031
Purpose1	<---	Purpose2	.694	.039

Table C-17: Support Capacity and Developmental Culture Final Measurement Model Squared Multiple Correlations

	Estimate
Support5	.554
Support4	.475
Support3	.559
Support2	.502
Support1	.510
Purpose5	.547
Purpose4	.540
Purpose3	.650
Purpose2	.557
Purpose1	.570

Table C-18: Support Capacity and Developmental Culture Full Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	26	40.118	40	.465	1.003
Saturated model	66	.000	0		
Independence model	11	1178.052	55	.000	21.419

Table C-19: Support Capacity and Developmental Culture Full Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.966	.953	1.000	1.000	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-20: Support Capacity and Developmental Culture Initial Measurement Model Parsimony-Adjusted Measures

Model	**PRATIO**	**PNFI**	**PCFI**
Default model	.745	.713	.738
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-21: Support Capacity and Developmental Culture Full Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.003	.000	.043	.984
Independence model	.281	.267	.295	.000

Table C-22: Support Capacity and Developmental Culture Full Model Covariance Weights

			Estimate	**S.E.**	**C.R.**	**P**	**Label**
e8	<-->	e9	.185	.053	3.502	***	par_12

Table C-23: Support Capacity and Developmental Culture Full Model Covariance Modification Index

			M.I.	**Par Change**
e4	<-->	e5	9.371	.209
e2	<-->	e6	10.432	-.186
e1	<-->	e4	4.029	-.133

Table C-24: Support Capacity and Developmental Culture Full Model Regression Weight Modification Index

			M.I.	**Par Change**
Support1	<---	Purpose2	6.697	-.105
Purpose2	<---	Support1	8.349	-.153

Table C-25: Support Capacity and Developmental Culture Full Model Squared Multiple Correlations

	Estimate
Imp_DevCult_Index	.059
Purposeful	.085
Support5	.554
Support4	.475
Support3	.559
Support2	.502
Support1	.510
Purpose5	.547
Purpose4	.540
Purpose3	.650
Purpose2	.557
Purpose1	.570

Figure C-2: Developmental Culture Initial Measurement Model
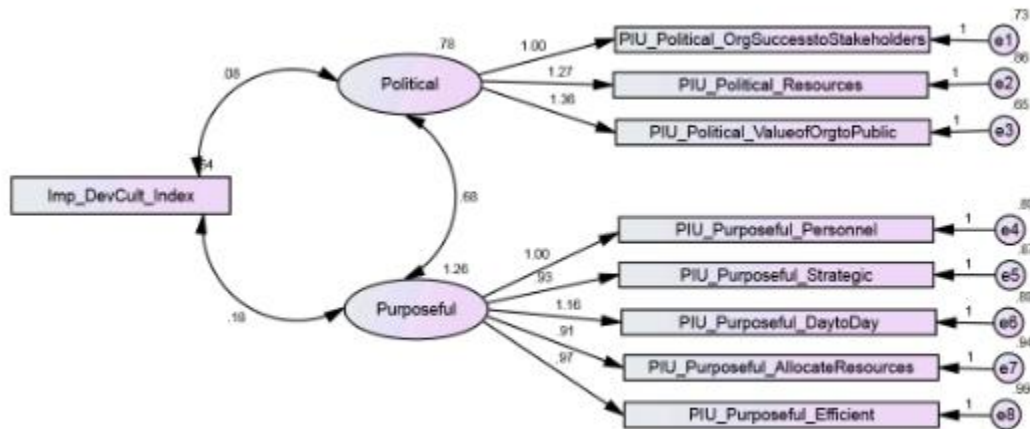
Table C-26: Developmental Culture Initial Measurement Model Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
Imp_DevCult_Index	.000	4.000	-.578	-3.808	.452	1.488
Purpose5	.000	5.000	.078	.512	-.901	-2.967
Purpose4	.000	5.000	.216	1.425	-.905	-2.980
Purpose3	.000	5.000	-.831	-5.467	-.283	-.931
Purpose2	.000	5.000	.307	2.018	-.781	-2.571
Purpose1	.000	5.000	.203	1.334	-.846	-2.783
Political3	.000	5.000	-.445	-2.928	-.832	-2.740
Political2	.000	5.000	-.243	-1.602	-.984	-3.238
Political1	.000	5.000	.310	2.043	-.391	-1.285
Multivariate					7.748	4.439

Table C-27: Developmental Culture Initial Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	20	45.429	25	.007	1.817
Saturated model	45	.000	0		
Independence model	9	1006.764	36	.000	27.966

Table C-28: Developmental Culture Initial Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.955	.935	.979	.970	.979
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-29: Developmental Culture Initial Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.694	.663	.680
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-30: Developmental Culture Initial Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.056	.029	.082	.322
Independence model	.323	.306	.340	.000

Table C-31: Developmental Culture Initial Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Purposeful	<-->	Imp_DevCult_Index	.175	.061	2.854	.004	par_7
Political	<-->	Imp_DevCult_Index	.077	.049	1.579	.114	par_8
Political	<-->	Purposeful	.683	.100	6.814	***	par_9

Table C-32: Developmental Culture Initial Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	Imp_DevCult_Index	.498	.037
e8	<-->	Purposeful	.021	-.009
e7	<-->	Imp_DevCult_Index	.025	.008
e7	<-->	Purposeful	1.348	.071
e7	<-->	Political	3.269	-.091
e7	<-->	e8	11.193	.229
e6	<-->	Imp_DevCult_Index	.812	-.047
e6	<-->	Purposeful	.152	-.024
e6	<-->	Political	.684	.043
e6	<-->	e8	2.589	-.112
e6	<-->	e7	.189	.029
e5	<-->	Imp_DevCult_Index	.181	-.021
e5	<-->	Purposeful	.299	.032
e5	<-->	Political	.526	-.035
e5	<-->	e8	.026	.011
e5	<-->	e7	.215	-.030
e5	<-->	e6	.047	-.014
e4	<-->	Imp_DevCult_Index	.375	.031
e4	<-->	Purposeful	.962	-.059
e4	<-->	Political	1.806	.067

Table C-32 Continued

e4	<-->	e8	2.242	-.102
e4	<-->	e7	3.670	-.126
e4	<-->	e6	.795	.060
e4	<-->	e5	1.215	.070
e3	<-->	Imp_DevCult_Index	4.231	-.100
e3	<-->	Purposeful	.241	-.028
e3	<-->	Political	.271	.023
e3	<-->	e8	1.359	-.077
e3	<-->	e7	1.771	-.085
e3	<-->	e6	4.363	.138
e3	<-->	e5	.039	-.012
e3	<-->	e4	.170	-.026
e2	<-->	Imp_DevCult_Index	1.218	.057
e2	<-->	Purposeful	.303	-.034
e2	<-->	Political	.078	.014
e2	<-->	e8	1.404	-.083
e2	<-->	e7	.904	-.065
e2	<-->	e6	1.142	-.075
e2	<-->	e4	6.703	.175
e2	<-->	e3	.670	.050
e1	<-->	Imp_DevCult_Index	1.921	.063
e1	<-->	Purposeful	1.581	.069
e1	<-->	Political	1.035	-.045
e1	<-->	e8	8.211	.179
e1	<-->	e7	.360	.036
e1	<-->	e6	.225	-.029
e1	<-->	e5	.339	-.034
e1	<-->	e4	.583	-.046
e1	<-->	e3	.085	-.016

Table C-32 Continued

e1	<-->	e2	.560	-.045

Table C-33: Developmental Culture Initial Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Purpose5	<---	Imp_DevCult_Index	.476	.058
Purpose5	<---	Purpose4	4.767	.104
Purpose5	<---	Purpose3	.726	-.035
Purpose5	<---	Purpose2	.010	.005
Purpose5	<---	Purpose1	.802	-.041
Purpose5	<---	Political3	.275	-.024
Purpose5	<---	Political2	.441	-.031
Purpose5	<---	Political1	3.333	.099
Purpose4	<---	Imp_DevCult_Index	.043	.017
Purpose4	<---	Political	1.350	-.093
Purpose4	<---	Purpose5	4.493	.093
Purpose4	<---	Purpose3	.053	.009
Purpose4	<---	Purpose2	.084	-.013
Purpose4	<---	Purpose1	1.310	-.050
Purpose4	<---	Political3	2.219	-.067
Purpose4	<---	Political2	1.841	-.060
Purpose4	<---	Political1	.149	-.020
Purpose3	<---	Imp_DevCult_Index	.822	-.075
Purpose3	<---	Political	.311	.046
Purpose3	<---	Purpose5	1.062	-.046
Purpose3	<---	Purpose4	.082	.014
Purpose3	<---	Purpose2	.019	-.007
Purpose3	<---	Purpose1	.291	.024
Purpose3	<---	Political3	1.891	.063

Table C-33 Continued

Purpose3	<---	Political2	.044	-.010
Purpose2	<---	Imp_DevCult_Index	.156	-.031
Purpose2	<---	Political	.205	-.035
Purpose2	<---	Purpose5	.011	.004
Purpose2	<---	Purpose4	.092	-.014
Purpose2	<---	Purpose3	.013	-.005
Purpose2	<---	Purpose1	.435	.028
Purpose2	<---	Political3	.189	-.019
Purpose2	<---	Political2	.113	-.015
Purpose2	<---	Political1	.447	-.034
Purpose1	<---	Imp_DevCult_Index	.314	.045
Purpose1	<---	Political	.713	.067
Purpose1	<---	Purpose5	.907	-.041
Purpose1	<---	Purpose4	1.571	-.057
Purpose1	<---	Purpose3	.225	.019
Purpose1	<---	Purpose2	.479	.032
Purpose1	<---	Political3	.208	.020
Purpose1	<---	Political2	4.236	.091
Political3	<---	Imp_DevCult_Index	4.570	-.165
Political3	<---	Purposeful	.353	-.035
Political3	<---	Purpose5	1.306	-.048
Political3	<---	Purpose4	1.596	-.056
Political3	<---	Purpose3	.399	.024
Political3	<---	Purpose2	.290	-.024
Political3	<---	Purpose1	.449	-.028
Political3	<---	Political2	.245	.021
Political3	<---	Political1	.038	-.010
Political2	<---	Imp_DevCult_Index	1.063	.084
Political2	<---	Purposeful	.048	-.014

Table C-33 Continued

Political2	<---	Purpose5	.801	-.040
Political2	<---	Purpose4	.582	-.036
Political2	<---	Purpose3	.520	-.029
Political2	<---	Purpose2	.030	-.008
Political2	<---	Purpose1	1.871	.061
Political2	<---	Political3	.159	.018
Political2	<---	Political1	.239	-.026
Political1	<---	Imp_DevCult_Index	2.466	.114
Political1	<---	Purposeful	1.007	.055
Political1	<---	Purpose5	6.205	.098
Political1	<---	Purpose4	1.143	.044
Political1	<---	Purpose3	.268	.019
Political1	<---	Purpose2	.117	.014
Political1	<---	Purpose1	.074	.011
Political1	<---	Political3	.019	-.006
Political1	<---	Political2	.189	-.017

Table C-34: Developmental Culture Initial Measurement Model Squared Multiple Correlations

	Estimate
Purpose5	.544
Purpose4	.523
Purpose3	.655
Purpose2	.554
Purpose1	.585
Political3	.687
Political2	.590
Political1	.516

Table C-35: Developmental Culture Final Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	21	32.572	24	.113	1.357
Saturated model	45	.000	0		
Independence model	9	1006.764	36	.000	27.966

Table C-36: Developmental Culture Final Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.968	.951	.991	.987	.991
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-37: Developmental Culture Final Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.645	.661
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-38: Developmental Culture Final Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.037	.000	.067	.732
Independence model	.323	.306	.340	.000

Table C-39: Developmental Culture Final Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Purposeful	<-->	Imp_DevCult_Index	.176	.063	2.811	.005	par_7
Political	<-->	Imp_DevCult_Index	.076	.048	1.573	.116	par_8
Political	<-->	Purposeful	.700	.102	6.863	***	par_9

Table C-40: Developmental Culture Final Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	Imp_DevCult_Index	.625	.041
e8	<-->	Purposeful	.504	-.045
e8	<-->	Political	.743	.044
e7	<-->	Imp_DevCult_Index	.019	.007
e7	<-->	Purposeful	.798	.055
e7	<-->	Political	1.861	-.067
e6	<-->	Imp_DevCult_Index	.883	-.049
e6	<-->	Purposeful	.012	-.007
e6	<-->	Political	.158	.020
e6	<-->	e8	.959	-.067
e6	<-->	e7	2.596	.107
e5	<-->	Imp_DevCult_Index	.169	-.020

Table C-40 Continued

e5	<-->	Purposeful	.542	.044
e5	<-->	Political	1.011	-.049
e5	<-->	e8	.838	.060
e5	<-->	e7	.028	.011
e5	<-->	e6	.466	-.044
e4	<-->	Imp_DevCult_Index	.360	.030
e4	<-->	Purposeful	.470	-.041
e4	<-->	Political	.787	.044
e4	<-->	e8	.255	-.034
e4	<-->	e7	1.010	-.064
e4	<-->	e5	.346	.037
e3	<-->	Imp_DevCult_Index	4.288	-.101
e3	<-->	Purposeful	.180	-.025
e3	<-->	Political	.227	.021
e3	<-->	e8	.468	-.044
e3	<-->	e7	.805	-.056
e3	<-->	e6	3.441	.122
e3	<-->	e5	.169	-.026
e3	<-->	e4	.565	-.047
e2	<-->	Imp_DevCult_Index	1.208	.057
e2	<-->	Purposeful	.209	-.029
e2	<-->	Political	.047	.011
e2	<-->	e8	.679	-.057
e2	<-->	e7	.307	-.037
e2	<-->	e6	1.908	-.096
e2	<-->	e5	.043	-.014
e2	<-->	e4	5.940	.163
e2	<-->	e3	.509	.043
e1	<-->	Imp_DevCult_Index	2.025	.065

Table C-40 Continued

e1	<-->	Purposeful	1.156	.060
e1	<-->	Political	.802	-.039
e1	<-->	e8	8.116	.174
e1	<-->	e7	.019	.008
e1	<-->	e6	.119	-.021
e1	<-->	e5	.206	-.027
e1	<-->	e4	.504	-.042
e1	<-->	e3	.053	-.013
e1	<-->	e2	.478	-.041

Table C-41: Developmental Culture Final Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Purpose5	<---	Imp_DevCult_Index	.560	.061
Purpose5	<---	Political	.268	.042
Purpose5	<---	Purpose3	.245	-.020
Purpose5	<---	Purpose2	.316	.026
Purpose5	<---	Purpose1	.083	-.013
Purpose5	<---	Political1	4.672	.115
Purpose4	<---	Imp_DevCult_Index	.030	.014
Purpose4	<---	Political	.740	-.067
Purpose4	<---	Purpose3	.660	.032
Purpose4	<---	Purpose2	.011	.005
Purpose4	<---	Purpose1	.328	-.025
Purpose4	<---	Political3	1.127	-.046
Purpose4	<---	Political2	.847	-.040
Purpose4	<---	Political1	.228	-.025
Purpose3	<---	Imp_DevCult_Index	.870	-.077
Purpose3	<---	Political	.078	.023

Table C-41 Continued

Purpose3	<---	Purpose5	.162	-.018
Purpose3	<---	Purpose4	.995	.047
Purpose3	<---	Purpose2	.184	-.020
Purpose3	<---	Political3	1.110	.048
Purpose3	<---	Political2	.338	-.027
Purpose2	<---	Imp_DevCult_Index	.139	-.029
Purpose2	<---	Political	.387	-.048
Purpose2	<---	Purpose5	.465	.029
Purpose2	<---	Purpose4	.086	.013
Purpose2	<---	Purpose3	.123	-.014
Purpose2	<---	Purpose1	.116	.015
Purpose2	<---	Political3	.437	-.029
Purpose2	<---	Political2	.310	-.024
Purpose2	<---	Political1	.490	-.036
Purpose1	<---	Imp_DevCult_Index	.315	.045
Purpose1	<---	Political	.295	.043
Purpose1	<---	Purpose5	.297	-.023
Purpose1	<---	Purpose4	.688	-.038
Purpose1	<---	Purpose2	.134	.017
Purpose1	<---	Political2	3.091	.077
Political3	<---	Imp_DevCult_Index	4.578	-.165
Political3	<---	Purposeful	.292	-.031
Political3	<---	Purpose5	1.009	-.042
Political3	<---	Purpose4	1.271	-.049
Political3	<---	Purpose3	.264	.020
Political3	<---	Purpose2	.396	-.028
Political3	<---	Purpose1	.672	-.034
Political3	<---	Political2	.186	.018
Political3	<---	Political1	.024	-.008

Table C-41 Continued

Political2	<---	Imp_DevCult_Index	1.083	.085
Political2	<---	Purposeful	.024	-.010
Political2	<---	Purpose5	.619	-.035
Political2	<---	Purpose4	.430	-.031
Political2	<---	Purpose3	.655	-.033
Political2	<---	Purpose2	.055	-.011
Political2	<---	Purpose1	1.603	.057
Political2	<---	Political3	.119	.016
Political2	<---	Political1	.206	-.024
Political1	<---	Imp_DevCult_Index	2.488	.115
Political1	<---	Purposeful	.760	.047
Political1	<---	Purpose5	6.826	.103
Political1	<---	Purpose4	1.423	.049
Political1	<---	Purpose3	.245	.018
Political1	<---	Purpose2	.111	.014
Political1	<---	Purpose1	.054	.009
Political1	<---	Political3	.012	-.004
Political1	<---	Political2	.160	-.016

Table C-42: Developmental Culture Final Measurement Model Squared Multiple Correlations

	Estimate
Purpose5	.497
Purpose4	.475
Purpose3	.669
Purpose2	.559
Purpose1	.605
Political3	.689
Political2	.591
Political1	.512

Table C-43: Developmental Culture Full Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	21	32.572	24	.113	1.357
Saturated model	45	.000	0		
Independence model	9	1006.764	36	.000	27.966

Table C-44: Developmental Culture Full Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.968	.951	.991	.987	.991
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-45: Developmental Culture Full Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.645	.661
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-46: Developmental Culture Full Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.037	.000	.067	.732
Independence model	.323	.306	.340	.000

Table C-47: Developmental Culture Full Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
e10	<-->	e9	.679	.099	6.830	***	par_10
e7	<-->	e8	.274	.083	3.299	***	par_7

Table C-48: Developmental Culture Full Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	Imp_DevCult_Index	.560	.039
e8	<-->	e10	.504	-.045
e8	<-->	e9	.743	.044
e7	<-->	Imp_DevCult_Index	.030	.009
e7	<-->	e10	.798	.055
e7	<-->	e9	1.861	-.067
e6	<-->	Imp_DevCult_Index	.870	-.050
e6	<-->	e10	.012	-.007
e6	<-->	e9	.158	.020
e6	<-->	e8	.959	-.067
e6	<-->	e7	2.596	.107
e5	<-->	Imp_DevCult_Index	.139	-.019

Table C-48 Continued

e5	<-->	e10	.542	.044
e5	<-->	e9	1.011	-.049
e5	<-->	e8	.838	.060
e5	<-->	e7	.028	.011
e5	<-->	e6	.466	-.044
e4	<-->	Imp_DevCult_Index	.315	.029
e4	<-->	e10	.470	-.041
e4	<-->	e9	.787	.044
e4	<-->	e8	.255	-.034
e4	<-->	e7	1.010	-.064
e4	<-->	e5	.346	.037
e3	<-->	Imp_DevCult_Index	4.578	-.106
e3	<-->	e10	.180	-.025
e3	<-->	e9	.227	.021
e3	<-->	e8	.468	-.044
e3	<-->	e7	.805	-.056
e3	<-->	e6	3.441	.122
e3	<-->	e5	.169	-.026
e3	<-->	e4	.565	-.047
e2	<-->	Imp_DevCult_Index	1.083	.055
e2	<-->	e10	.209	-.029
e2	<-->	e9	.047	.011
e2	<-->	e8	.679	-.057
e2	<-->	e7	.307	-.037
e2	<-->	e6	1.908	-.096
e2	<-->	e5	.043	-.014
e2	<-->	e4	5.940	.163
e2	<-->	e3	.509	.043
e1	<-->	Imp_DevCult_Index	2.488	.073

Table C-48 Continued

e1	<-->	e10	1.156	.060
e1	<-->	e9	.802	-.039
e1	<-->	e8	8.116	.174
e1	<-->	e7	.019	.008
e1	<-->	e6	.119	-.021
e1	<-->	e5	.206	-.027
e1	<-->	e4	.504	-.042
e1	<-->	e3	.053	-.013
e1	<-->	e2	.478	-.041

Table C-49: Developmental Culture Full Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Purpose5	<---	Imp_DevCult_Index	.560	.061
Purpose5	<---	Political	.268	.042
Purpose5	<---	Purpose3	.245	-.020
Purpose5	<---	Purpose2	.316	.026
Purpose5	<---	Purpose1	.083	-.013
Purpose5	<---	Political1	4.672	.115
Purpose4	<---	Imp_DevCult_Index	.030	.014
Purpose4	<---	Political	.740	-.067
Purpose4	<---	Purpose3	.660	.032
Purpose4	<---	Purpose2	.011	.005
Purpose4	<---	Purpose1	.328	-.025
Purpose4	<---	Political3	1.127	-.046
Purpose4	<---	Political2	.847	-.040
Purpose4	<---	Political1	.228	-.025
Purpose3	<---	Imp_DevCult_Index	.870	-.077
Purpose3	<---	Political	.078	.023

Table C-49 Continued

Purpose3	<---	Purpose5	.162	-.018
Purpose3	<---	Purpose4	.995	.047
Purpose3	<---	Purpose2	.184	-.020
Purpose3	<---	Political3	1.110	.048
Purpose3	<---	Political2	.338	-.027
Purpose2	<---	Imp_DevCult_Index	.139	-.029
Purpose2	<---	Political	.387	-.048
Purpose2	<---	Purpose5	.465	.029
Purpose2	<---	Purpose4	.086	.013
Purpose2	<---	Purpose3	.123	-.014
Purpose2	<---	Purpose1	.116	.015
Purpose2	<---	Political3	.437	-.029
Purpose2	<---	Political2	.310	-.024
Purpose2	<---	Political1	.490	-.036
Purpose1	<---	Imp_DevCult_Index	.315	.045
Purpose1	<---	Political	.295	.043
Purpose1	<---	Purpose5	.297	-.023
Purpose1	<---	Purpose4	.688	-.038
Purpose1	<---	Purpose2	.134	.017
Purpose1	<---	Political2	3.091	.077
Political3	<---	Imp_DevCult_Index	4.578	-.165
Political3	<---	Purposeful	.292	-.031
Political3	<---	Purpose5	1.009	-.042
Political3	<---	Purpose4	1.271	-.049
Political3	<---	Purpose3	.264	.020
Political3	<---	Purpose2	.396	-.028
Political3	<---	Purpose1	.672	-.034
Political3	<---	Political2	.186	.018
Political3	<---	Political1	.024	-.008

Table C-49 Continued

Political2	<---	Imp_DevCult_Index	1.083	.085
Political2	<---	Purposeful	.024	-.010
Political2	<---	Purpose5	.619	-.035
Political2	<---	Purpose4	.430	-.031
Political2	<---	Purpose3	.655	-.033
Political2	<---	Purpose2	.055	-.011
Political2	<---	Purpose1	1.603	.057
Political2	<---	Political3	.119	.016
Political2	<---	Political1	.206	-.024
Political1	<---	Imp_DevCult_Index	2.488	.115
Political1	<---	Purposeful	.760	.047
Political1	<---	Purpose5	6.826	.103
Political1	<---	Purpose4	1.423	.049
Political1	<---	Purpose3	.245	.018
Political1	<---	Purpose2	.111	.014
Political1	<---	Purpose1	.054	.009
Political1	<---	Political3	.012	-.004
Political1	<---	Political2	.160	-.016

Table C-50: Developmental Culture Full Model Effects

	Total Effects			Direct Effects			Indirect Effects		
	Culture	Purposeful	Political	Culture	Purposeful	Political	Culture	Purposeful	Political
Purposeful	.272	.000	.000	.272	.000	.000	.000	.000	.000
Political	.113	.000	.000	.113	.000	.000	.000	.000	.000
Purpose5	.250	.920	.000	.000	.920	.000	.250	.000	.000
Purpose4	.237	.870	.000	.000	.870	.000	.237	.000	.000
Purpose3	.315	1.157	.000	.000	1.157	.000	.315	.000	.000
Purpose2	.254	.935	.000	.000	.935	.000	.254	.000	.000
Purpose1	.272	1.000	.000	.000	1.000	.000	.272	.000	.000
Political3	.159	.000	1.411	.000	.000	1.411	.159	.000	.000
Political2	.148	.000	1.306	.000	.000	1.306	.148	.000	.000
Political1	.113	.000	1.000	.000	.000	1.000	.113	.000	.000

Table C-51: Developmental Culture Full Measurement Model Squared Multiple Correlations

	Estimate
Purposeful	.037
Political	.012
Purpose5	.497
Purpose4	.475
Purpose3	.669
Purpose2	.559
Purpose1	.605
Political3	.689
Political2	.591
Political1	.512

Figure C-3: Stakeholder Involvement Initial Measurement Model
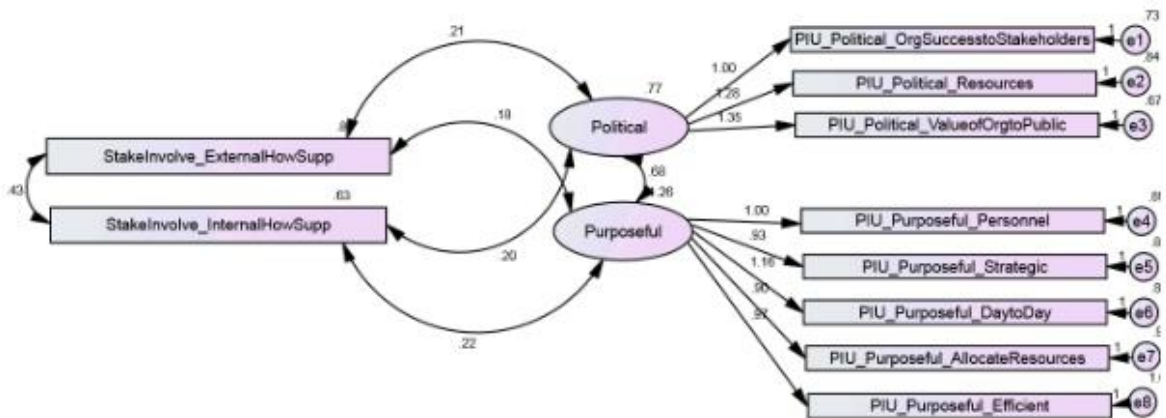
Table C-52: Stakeholder Involvement Initial Measurement Model Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
IntSup	.000	4.000	-1.158	-7.621	1.097	3.610
ExtSup	.000	4.000	-1.232	-8.109	.903	2.971
Purpose5	.000	5.000	.078	.512	-.901	-2.967
Purpose4	.000	5.000	.216	1.425	-.905	-2.980
Purpose3	.000	5.000	-.831	-5.467	-.283	-.931
Purpose2	.000	5.000	.307	2.018	-.781	-2.571
Purpose1	.000	5.000	.203	1.334	-.846	-2.783
Political3	.000	5.000	-.445	-2.928	-.832	-2.740
Political2	.000	5.000	-.243	-1.602	-.984	-3.238
Political1	.000	5.000	.310	2.043	-.391	-1.285
Multivariate					12.169	6.333

Table C-53: Stakeholder Involvement Initial Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	24	49.662	31	.018	1.602
Saturated model	55	.000	0		
Independence model	10	1133.047	45	.000	25.179

Table C-54: Stakeholder Involvement Initial Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.956	.936	.983	.975	.983
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-55: Stakeholder Involvement Initial Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.689	.659	.677
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-56: Stakeholder Involvement Initial Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.020	.072	.519
Independence model	.306	.290	.321	.000

Table C-57: Stakeholder Involvement Initial Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Political	<-->	ExtSup	.208	.059	3.534	***	par_7
Purposeful	<-->	IntSup	.219	.062	3.526	***	par_8
Political	<-->	Purposeful	.682	.100	6.815	***	par_9
ExtSup	<-->	IntSup	.431	.053	8.096	***	par_10
Political	<-->	IntSup	.204	.051	3.985	***	par_11
Purposeful	<-->	ExtSup	.178	.071	2.513	.012	par_12

Table C-58: Stakeholder Involvement Initial Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	ExtSup	.681	.042
e8	<-->	Political	.015	-.006
e7	<-->	IntSup	.359	-.025
e7	<-->	Purposeful	1.592	.078
e7	<-->	Political	2.761	-.082
e7	<-->	e8	11.560	.234
e6	<-->	IntSup	.281	-.022
e6	<-->	ExtSup	.049	-.011
e6	<-->	Purposeful	.200	-.028
e6	<-->	Political	.868	.047

Table C-58 Continued

e6	<-->	e8	2.522	-.111
e6	<-->	e7	.208	.031
e5	<-->	ExtSup	.048	.010
e5	<-->	Purposeful	.227	.028
e5	<-->	Political	.570	-.036
e5	<-->	e8	.031	.012
e5	<-->	e7	.203	-.029
e5	<-->	e6	.076	-.018
e4	<-->	IntSup	1.414	.049
e4	<-->	ExtSup	.634	-.038
e4	<-->	Purposeful	1.035	-.062
e4	<-->	Political	1.613	.062
e4	<-->	e8	2.169	-.100
e4	<-->	e7	3.580	-.125
e4	<-->	e6	.715	.056
e4	<-->	e5	1.130	.068
e3	<-->	IntSup	3.458	-.073
e3	<-->	ExtSup	.834	.042
e3	<-->	Purposeful	.254	-.029
e3	<-->	Political	.421	.028
e3	<-->	e8	1.446	-.080
e3	<-->	e7	1.608	-.082
e3	<-->	e6	4.553	.141
e3	<-->	e5	.052	-.014
e3	<-->	e4	.226	-.030
e2	<-->	IntSup	1.055	.042
e2	<-->	ExtSup	.303	.027
e2	<-->	Purposeful	.436	-.041
e2	<-->	e8	1.632	-.089

Table C-58 Continued

e2	<-->	e7	.881	-.063
e2	<-->	e6	1.104	-.073
e2	<-->	e4	6.520	.171
e2	<-->	e3	.482	.042
e1	<-->	IntSup	1.404	.044
e1	<-->	ExtSup	3.207	-.078
e1	<-->	Purposeful	1.993	.078
e1	<-->	Political	.735	-.037
e1	<-->	e8	8.076	.178
e1	<-->	e7	.430	.040
e1	<-->	e6	.132	-.023
e1	<-->	e5	.314	-.033
e1	<-->	e4	.589	-.046
e1	<-->	e2	.857	-.055

Table C-59: Stakeholder Involvement Initial Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Purpose5	<---	IntSup	.249	.042
Purpose5	<---	ExtSup	.905	.068
Purpose5	<---	Purpose4	4.943	.106
Purpose5	<---	Purpose3	.704	-.035
Purpose5	<---	Purpose2	.012	.005
Purpose5	<---	Purpose1	.774	-.040
Purpose5	<---	Political3	.260	-.024
Purpose5	<---	Political2	.435	-.030
Purpose5	<---	Political1	3.458	.101
Purpose4	<---	IntSup	.787	-.072
Purpose4	<---	ExtSup	.330	-.040

Table C-59 Continued

Purpose4	<---	Political	1.358	-.093
Purpose4	<---	Purpose5	4.661	.095
Purpose4	<---	Purpose3	.058	.010
Purpose4	<---	Purpose2	.079	-.013
Purpose4	<---	Purpose1	1.274	-.050
Purpose4	<---	Political3	2.174	-.066
Purpose4	<---	Political2	1.824	-.060
Purpose4	<---	Political1	.122	-.018
Purpose3	<---	IntSup	.410	-.053
Purpose3	<---	ExtSup	.228	-.034
Purpose3	<---	Political	.231	.039
Purpose3	<---	Purpose5	1.040	-.046
Purpose3	<---	Purpose4	.091	.014
Purpose3	<---	Purpose2	.030	-.008
Purpose3	<---	Purpose1	.261	.023
Purpose3	<---	Political3	1.850	.063
Purpose3	<---	Political2	.057	-.011
Purpose2	<---	ExtSup	.015	.008
Purpose2	<---	Political	.208	-.035
Purpose2	<---	Purpose5	.012	.005
Purpose2	<---	Purpose4	.087	-.013
Purpose2	<---	Purpose3	.021	-.006
Purpose2	<---	Purpose1	.404	.027
Purpose2	<---	Political3	.204	-.020
Purpose2	<---	Political2	.130	-.016
Purpose2	<---	Political1	.434	-.034
Purpose1	<---	IntSup	1.095	.084
Purpose1	<---	Political	.771	.070
Purpose1	<---	Purpose5	.882	-.041

Table C-59 Continued

Purpose1	<---	Purpose4	1.539	-.057
Purpose1	<---	Purpose3	.201	.018
Purpose1	<---	Purpose2	.444	.031
Purpose1	<---	Political3	.197	.020
Purpose1	<---	Political2	4.162	.090
Political3	<---	IntSup	2.509	-.123
Political3	<---	ExtSup	.015	-.008
Political3	<---	Purposeful	.199	-.026
Political3	<---	Purpose5	1.133	-.045
Political3	<---	Purpose4	1.262	-.049
Political3	<---	Purpose3	.583	.029
Political3	<---	Purpose2	.205	-.020
Political3	<---	Purpose1	.361	-.025
Political3	<---	Political2	.169	.018
Political2	<---	IntSup	2.220	.122
Political2	<---	ExtSup	1.676	.091
Political2	<---	Purposeful	.142	-.023
Political2	<---	Purpose5	1.130	-.047
Political2	<---	Purpose4	.744	-.040
Political2	<---	Purpose3	.689	-.034
Political2	<---	Purpose2	.092	-.014
Political2	<---	Purpose1	1.517	.055
Political2	<---	Political3	.120	.016
Political2	<---	Political1	.370	-.032
Political1	<---	IntSup	.093	.022
Political1	<---	ExtSup	1.759	-.083
Political1	<---	Purposeful	.997	.055
Political1	<---	Purpose5	6.127	.097
Political1	<---	Purpose4	1.213	.046

Table C-59 Continued

Political1	<---	Purpose3	.327	.021
Political1	<---	Purpose2	.125	.015
Political1	<---	Purpose1	.071	.011
Political1	<---	Political2	.278	-.021

Table C-60: Stakeholder Involvement Initial Measurement Model Squared Multiple Correlations

	Estimate
Purpose5	.542
Purpose4	.521
Purpose3	.656
Purpose2	.555
Purpose1	.586
Political3	.678
Political2	.601
Political1	.513

Table C-61: Stakeholder Involvement Final Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	36.410	30	.195	1.214
Saturated model	55	.000	0		
Independence model	10	1133.047	45	.000	25.179

Table C-62: Stakeholder Involvement Final Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.968	.952	.994	.991	.994
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-63: Stakeholder Involvement Final Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.645	.663
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-64: Stakeholder Involvement Final Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.029	.000	.058	.873
Independence model	.306	.290	.321	.000

Table C-65: Stakeholder Involvement Final Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Political	<-->	ExtSup	.207	.059	3.536	***	par_7
Purposeful	<-->	IntSup	.225	.063	3.547	***	par_8
Political	<-->	Purposeful	.699	.102	6.864	***	par_9
ExtSup	<-->	IntSup	.431	.053	8.096	***	par_10
Political	<-->	IntSup	.203	.051	3.982	***	par_11
Purposeful	<-->	ExtSup	.180	.072	2.491	.013	par_12
e7	<-->	e8	.279	.084	3.343	***	par_13

Table C-66: Stakeholder Involvement Final Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	IntSup	.028	.007
e8	<-->	ExtSup	.618	.039
e8	<-->	Purposeful	.404	-.041
e8	<-->	Political	.428	.033
e7	<-->	IntSup	.274	-.021
e7	<-->	ExtSup	.011	-.005
e7	<-->	Purposeful	.974	.061
e7	<-->	Political	1.449	-.058
e6	<-->	IntSup	.438	-.028
e6	<-->	ExtSup	.016	-.006
e6	<-->	Purposeful	.024	-.010
e6	<-->	Political	.265	.026
e6	<-->	e8	.906	-.066
e6	<-->	e7	2.718	.110
e5	<-->	IntSup	.011	-.004
e5	<-->	ExtSup	.089	.014
e5	<-->	Purposeful	.459	.041
e5	<-->	Political	1.063	-.049
e5	<-->	e8	.877	.061
e5	<-->	e7	.035	.012
e5	<-->	e6	.540	-.048

Table C-66 Continued

e4	<-->	IntSup	1.269	.046
e4	<-->	ExtSup	.548	-.035
e4	<-->	Purposeful	.523	-.044
e4	<-->	Political	.684	.040
e4	<-->	e8	.224	-.031
e4	<-->	e7	.950	-.063
e4	<-->	e5	.300	.034
e3	<-->	IntSup	3.492	-.073
e3	<-->	ExtSup	.815	.042
e3	<-->	Purposeful	.180	-.025
e3	<-->	Political	.361	.026
e3	<-->	e8	.538	-.048
e3	<-->	e7	.684	-.052
e3	<-->	e6	3.649	.126
e3	<-->	e5	.189	-.027
e3	<-->	e4	.652	-.051
e2	<-->	IntSup	1.058	.042
e2	<-->	ExtSup	.293	.026
e2	<-->	Purposeful	.325	-.036
e2	<-->	e8	.845	-.063
e2	<-->	e7	.273	-.035
e2	<-->	e6	1.875	-.095
e2	<-->	e5	.061	-.016
e2	<-->	e4	5.747	.159
e2	<-->	e3	.349	.036
e1	<-->	IntSup	1.457	.045
e1	<-->	ExtSup	3.178	-.078
e1	<-->	Purposeful	1.479	.069
e1	<-->	Political	.543	-.032

Table C-66 Continued

e1	<-->	e8	7.880	.172
e1	<-->	e7	.034	.011
e1	<-->	e6	.053	-.014
e1	<-->	e5	.186	-.025
e1	<-->	e4	.505	-.042
e1	<-->	e2	.751	-.051

Table C-67: Stakeholder Involvement Final Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Purpose5	<---	IntSup	.656	.067
Purpose5	<---	ExtSup	1.343	.082
Purpose5	<---	Political	.345	.048
Purpose5	<---	Purpose3	.230	-.020
Purpose5	<---	Purpose2	.330	.027
Purpose5	<---	Purpose1	.073	-.012
Purpose5	<---	Political3	.011	.005
Purpose5	<---	Political1	4.790	.117
Purpose4	<---	IntSup	.723	-.067
Purpose4	<---	ExtSup	.449	-.046
Purpose4	<---	Political	.758	-.068
Purpose4	<---	Purpose3	.687	.033
Purpose4	<---	Purpose2	.013	.005
Purpose4	<---	Purpose1	.307	-.024
Purpose4	<---	Political3	1.091	-.046
Purpose4	<---	Political2	.829	-.040
Purpose4	<---	Political1	.206	-.023
Purpose3	<---	IntSup	.629	-.066
Purpose3	<---	ExtSup	.270	-.037

Table C-67 Continued

Purpose3	<---	Political	.041	.017
Purpose3	<---	Purpose5	.139	-.017
Purpose3	<---	Purpose4	1.064	.049
Purpose3	<---	Purpose2	.213	-.022
Purpose3	<---	Political3	1.085	.048
Purpose3	<---	Political2	.375	-.028
Purpose2	<---	ExtSup	.016	.008
Purpose2	<---	Political	.388	-.049
Purpose2	<---	Purpose5	.495	.030
Purpose2	<---	Purpose4	.100	.014
Purpose2	<---	Purpose3	.142	-.015
Purpose2	<---	Purpose1	.100	.014
Purpose2	<---	Political3	.455	-.029
Purpose2	<---	Political2	.338	-.025
Purpose2	<---	Political1	.471	-.035
Purpose1	<---	IntSup	.891	.075
Purpose1	<---	Political	.332	.046
Purpose1	<---	Purpose5	.272	-.022
Purpose1	<---	Purpose4	.648	-.036
Purpose1	<---	Purpose2	.116	.016
Purpose1	<---	Political2	3.016	.076
Political3	<---	IntSup	2.553	-.124
Political3	<---	ExtSup	.020	-.009
Political3	<---	Purposeful	.155	-.023
Political3	<---	Purpose5	.872	-.039
Political3	<---	Purpose4	.989	-.044
Political3	<---	Purpose3	.423	.025
Political3	<---	Purpose2	.293	-.024
Political3	<---	Purpose1	.553	-.031

Table C-67 Continued

Political3	<---	Political2	.122	.015
Political2	<---	IntSup	2.220	.121
Political2	<---	ExtSup	1.654	.090
Political2	<---	Purposeful	.097	-.019
Political2	<---	Purpose5	.911	-.042
Political2	<---	Purpose4	.571	-.035
Political2	<---	Purpose3	.848	-.037
Political2	<---	Purpose2	.136	-.017
Political2	<---	Purpose1	1.270	.050
Political2	<---	Political3	.086	.013
Political2	<---	Political1	.328	-.030
Political1	<---	IntSup	.106	.024
Political1	<---	ExtSup	1.704	-.082
Political1	<---	Purposeful	.750	.047
Political1	<---	Purpose5	6.728	.102
Political1	<---	Purpose4	1.492	.051
Political1	<---	Purpose3	.301	.020
Political1	<---	Purpose2	.118	.014
Political1	<---	Purpose1	.053	.009
Political1	<---	Political2	.242	-.020

Table C-68: Stakeholder Involvement Final Measurement Model Squared Multiple Correlations

	Estimate
Purpose5	.495
Purpose4	.473
Purpose3	.669
Purpose2	.560
Purpose1	.606
Political3	.680
Political2	.603
Political1	.509

Table C-69: Stakeholder Involvement Full Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	25	36.410	30	.195	1.214
Saturated model	55	.000	0		
Independence model	10	1133.047	45	.000	25.179

Table C-70: Stakeholder Involvement Full Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.968	.952	.994	.991	.994
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-71: Stakeholder Involvement Full Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.645	.663
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-72: Stakeholder Involvement Full Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.029	.000	.058	.873
Independence model	.306	.290	.321	.000

Table C-73: Stakeholder Involvement Full Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
ExtSup	<-->	IntSup	.431	.053	8.096	***	par_7
e9	<-->	e10	.623	.093	6.701	***	par_13
e7	<-->	e8	.279	.084	3.343	***	par_8

Table C-74: Stakeholder Involvement Full Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	IntSup	.028	.007
e8	<-->	ExtSup	.714	.042
e8	<-->	e10	.404	-.041
e8	<-->	e9	.428	.033
e7	<-->	IntSup	.320	-.023
e7	<-->	ExtSup	.046	-.010
e7	<-->	e10	.974	.061
e7	<-->	e9	1.449	-.058

Table C-74 Continued

e6	<-->	IntSup	.364	-.026
e6	<-->	e10	.024	-.010
e6	<-->	e9	.265	.026
e6	<-->	e8	.906	-.066
e6	<-->	e7	2.718	.110
e5	<-->	IntSup	.029	-.007
e5	<-->	ExtSup	.040	.010
e5	<-->	e10	.459	.041
e5	<-->	e9	1.063	-.049
e5	<-->	e8	.877	.061
e5	<-->	e7	.035	.012
e5	<-->	e6	.540	-.048
e4	<-->	IntSup	1.342	.048
e4	<-->	ExtSup	.451	-.032
e4	<-->	e10	.523	-.044
e4	<-->	e9	.684	.040
e4	<-->	e8	.224	-.031
e4	<-->	e7	.950	-.063
e4	<-->	e5	.300	.034
e3	<-->	IntSup	3.476	-.075
e3	<-->	ExtSup	.943	.045
e3	<-->	e10	.180	-.025
e3	<-->	e9	.361	.026
e3	<-->	e8	.538	-.048
e3	<-->	e7	.684	-.052
e3	<-->	e6	3.649	.126
e3	<-->	e5	.189	-.027
e3	<-->	e4	.652	-.051
e2	<-->	IntSup	.832	.038

Table C-74 Continued

e2	<-->	ExtSup	.265	.025
e2	<-->	e10	.325	-.036
e2	<-->	e8	.845	-.063
e2	<-->	e7	.273	-.035
e2	<-->	e6	1.875	-.095
e2	<-->	e5	.061	-.016
e2	<-->	e4	5.747	.159
e2	<-->	e3	.349	.036
e1	<-->	IntSup	1.784	.050
e1	<-->	ExtSup	3.382	-.081
e1	<-->	e10	1.479	.069
e1	<-->	e9	.543	-.032
e1	<-->	e8	7.880	.172
e1	<-->	e7	.034	.011
e1	<-->	e6	.053	-.014
e1	<-->	e5	.186	-.025
e1	<-->	e4	.505	-.042
e1	<-->	e2	.751	-.051

Table C-75: Stakeholder Involvement Full Measurement Model Regression Weight Modification Index

			M.I.	Par Change
Purpose5	<---	IntSup	.656	.067
Purpose5	<---	ExtSup	1.343	.082
Purpose5	<---	Political	.345	.048
Purpose5	<---	Purpose3	.230	-.020
Purpose5	<---	Purpose2	.330	.027
Purpose5	<---	Purpose1	.073	-.012
Purpose5	<---	Political3	.011	.005

Table C-75 Continued

Purpose5	<---	Political1	4.790	.117
Purpose4	<---	IntSup	.723	-.067
Purpose4	<---	ExtSup	.449	-.046
Purpose4	<---	Political	.758	-.068
Purpose4	<---	Purpose3	.687	.033
Purpose4	<---	Purpose2	.013	.005
Purpose4	<---	Purpose1	.307	-.024
Purpose4	<---	Political3	1.091	-.046
Purpose4	<---	Political2	.829	-.040
Purpose4	<---	Political1	.206	-.023
Purpose3	<---	IntSup	.629	-.066
Purpose3	<---	ExtSup	.270	-.037
Purpose3	<---	Political	.041	.017
Purpose3	<---	Purpose5	.139	-.017
Purpose3	<---	Purpose4	1.064	.049
Purpose3	<---	Purpose2	.213	-.022
Purpose3	<---	Political3	1.085	.048
Purpose3	<---	Political2	.375	-.028
Purpose2	<---	ExtSup	.016	.008
Purpose2	<---	Political	.388	-.049
Purpose2	<---	Purpose5	.495	.030
Purpose2	<---	Purpose4	.100	.014
Purpose2	<---	Purpose3	.142	-.015
Purpose2	<---	Purpose1	.100	.014
Purpose2	<---	Political3	.455	-.029
Purpose2	<---	Political2	.338	-.025
Purpose2	<---	Political1	.471	-.035
Purpose1	<---	IntSup	.891	.075
Purpose1	<---	Political	.332	.046

Table C-75 Continued

Purpose1	<---	Purpose5	.272	-.022
Purpose1	<---	Purpose4	.648	-.036
Purpose1	<---	Purpose2	.116	.016
Purpose1	<---	Political2	3.016	.076
Political3	<---	IntSup	2.553	-.124
Political3	<---	ExtSup	.020	-.009
Political3	<---	Purposeful	.155	-.023
Political3	<---	Purpose5	.872	-.039
Political3	<---	Purpose4	.989	-.044
Political3	<---	Purpose3	.423	.025
Political3	<---	Purpose2	.293	-.024
Political3	<---	Purpose1	.553	-.031
Political3	<---	Political2	.122	.015
Political2	<---	IntSup	2.220	.121
Political2	<---	ExtSup	1.654	.090
Political2	<---	Purposeful	.097	-.019
Political2	<---	Purpose5	.911	-.042
Political2	<---	Purpose4	.571	-.035
Political2	<---	Purpose3	.848	-.037
Political2	<---	Purpose2	.136	-.017
Political2	<---	Purpose1	1.270	.050
Political2	<---	Political3	.086	.013
Political2	<---	Political1	.328	-.030
Political1	<---	IntSup	.106	.024
Political1	<---	ExtSup	1.704	-.082
Political1	<---	Purposeful	.750	.047
Political1	<---	Purpose5	6.728	.102
Political1	<---	Purpose4	1.492	.051
Political1	<---	Purpose3	.301	.020

Table C-75 Continued

Political1	<---	Purpose2	.118	.014
Political1	<---	Purpose1	.053	.009
Political1	<---	Political2	.242	-.020

Table C-76: Stakeholder Involvement Full Model Effects

	Total Effects				Direct Effects				Indirect Effects			
	Int Sup	Ext Sup	Purp	Poli	Int Sup	Ext Sup	Purp	Poli	Int Sup	Ext Sup	Purp	Poli
Purposeful	.321	.048	.000	.000	.321	.048	.000	.000	.000	.000	.000	.000
Political	.237	.121	.000	.000	.237	.121	.000	.000	.000	.000	.000	.000
Purpose5	.292	.044	.910	.000	.000	.000	.910	.000	.292	.044	.000	.000
Purpose4	.272	.041	.846	.000	.000	.000	.846	.000	.272	.041	.000	.000
Purpose3	.370	.056	1.151	.000	.000	.000	1.151	.000	.370	.056	.000	.000
Purpose2	.294	.044	.916	.000	.000	.000	.916	.000	.294	.044	.000	.000
Purpose1	.321	.048	1.000	.000	.000	.000	1.000	.000	.321	.048	.000	.000
Political3	.323	.165	.000	1.360	.000	.000	.000	1.360	.323	.165	.000	.000
Political2	.306	.156	.000	1.288	.000	.000	.000	1.288	.306	.156	.000	.000
Political1	.237	.121	.000	1.000	.000	.000	.000	1.000	.237	.121	.000	.000

Table C-77: Stakeholder Involvement Full Measurement Model Squared Multiple Correlations

	Estimate
Purposeful	.062
Political	.096
Purpose5	.495
Purpose4	.473
Purpose3	.669
Purpose2	.560
Purpose1	.606
Political3	.680
Political2	.603
Political1	.509

Figure C-4: Information Use and Organizational Performance Initial Measurement Model
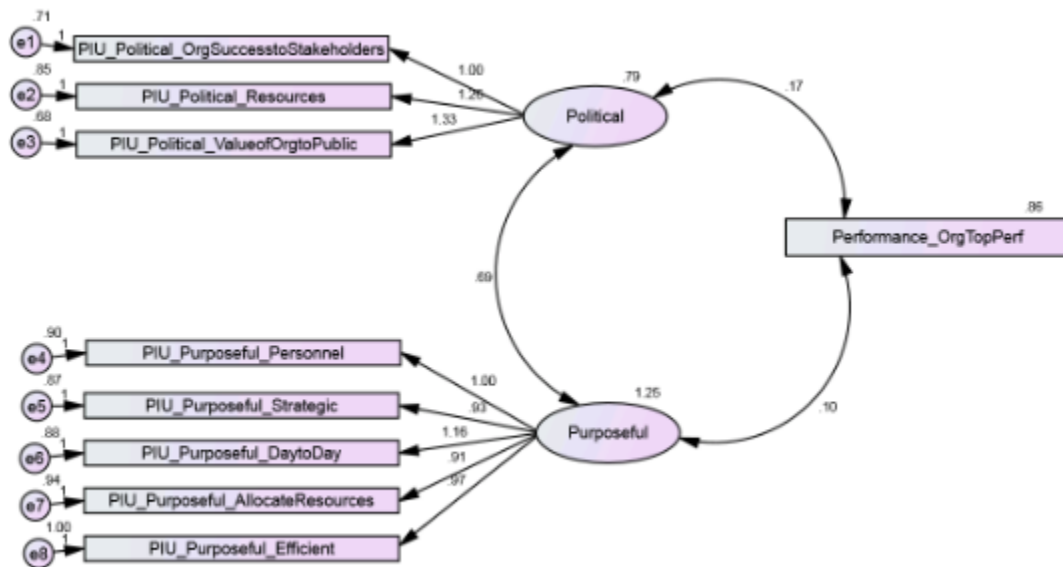
Table C-78: Information Use and Organizational Performance Initial Measurement Model Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
Perf2	.000	4.000	-.783	-5.154	.505	1.661
Purpose5	.000	5.000	.078	.512	-.901	-2.967
Purpose4	.000	5.000	.216	1.425	-.905	-2.980
Purpose3	.000	5.000	-.831	-5.467	-.283	-.931
Purpose2	.000	5.000	.307	2.018	-.781	-2.571
Purpose1	.000	5.000	.203	1.334	-.846	-2.783
Political3	.000	5.000	-.445	-2.928	-.832	-2.740
Political2	.000	5.000	-.243	-1.602	-.984	-3.238
Political1	.000	5.000	.310	2.043	-.391	-1.285
Multivariate					9.872	5.656

Table C-79: Information Use and Organizational Performance Initial Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	20	46.523	25	.006	1.861
Saturated model	45	.000	0		
Independence model	9	1008.530	36	.000	28.015

Table C-80: Information Use and Organizational Performance Initial Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.954	.934	.978	.968	.978
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-81: Information Use and Organizational Performance Initial Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.694	.662	.679
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-82: Information Use and Organizational Performance Initial Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.058	.031	.083	.288
Independence model	.323	.306	.340	.000

Table C-83: Information Use and Organizational Performance Initial Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Political	<-->	Purposeful	.689	.101	6.844	***	par_7
Political	<-->	Perf2	.171	.058	2.922	.003	par_8
Purposeful	<-->	Perf2	.096	.070	1.374	.169	par_9

Table C-84: Information Use and Organizational Performance Initial Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	Perf2	.170	.025
e7	<-->	Perf2	.163	.024
e7	<-->	Purposeful	1.458	.074
e7	<-->	Political	3.371	-.092
e7	<-->	e8	11.472	.233
e6	<-->	Perf2	.164	-.024
e6	<-->	Purposeful	.280	-.033
e6	<-->	Political	.704	.043
e6	<-->	e8	2.619	-.113
e6	<-->	e7	.161	.027
e5	<-->	Perf2	2.491	-.090
e5	<-->	Purposeful	.189	.026
e5	<-->	Political	.211	-.022
e5	<-->	e8	.029	.011

Table C-84 Continued

e5	<-->	e7	.232	-.031
e5	<-->	e6	.103	-.021
e4	<-->	Perf2	1.477	.071
e4	<-->	Purposeful	.740	-.052
e4	<-->	Political	1.290	.057
e4	<-->	e8	1.984	-.096
e4	<-->	e7	3.455	-.123
e4	<-->	e6	.779	.059
e4	<-->	e5	1.223	.071
e3	<-->	Perf2	2.736	-.093
e3	<-->	Purposeful	.499	-.041
e3	<-->	Political	.568	.034
e3	<-->	e8	1.515	-.082
e3	<-->	e7	1.954	-.090
e3	<-->	e6	4.148	.135
e3	<-->	e5	.018	-.008
e3	<-->	e4	.288	-.035
e2	<-->	Perf2	.413	.038
e2	<-->	Purposeful	.225	-.030
e2	<-->	Political	.044	.010
e2	<-->	e8	1.481	-.086
e2	<-->	e7	.942	-.066
e2	<-->	e6	1.003	-.070
e2	<-->	e4	6.480	.172
e2	<-->	e3	1.042	.063
e1	<-->	Perf2	1.786	.070
e1	<-->	Purposeful	2.018	.078
e1	<-->	Political	1.474	-.053
e1	<-->	e8	8.339	.179

Table C-84 Continued

e1	<-->	e7	.379	.037
e1	<-->	e6	.161	-.025
e1	<-->	e5	.229	-.028
e1	<-->	e4	.649	-.048
e1	<-->	e3	.051	-.012
e1	<-->	e2	1.112	-.062

Table C-85: Information Use and Organizational Performance Initial Measurement Model Regression Weight Modification Index

			Estimate	S.E.	C.R.	P	Label
Political2	<---	Political	1.260	.115	10.995	***	par_1
Political3	<---	Political	1.334	.117	11.410	***	par_2
Purpose2	<---	Purposeful	.930	.078	11.904	***	par_3
Purpose3	<---	Purposeful	1.163	.089	13.018	***	par_4
Purpose4	<---	Purposeful	.907	.079	11.512	***	par_5
Political1	<---	Political	1.000				
Purpose1	<---	Purposeful	1.000				
Purpose5	<---	Purposeful	.972	.083	11.750	***	par_6

Table C-86: Information Use and Organizational Performance Initial Measurement Model Squared Multiple Correlations

	Estimate
Purpose5	.542
Purpose4	.522
Purpose3	.658
Purpose2	.555
Purpose1	.583
Political3	.674
Political2	.594
Political1	.524

Figure C-5: Information Use and Performance Final Measurement Model
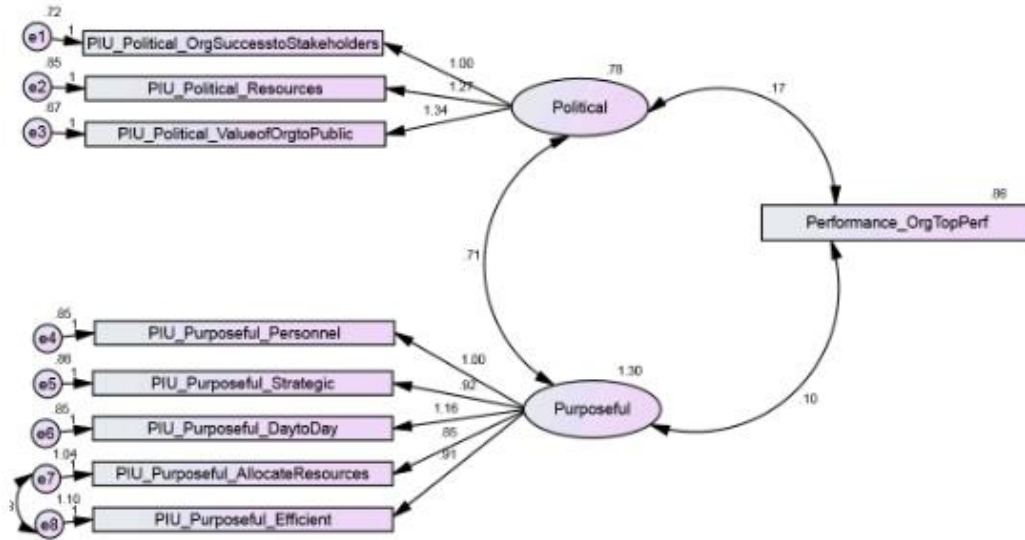
Table C-87: Information Use and Organizational Performance Final Measurement Model CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	21	33.361	24	.097	1.390
Saturated model	45	.000	0		
Independence model	9	1008.530	36	.000	28.015

Table C-88: Information Use and Organizational Performance Final Measurement Model Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.967	.950	.990	.986	.990
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-89: Information Use and Organizational Performance Final Measurement Model Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.645	.660
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-90: Information Use and Organizational Performance Final Measurement Model RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.000	.068	.704
Independence model	.323	.306	.340	.000

Table C-91: Information Use and Organizational Performance Final Measurement Model Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Political	<-->	Purposeful	.705	.102	6.891	***	par_7
Purposeful	<-->	Perf2	.096	.071	1.357	.175	par_8
Political	<-->	Perf2	.170	.058	2.916	.004	par_9
e7	<-->	e8	.278	.084	3.332	***	par_10

Table C-92: Information Use and Organizational Performance Final Measurement Model Covariance Modification Index

			M.I.	Par Change
e8	<-->	Perf2	.087	.018
e8	<-->	Purposeful	.359	-.038
e8	<-->	Political	.699	.042
e7	<-->	Perf2	.082	.017
e7	<-->	Purposeful	.870	.058
e7	<-->	Political	1.920	-.068
e6	<-->	Perf2	.123	-.021
e6	<-->	Purposeful	.059	-.015
e6	<-->	Political	.160	.020
e6	<-->	e8	.949	-.067
e6	<-->	e7	2.539	.106
e5	<-->	Perf2	2.398	-.089
e5	<-->	Purposeful	.390	.038
e5	<-->	Political	.542	-.035
e5	<-->	e8	.883	.062
e5	<-->	e7	.024	.010
e5	<-->	e6	.652	-.052
e4	<-->	Perf2	1.763	.077

Table C-92 Continued

e4	<-->	Purposeful	.322	-.035
e4	<-->	Political	.464	.033
e4	<-->	e8	.169	-.027
e4	<-->	e7	.912	-.061
e4	<-->	e5	.364	.038
e3	<-->	Perf2	2.744	-.093
e3	<-->	Purposeful	.399	-.037
e3	<-->	Political	.496	.031
e3	<-->	e8	.528	-.047
e3	<-->	e7	.889	-.059
e3	<-->	e6	3.202	.118
e3	<-->	e5	.124	-.022
e3	<-->	e4	.786	-.056
e2	<-->	Perf2	.425	.039
e2	<-->	Purposeful	.149	-.024
e2	<-->	Political	.023	.007
e2	<-->	e8	.718	-.058
e2	<-->	e7	.317	-.037
e2	<-->	e6	1.754	-.092
e2	<-->	e4	5.701	.160
e2	<-->	e3	.829	.055
e1	<-->	Perf2	1.802	.071
e1	<-->	Purposeful	1.537	.070
e1	<-->	Political	1.199	-.047
e1	<-->	e8	8.220	.175
e1	<-->	e7	.020	.008
e1	<-->	e6	.071	-.016
e1	<-->	e5	.119	-.020
e1	<-->	e4	.557	-.044

Table C-92 Continued

e1	<-->	e3	.027	-.009
e1	<-->	e2	.993	-.059

Table C-93: Information Use and Organizational Performance Final Measurement Model Regression Weight Modification Index

			Estimate	S.E.	C.R.	P	Label
Political2	<---	Political	1.267	.115	10.982	***	par_1
Political3	<---	Political	1.341	.118	11.396	***	par_2
Purpose2	<---	Purposeful	.919	.076	12.047	***	par_3
Purpose3	<---	Purposeful	1.156	.087	13.235	***	par_4
Purpose4	<---	Purposeful	.850	.078	10.898	***	par_5
Political1	<---	Political	1.000				
Purpose1	<---	Purposeful	1.000				
Purpose5	<---	Purposeful	.913	.082	11.166	***	par_6

Table C-94: Information Use and Organizational Performance Final Measurement Model Squared Multiple Correlations

	Estimate
Purpose5	.495
Purpose4	.474
Purpose3	.672
Purpose2	.561
Purpose1	.603
Political3	.676
Political2	.596
Political1	.521

Table C-95: Information Use and Performance Full Model Iteration 1 Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	33.361	24	.097	1.390	.967	.039
Saturated model	.000	0			1.000	
Independence model	1008.530	36	.000	28.015	.000	.323

Table C-96: Information Use and Organizational Performance Full Model Iteration 1 CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	21	33.361	24	.097	1.390
Saturated model	45	.000	0		
Independence model	9	1008.530	36	.000	28.015

Table C-97: Information Use and Organizational Performance Full Model Iteration 1 Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.967	.950	.990	.986	.990
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-98: Information Use and Organizational Performance Full Model Iteration 1 Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.645	.660
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-99: Information Use and Organizational Performance Full Model Iteration 1 RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.000	.068	.704
Independence model	.323	.306	.340	.000

Table C-100: Information Use and Organizational Performance Full Model Iteration 1 Covariance Modification Index

			M.I.	Par Change
e8	<-->	Purposeful	.392	-.040
e8	<-->	Political	.846	.047
e8	<-->	e9	.087	.018
e7	<-->	Purposeful	.820	.056
e7	<-->	Political	1.767	-.066
e7	<-->	e9	.082	.017
e6	<-->	Purposeful	.045	-.013
e6	<-->	Political	.100	.016
e6	<-->	e9	.123	-.021
e6	<-->	e8	.949	-.067
e6	<-->	e7	2.539	.106
e5	<-->	Purposeful	.584	.046
e5	<-->	Political	1.284	-.055
e5	<-->	e9	2.398	-.089

Table C-100 Continued

e5	<-->	e8	.883	.062
e5	<-->	e7	.024	.010
e5	<-->	e6	.652	-.052
e4	<-->	Purposeful	.471	-.042
e4	<-->	Political	1.043	.051
e4	<-->	e9	1.763	.077
e4	<-->	e8	.169	-.027
e4	<-->	e7	.912	-.061
e4	<-->	e5	.364	.038
e3	<-->	Purposeful	.232	-.029
e3	<-->	Political	.108	.015
e3	<-->	e9	2.744	-.093
e3	<-->	e8	.528	-.047
e3	<-->	e7	.889	-.059
e3	<-->	e6	3.202	.118
e3	<-->	e5	.124	-.022
e3	<-->	e4	.786	-.056
e2	<-->	Purposeful	.199	-.028
e2	<-->	Political	.096	.015
e2	<-->	e9	.425	.039
e2	<-->	e8	.718	-.058
e2	<-->	e7	.317	-.037
e2	<-->	e6	1.754	-.092
e2	<-->	e4	5.701	.160
e2	<-->	e3	.829	.055
e1	<-->	Purposeful	1.246	.063
e1	<-->	Political	.611	-.034
e1	<-->	e9	1.802	.071
e1	<-->	e8	8.220	.175

Table C-100 Continued

e1	<-->	e7	.020	.008
e1	<-->	e6	.071	-.016
e1	<-->	e5	.119	-.020
e1	<-->	e4	.557	-.044
e1	<-->	e3	.027	-.009
e1	<-->	e2	.993	-.059

Table C-101: Information Use and Organizational Performance Full Model Iteration 1 Regression Weight Modification Index

			M.I.	Par Change
Perf2	<---	Purpose5	.069	.010
Perf2	<---	Purpose4	.070	.011
Perf2	<---	Purpose3	.030	-.006
Perf2	<---	Purpose2	.886	-.038
Perf2	<---	Purpose1	.568	.029
Perf2	<---	Political3	.605	-.031
Perf2	<---	Political2	.133	.014
Perf2	<---	Political1	.720	.039
Purpose5	<---	Political	.332	.046
Purpose5	<---	Perf2	.188	.031
Purpose5	<---	Purpose3	.238	-.020
Purpose5	<---	Purpose2	.331	.027
Purpose5	<---	Purpose1	.055	-.011
Purpose5	<---	Political1	4.811	.117
Purpose4	<---	Political	.693	-.065
Purpose4	<---	Purpose3	.635	.031
Purpose4	<---	Purpose1	.298	-.024
Purpose4	<---	Political3	1.148	-.047
Purpose4	<---	Political2	.819	-.039

Table C-101 Continued

Purpose4	<---	Political1	.214	-.024
Purpose3	<---	Political	.040	.016
Purpose3	<---	Perf2	.083	-.021
Purpose3	<---	Purpose5	.161	-.018
Purpose3	<---	Purpose4	.971	.046
Purpose3	<---	Purpose2	.257	-.024
Purpose3	<---	Political3	.985	.046
Purpose3	<---	Political2	.358	-.027
Purpose2	<---	Political	.508	-.055
Purpose2	<---	Perf2	2.839	-.114
Purpose2	<---	Purpose5	.490	.030
Purpose2	<---	Purpose4	.085	.013
Purpose2	<---	Purpose3	.170	-.016
Purpose2	<---	Purpose1	.122	.015
Purpose2	<---	Political3	.497	-.031
Purpose2	<---	Political2	.311	-.024
Purpose2	<---	Political1	.478	-.035
Purpose1	<---	Political	.415	.050
Purpose1	<---	Perf2	2.112	.100
Purpose1	<---	Purpose5	.223	-.020
Purpose1	<---	Purpose4	.604	-.035
Purpose1	<---	Purpose2	.140	.017
Purpose1	<---	Political2	3.211	.079
Political3	<---	Purposeful	.097	-.018
Political3	<---	Perf2	2.495	-.105
Political3	<---	Purpose5	.801	-.038
Political3	<---	Purpose4	1.047	-.045
Political3	<---	Purpose3	.421	.025
Political3	<---	Purpose2	.187	-.019

Table C-101 Continued

Political3	<---	Purpose1	.533	-.031
Political3	<---	Political2	.295	.023
Political3	<---	Political1	.012	-.005
Political2	<---	Purposeful	.081	-.017
Political2	<---	Perf2	.437	.046
Political2	<---	Purpose5	.797	-.039
Political2	<---	Purpose4	.565	-.035
Political2	<---	Purpose3	.765	-.036
Political2	<---	Purpose2	.065	-.012
Political2	<---	Purpose1	1.322	.051
Political2	<---	Political3	.207	.021
Political2	<---	Political1	.420	-.034
Political1	<---	Purposeful	.503	.038
Political1	<---	Perf2	1.521	.077
Political1	<---	Purpose5	6.378	.099
Political1	<---	Purpose4	1.210	.045
Political1	<---	Purpose3	.170	.015
Political1	<---	Purpose2	.082	.012
Political1	<---	Political2	.328	-.023

Table C-102: Information Use and Performance Full Model Iteration 1 Regression Weights

			Estimate	Std. Estimate	S.E.	C.R.	P
Political2	<---	Political	1.267	.772	.115	10.982	***
Political3	<---	Political	1.341	.822	.118	11.396	***
Purpose2	<---	Purposeful	.919	.749	.076	12.047	***
Purpose3	<---	Purposeful	1.156	.820	.087	13.235	***
Purpose4	<---	Purposeful	.850	.689	.078	10.898	***
Political1	<---	Political	1.000	.721			
Purpose1	<---	Purposeful	1.000	.776			
Purpose5	<---	Purposeful	.913	.703	.082	11.166	***
Perf2	<---	Political	.294	.280	.115	2.558	.011
Perf2	<---	Purposeful	-.086	-.105	.087	-.989	.323

Table C-103: Information Use and Performance Full Model Iteration 1 Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Political	<-->	Purposeful	.705	.102	6.891	***	par_7
e7	<-->	e8	.278	.084	3.332	***	par_8

Table C-104: Information Use and Organizational Performance Full Model Iteration 1 Squared Multiple Correlations

	Estimate
Perf2	.048
Purpose5	.495
Purpose4	.474
Purpose3	.672
Purpose2	.561
Purpose1	.603
Political3	.676
Political2	.596
Political1	.521

Table C-105: Information Use and Performance Full Model Iteration 2 Model Fit Statistics

Model	CMIN	DF	P	CMIN/DF	NFI Delta1	RMSEA
Default model	34.361	24	.097	1.390	.967	.039
Saturated model	.000	0			1.000	
Independence model	1008.530	36	.000	28.015	.000	.323

Table C-106: Information Use and Organizational Performance Full Model Iteration 2 CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	20	34.335	25	.101	1.373
Saturated model	45	.000	0		
Independence model	9	1008.530	36	.000	28.015

Table C-107: Information Use and Organizational Performance Full Model Iteration 2 Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.966	.951	.991	.986	.990
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table C-108: Information Use and Organizational Performance Full Model Iteration 2 Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.694	.671	.688
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

Table C-109: Information Use and Organizational Performance Full Model Iteration 2 RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.038	.000	.067	.723
Independence model	.323	.306	.340	.000

Table C-110: Information Use and Organizational Performance Full Model Iteration 2 Covariance Modification Index

			M.I.	Par Change
e9	<-->	Purposeful	.926	-.054
e9	<-->	Political	.471	.031
e8	<-->	Purposeful	.373	-.039
e8	<-->	Political	.811	.046
e8	<-->	e9	.039	.012
e7	<-->	Purposeful	.833	.057
e7	<-->	Political	1.810	-.067
e6	<-->	Purposeful	.051	-.014
e6	<-->	Political	.116	.017
e6	<-->	e9	.394	-.038
e6	<-->	e8	.945	-.067
e6	<-->	e7	2.527	.106
e5	<-->	Purposeful	.519	.044
e5	<-->	Political	1.151	-.052
e5	<-->	e9	3.276	-.104
e5	<-->	e8	.916	.063
e5	<-->	e7	.029	.011
e5	<-->	e6	.567	-.049
e4	<-->	Purposeful	.417	-.040
e4	<-->	Political	.932	.048
e4	<-->	e9	1.280	.066
e4	<-->	e8	.191	-.029
e4	<-->	e7	.968	-.063

Table C-110 Continued

e4	<-->	e5	.371	.038
e3	<-->	Purposeful	.260	-.030
e3	<-->	Political	.119	.015
e3	<-->	e9	1.792	-.076
e3	<-->	e8	.504	-.046
e3	<-->	e7	.840	-.058
e3	<-->	e6	3.361	.121
e3	<-->	e5	.117	-.021
e3	<-->	e4	.720	-.054
e2	<-->	Purposeful	.116	-.022
e2	<-->	Political	.056	.011
e2	<-->	e9	.851	.055
e2	<-->	e8	.696	-.057
e2	<-->	e7	.299	-.036
e2	<-->	e6	1.767	-.092
e2	<-->	e5	.010	-.007
e2	<-->	e4	5.850	.162
e2	<-->	e3	.625	.048
e1	<-->	Purposeful	1.541	.070
e1	<-->	Political	.751	-.038
e1	<-->	e9	2.154	.078
e1	<-->	e8	8.222	.175
e1	<-->	e7	.023	.009
e1	<-->	e6	.077	-.017
e1	<-->	e5	.128	-.021
e1	<-->	e4	.536	-.043
e1	<-->	e3	.046	-.012
e1	<-->	e2	.883	-.056

Table C-111: Information Use and Organizational Performance Full Model Iteration 2 Regression Weight Modification Index

			M.I.	Par Change
Perf2	<---	Purposeful	.369	-.032
Perf2	<---	Purpose5	.059	-.009
Perf2	<---	Purpose4	.084	-.012
Perf2	<---	Purpose3	.602	-.027
Perf2	<---	Purpose2	2.333	-.062
Perf2	<---	Purpose1	.040	.008
Perf2	<---	Political3	.384	-.024
Perf2	<---	Political2	.266	.020
Perf2	<---	Political1	.865	.043
Purpose5	<---	Political	.322	.046
Purpose5	<---	Perf2	.087	.021
Purpose5	<---	Purpose3	.238	-.020
Purpose5	<---	Purpose2	.345	.028
Purpose5	<---	Purpose1	.062	-.011
Purpose5	<---	Political3	.010	.005
Purpose5	<---	Political1	4.805	.117
Purpose4	<---	Political	.717	-.066
Purpose4	<---	Purpose3	.633	.031
Purpose4	<---	Purpose2	.011	.005
Purpose4	<---	Purpose1	.315	-.024
Purpose4	<---	Political3	1.137	-.047
Purpose4	<---	Political2	.821	-.039
Purpose4	<---	Political1	.216	-.024
Purpose3	<---	Political	.047	.018
Purpose3	<---	Perf2	.330	-.041
Purpose3	<---	Purpose5	.160	-.018
Purpose3	<---	Purpose4	.966	.046

Table C-111 Continued

Purpose3	<---	Purpose2	.224	-.022
Purpose3	<---	Political3	1.028	.047
Purpose3	<---	Political2	.348	-.027
Purpose2	<---	Political	.460	-.052
Purpose2	<---	Perf2	3.578	-.128
Purpose2	<---	Purpose5	.511	.030
Purpose2	<---	Purpose4	.094	.014
Purpose2	<---	Purpose3	.148	-.015
Purpose2	<---	Purpose1	.124	.015
Purpose2	<---	Political3	.453	-.029
Purpose2	<---	Political2	.290	-.023
Purpose2	<---	Political1	.457	-.035
Purpose1	<---	Political	.374	.048
Purpose1	<---	Perf2	1.479	.083
Purpose1	<---	Purpose5	.246	-.021
Purpose1	<---	Purpose4	.645	-.036
Purpose1	<---	Purpose2	.144	.017
Purpose1	<---	Political2	3.192	.078
Political3	<---	Purposeful	.110	-.019
Political3	<---	Perf2	1.718	-.087
Political3	<---	Purpose5	.794	-.037
Political3	<---	Purpose4	1.026	-.045
Political3	<---	Purpose3	.430	.025
Political3	<---	Purpose2	.194	-.020
Political3	<---	Purpose1	.522	-.030
Political3	<---	Political2	.223	.020
Political3	<---	Political1	.020	-.007
Political2	<---	Purposeful	.048	-.013
Political2	<---	Perf2	.815	.063

Table C-111 Continued

Political2	<---	Purpose5	.700	-.037
Political2	<---	Purpose4	.483	-.032
Political2	<---	Purpose3	.684	-.034
Political2	<---	Purpose2	.046	-.010
Political2	<---	Purpose1	1.467	.054
Political2	<---	Political3	.153	.018
Political2	<---	Political1	.375	-.033
Political1	<---	Purposeful	.628	.043
Political1	<---	Perf2	2.061	.090
Political1	<---	Purpose5	6.663	.101
Political1	<---	Purpose4	1.344	.048
Political1	<---	Purpose3	.221	.017
Political1	<---	Purpose2	.113	.014
Political1	<---	Purpose1	.026	.006
Political1	<---	Political3	.011	-.004
Political1	<---	Political2	.292	-.022

Table C-112: Information Use and Performance Full Model Iteration 2 Regression Weights

			Estimate	Std. Est	S.E.	C.R.	P	Label
Political2	<---	Political	1.269	.772	.116	10.956	***	par_1
Political3	<---	Political	1.349	.825	.119	11.379	***	par_2
Purpose2	<---	Purposeful	.916	.748	.076	12.040	***	par_3
Purpose3	<---	Purposeful	1.154	.819	.087	13.247	***	par_4
Purpose4	<---	Purposeful	.849	.689	.078	10.911	***	par_5
Political1	<---	Political	1.000	.720				
Purpose1	<---	Purposeful	1.000	.777				
Purpose5	<---	Purposeful	.912	.703	.082	11.178	***	par_6
Perf2	<---	Political	.206	.196	.071	2.890	.004	par_9

Table C-113: Information Use and Performance Full Model Iteration 2 Covariance Weights

			Estimate	S.E.	C.R.	P	Label
Political	<-->	Purposeful	.702	.102	6.874	***	par_7
e7	<-->	e8	.278	.084	3.325	***	par_8

Table C-114: Information Use and Organizational Performance Full Model Iteration 2 Squared Multiple Correlations

	Estimate
Perf2	.038
Purpose5	.495
Purpose4	.474
Purpose3	.671
Purpose2	.559
Purpose1	.604
Political3	.681
Political2	.596
Political1	.518

Table C-115: Information Use and Organizational Performance Full Model Iteration 3 Covariance Modification Index

			M.I.	Par Change
e9	<-->	Purposeful	.369	-.042
e9	<-->	e10	.471	.031
e8	<-->	e10	.811	.046
e8	<-->	e9	.039	.012
e7	<-->	e10	1.810	-.067
e6	<-->	e10	.116	.017
e6	<-->	e9	.394	-.038
e6	<-->	e8	.945	-.067
e6	<-->	e7	2.527	.106
e5	<-->	e10	1.151	-.052
e5	<-->	e9	3.276	-.104
e5	<-->	e8	.916	.063
e5	<-->	e7	.029	.011
e5	<-->	e6	.567	-.049
e4	<-->	e10	.932	.048
e4	<-->	e9	1.280	.066
e4	<-->	e8	.191	-.029
e4	<-->	e7	.968	-.063
e4	<-->	e5	.371	.038
e3	<-->	Purposeful	.110	-.025

Table C-115 Continued

e3	<-->	e10	.119	.015
e3	<-->	e9	1.792	-.076
e3	<-->	e8	.504	-.046
e3	<-->	e7	.840	-.058
e3	<-->	e6	3.361	.121
e3	<-->	e5	.117	-.021
e3	<-->	e4	.720	-.054
e2	<-->	Purposeful	.048	-.017
e2	<-->	e10	.056	.011
e2	<-->	e9	.851	.055
e2	<-->	e8	.696	-.057
e2	<-->	e7	.299	-.036
e2	<-->	e6	1.767	-.092
e2	<-->	e5	.010	-.007
e2	<-->	e4	5.850	.162
e2	<-->	e3	.625	.048
e1	<-->	Purposeful	.628	.056
e1	<-->	e10	.751	-.038
e1	<-->	e9	2.154	.078
e1	<-->	e8	8.222	.175
e1	<-->	e7	.023	.009
e1	<-->	e6	.077	-.017
e1	<-->	e5	.128	-.021
e1	<-->	e4	.536	-.043
e1	<-->	e3	.046	-.012
e1	<-->	e2	.883	-.056

Table C-116: Information Use and Organizational Performance Full Model Iteration 3 Regression Weight Modification Index

			M.I.	Par Change
Perf2	<---	Purposeful	.369	-.032
Perf2	<---	Purpose5	.059	-.009
Perf2	<---	Purpose4	.084	-.012
Perf2	<---	Purpose3	.602	-.027
Perf2	<---	Purpose2	2.333	-.062
Perf2	<---	Purpose1	.040	.008
Perf2	<---	Political3	.384	-.024
Perf2	<---	Political2	.266	.020
Perf2	<---	Political1	.865	.043
Purpose5	<---	Political	.322	.046
Purpose5	<---	Perf2	.087	.021
Purpose5	<---	Purpose3	.238	-.020
Purpose5	<---	Purpose2	.345	.028
Purpose5	<---	Purpose1	.062	-.011
Purpose5	<---	Political3	.010	.005
Purpose5	<---	Political1	4.805	.117
Purpose4	<---	Political	.717	-.066
Purpose4	<---	Purpose3	.633	.031
Purpose4	<---	Purpose2	.011	.005
Purpose4	<---	Purpose1	.315	-.024
Purpose4	<---	Political3	1.137	-.047
Purpose4	<---	Political2	.821	-.039
Purpose4	<---	Political1	.216	-.024
Purpose3	<---	Political	.047	.018
Purpose3	<---	Perf2	.330	-.041
Purpose3	<---	Purpose5	.160	-.018
Purpose3	<---	Purpose4	.966	.046

Table C-116 Continued

Purpose3	<---	Purpose2	.224	-.022
Purpose3	<---	Political3	1.028	.047
Purpose3	<---	Political2	.348	-.027
Purpose2	<---	Political	.460	-.052
Purpose2	<---	Perf2	3.578	-.128
Purpose2	<---	Purpose5	.511	.030
Purpose2	<---	Purpose4	.094	.014
Purpose2	<---	Purpose3	.148	-.015
Purpose2	<---	Purpose1	.124	.015
Purpose2	<---	Political3	.453	-.029
Purpose2	<---	Political2	.290	-.023
Purpose2	<---	Political1	.457	-.035
Purpose1	<---	Political	.374	.048
Purpose1	<---	Perf2	1.479	.083
Purpose1	<---	Purpose5	.246	-.021
Purpose1	<---	Purpose4	.645	-.036
Purpose1	<---	Purpose2	.144	.017
Purpose1	<---	Political2	3.192	.078
Political3	<---	Purposeful	.110	-.019
Political3	<---	Perf2	1.718	-.087
Political3	<---	Purpose5	.794	-.037
Political3	<---	Purpose4	1.026	-.045
Political3	<---	Purpose3	.430	.025
Political3	<---	Purpose2	.194	-.020
Political3	<---	Purpose1	.522	-.030
Political3	<---	Political2	.223	.020
Political3	<---	Political1	.020	-.007
Political2	<---	Purposeful	.048	-.013
Political2	<---	Perf2	.815	.063

Table C-116 Continued

Political2	<---	Purpose5	.700	-.037
Political2	<---	Purpose4	.483	-.032
Political2	<---	Purpose3	.684	-.034
Political2	<---	Purpose2	.046	-.010
Political2	<---	Purpose1	1.467	.054
Political2	<---	Political3	.153	.018
Political2	<---	Political1	.375	-.033
Political1	<---	Purposeful	.628	.043
Political1	<---	Perf2	2.061	.090
Political1	<---	Purpose5	6.663	.101
Political1	<---	Purpose4	1.344	.048
Political1	<---	Purpose3	.221	.017
Political1	<---	Purpose2	.113	.014
Political1	<---	Purpose1	.026	.006
Political1	<---	Political3	.011	-.004
Political1	<---	Political2	.292	-.022

Table C-117: Information Use and Performance Full Model Iteration 3 Model Effects

	Total Effects		Direct Effects		Indirect Effects	
	Political	**Purposeful**	**Political**	**Political**	**Purposeful**	**Political**
Political	.541	.000	.541	.000	.000	.000
Perf2	.111	.206	.000	.206	.111	.000
Purpose5	.912	.000	.912	.000	.000	.000
Purpose4	.849	.000	.849	.000	.000	.000
Purpose3	1.154	.000	1.154	.000	.000	.000
Purpose2	.916	.000	.916	.000	.000	.000
Purpose1	1.000	.000	1.000	.000	.000	.000
Political3	.729	1.349	.000	1.349	.729	.000
Political2	.686	1.269	.000	1.269	.686	.000
Political1	.541	1.000	.000	1.000	.541	.000

Table C-118: Information Use and Organizational Performance Full Model Iteration 3 Squared Multiple Correlations

	Estimate
Political	.487
Perf2	.038
Purpose5	.495
Purpose4	.474
Purpose3	.671
Purpose2	.559
Purpose1	.604
Political3	.681
Political2	.596
Political1	.518

Appendix D. Participant Materials

Understanding Performance Information Use by Nonprofit Executives:
An Empirical Analysis

Why the survey?
Nonprofit organizations face a lot of pressure to perform. Increasingly, performance is defined by quantitative information. While results-oriented reforms are the predominant model for public managers to follow, it remains difficult to evaluate their success. Recently, scholars have begun investigating performance information use as a way of understanding if these results-oriented reforms have been worth the effort.

Research on performance information use has focused on governmental contexts, almost to the exclusion of nonprofits. This study aims to fill this gap by *exploring performance information use in nonprofit youth-focused service delivery organizations.*

In addition to fulfilling the requirements for my doctoral degree, this research is part of a longstanding partnership between SAS Institute, where I work as a Research Scientist, and the Forum for Youth Investment. As our organizations work to deliver advanced analytics to communities across the United States, we've undertaken this study to better understand common practices within your field in order to develop software solutions better aligned with your organization's needs.

What does participating entail?
Your point of view is important in helping to understand if, how, and why leaders like yourself use performance information. This short 10 minute survey asks about your organization, its stakeholders, and your leadership behaviors and motivations. *This is in no way an evaluation: there are no right answers to the questions in this survey and we appreciate your candor*.

Please see the Informed Consent Form for Research on the following page. This has more information on the study and our request for your participation. Thank you in advance for your time and assistance with this project!

North Carolina State University
INFORMED CONSENT FORM for RESEARCH
This form is valid from December 1, 2015 through December 1, 2016
Understanding Performance Information Use by Nonprofit Executives: An Empirical Analysis

Principal Investigator: Clare FitzGerald, MPA   Faculty Sponsor: RaJade M Berry-James, PhD

INFORMATION ABOUT THIS STUDY
We are asking you to participate in a research study which explores the use of performance information by nonprofit executives. Your participation in this study is voluntary; you have the right to participate, to not participate, or to stop participating without penalty. Should you agree to participate you will be asked to complete an online survey about your relationship with stakeholders as it pertains to performance measurement, your motivation and behavioral responses related to using organizational performance information, and questions about your organization's capacity for performance measurement and culture.

RISKS
The risks associated with this survey are minimal. You may decline to answer any question and/or withdraw from participation at any time. As part of the survey, you will be asked about your own use of performance information to improve or advocate for your organization. Findings generated from this study will be reported in aggregate. Consequently, the risk of personal identification is very low.

BENEFITS
This research is part of a longstanding partnership between SAS and the Forum for Youth Investment. As our organizations work to deliver advanced analytics to communities across the United States, we've undertaken this study to better understand common practices in order to develop software solutions better aligned with the needs of organizations like your own. This study will build knowledge around what drives nonprofit executives to use performance information. Findings in this study may help provide ways that executives use performance management systems to boost organizational performance. As a participant, you will receive a summary of the findings in this study.

CONFIDENTIALITY
The information you provide will be kept _confidential_ to the full extent allowable by law. Data will be stored in password protected Microsoft Excel files on a password protected computer. All identifying information will be deleted at the end of data collection. All data will be reported in aggregate. You will not be identified in any report or publication by name.

CONTACT
Contact the researcher, Clare FitzGerald MPA, at SAS Institute Inc. SAS Campus Dr., J1209, Cary, NC 27513, via email at cjfitzge@ncsu.edu or via telephone at 919-640-7227 if you have questions at any time about the study or study procedures. If you feel you have not been treated according to the descriptions in this form or your rights as a participant in research have been violated during the course of the project, you may contact Deb Paxton with the NCSU Institutional Review Board for the Use of Human Subjects in Research Committee, Box 7514, NCSU Campus (919-515-7515).

PARTICIPATION
Your participation in this study is voluntary. You may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any time without penalty. If you withdraw from the study before data collection is completed your data will be destroyed at your request.

CONSENT TO PARTICIPATE
I have read and understand the above information. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.

"I have read the above informed consent and agree to continue with this survey" ___
"I do not which to participate in this survey" ___

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The following section is designed to gather background information about your organization

1. What is the name of your organization? _____

2. In what state is your organization located? _____

3. In what city or town is your organization located?

4. What best describes your current position? 1=Non-supervisor; 2=Team leader; 3=First-line supervisor (3); 4=Middle manager; 5=Top manager/Executive

5. Approximately how many full-time paid employees does your organization have? #

6. Where does the majority of your organization's funding come from? 1=government contracts/grants; 2=foundations and donors; 3=fundraising efforts 4=fee for service

7. Approximately what percentage of your organization's annual operating budget is allocated to overhead costs (e.g. hardware and software investment; professional financial or accounting staff; facility renovation)? # Entry (potential binning later) (1=0%; 2=1%-25%; 3= 26%-50%; 4= 51%-75%; 5= 76%-100%)

The following section defines the terms performance measurement and performance information and asks questions regarding the frequency with which your organization collects this type of information and the extent to which it is standard in your organization. This is in no way an evaluation of your current processes, there are no correct answers.

8. Performance measurement refers to the practice of evaluating organizational performance by developing measures of success and collecting data related to those measures. Measures used by nonprofits can include workload and output indicators (e.g. number of clients served, quantity of program units delivered, activities provided); unit cost and efficiency measures (i.e. measurement of the relationship between resources and results); outcomes and effectiveness measures (i.e. measurement of how well a service is provided or how successful a department or program is at meeting objectives); client or customer satisfaction; external audits, and industry standards and benchmarks.

   For the following items, select the most appropriate value:

   How often do you **_collect_** these types of information? (1=never, 2=daily; 3=weekly; 4=monthly; 5=quarterly; 6=annually)
   1. Workload and output indicators
   2. Unit cost and efficiency measures
   3. Outcomes and effectiveness measures
   4. Client or customer satisfaction
   5. External audits
   6. Industry standards and benchmarks

9. In the last fiscal year, approximately what percentage of your organization's programs and/or services were subject to performance measurement? # Entry (potential binning later) (1= 0%; 2= 1%-25%; 3= 26%-50%; 4= 51%-75%; 5= 76%-100%)

10. For the following items, select the most appropriate value:

To what extent do you agree with the following statements? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree; 6=don't know)

My organization…
1. Has committed adequate resources (time, people, money) to be used in the measurement of organizational performance
2. Can readily relate outputs to organizational operations
3. Has staff capable of collecting performance information in a timely way
4. Has staff capable of thoroughly analyzing performance data
5. Has adequate information technology for performance measurement

5. For the following items, select the most appropriate value:

To what extent do you agree with the following statements? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)
1. My organization's mission is clear to almost everyone who works here.
2. It is easy to explain the goals of this organization to outsiders.
3. My organization has clearly defined goals.

6. Do the majority of your external stakeholders (e.g. foundations, corporate donors, individual donors, government, national headquarters) require your organization to use performance measurement?
___ Yes   ___ No

Do the majority of your internal stakeholders (e.g. board of directors, staff, clients) require your organization to use performance measurement?
___ Yes   ___ No

For the following items, select the most appropriate value:

Overall, how supportive are the following groups of the use of performance measurement within your organization? (1=unsupportive; 2=somewhat unsupportive; 3=neither unsupportive nor supportive; 4= somewhat supportive; 5=supportive)
1. External stakeholders (e.g. foundations, corporate donors, individual donors, government, national headquarters)
2. Internal stakeholders (e.g. board of directors, staff, clients)

Some nonprofits participate in community based partnerships. Many names are used to describe such arrangements, including (but not limited to) networks, collaborations, cooperatives and/or collective impact initiatives. Often, participating groups retain their separate identities but work together in pursuit of an agreed aim that is unlikely to be achieved by one organization working alone.

Does your organization participate in any of these cooperative arrangements with other organizations?

___Yes   ___No

3. If yes, how active is your organization in this/these partnership(s)? (1=not active; 2=somewhat active; 3=active; 4=very active; 5=extremely active)

4. If yes, do your organizational partners require the use of performance measurement within your organization?

5. If yes, how supportive are your organizational partners of the use of performance measurement within your organization? (1=unsupportive; 2=somewhat unsupportive; 3=neither unsupportive nor supportive; 4=somewhat supportive; 5=supportive)

The following sections ask about your work motivations as well as aspects of your organization's culture.

7. For the following item, select the most appropriate value:

    To what extent do you agree with the following statement? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)
    1. As a leader in my organization, I demonstrate a strong commitment to performance measurement.

8. For the following items, select the most appropriate value:

    To what extent do you agree with the following statements? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)
    1. My organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.
    2. The glue that holds my organization together is a commitment to innovation and development.
    3. The staff shows great readiness to meet new challenges.

9. For the following items, select the most appropriate value:

    To what extent do you agree with the following statements? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)
    1. Meaningful public service is very important to me.
    2. I am often reminded by daily events how dependent we are on one another.
    3. Making a difference in society means more to me than personal achievements.
    4. I am prepared to make enormous sacrifices for the good of society.
    5. I am not afraid to go to bat for the rights of others even if it means I will be ridiculed.

10. For the following items, select the most appropriate value:

   To what extent do you agree with the following statements? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)
   1. I feel that my work makes a positive difference in other people's lives.
   2. I am very aware of the ways in which my work is benefitting others.
   3. I am very conscious of the positive impact my work has on others.
   4. I have a positive impact on others in my work on a regular basis.

11. Recall that performance information refers to data that organizations systematically collect about their operations to evaluate how well they are performing. Performance information measurements can include workload and output indicators (e.g. number of clients served, quantity of program units delivered, activities provided); unit cost and efficiency measures (i.e. measurement of the relationship between resources and results); outcomes and effectiveness measures (i.e. measurement of how well a service is provided or how successful a department or program is at meeting objectives); client or customer satisfaction; external audits, and industry standards and benchmarks. For the following items, select the most appropriate value:

   During the past year, how often did you **_use_** performance information to…? (1=never, 2=daily; 3=weekly; 4=monthly; 5=quarterly; 6=annually)
   1. Make personnel decisions
   2. Make strategic decisions
   3. Make day-to-day management decisions
   4. Allocate resources
   5. Learn how to make my organization more efficient
   6. Communicate my organizational success to stakeholders
   7. Advocate for resources to support my organization
   8. Explain the value of my organization to the public

12. For the following item, select the most appropriate value:

   To what extent do you agree with the following statements? (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree)
   1. Using performance information has substantially improved my organization.
   2. Compared to similar organizations, my organization is a top performer.

As a leader in your field, your point of view is very important to this study. Using the space provided below, please elaborate on the frequency of your performance information use. Please provide details on how and for what kinds of tasks you use performance information.

Appendix E. NC State University Institutional Review Board Approval

Figure E-1: Institutional Review Board Letter of Approval

NC STATE UNIVERSITY

Office of Research, Innovation
and. Economic Development
Sponsored Programs and
Regulatory Compliance Services
research.ncsu.edu/sparcs/

Campus Box 7514
2701 Sullivan Dr. Suite 240
Raleigh, NC 27695-7514
P: 919.515-2444, F: 919-515-7721
E: sps@ncsu.edu

From: Jennifer Ofstein, IRB Coordinator
          North Carolina State University
          Institutional Review Board

Date: January 19, 2016

Title: Understanding Performance Information Use by Nonprofit Executives: An Empirical
Analysis

IRB#:   6217

Dear Clare Fitzgerald,

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101. b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review. This approval does not expire, but any changes must be approved by the IRB prior to implementation.

NOTE:
1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.

2. Any changes to the research must be submitted and approved by the IRB prior to implementation.

3. If any unanticipated problems occur, they must be reported to the IRB office within 5   business days.

Please forward a copy of this letter to your faculty sponsor, if applicable.
Thank you.

Sincerely,

Jennifer Ofstein
NC State IRB

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