USE OF PERFORMANCE INFORMATION BY LOCAL GOVERNMENT
ADMINISTRATORS: EVIDENCE FROM FLORIDA

by

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ABSTRACT

This study examines the factors that facilitate and hinder the use of performance information by public administrators in local governments in Florida. Acknowledging the incompleteness of many theoretical and conceptual models in previous performance management studies and the absence of theory on the use of performance information; this study utilizes a grounded theory approach to develop and test a model analyzing the use of performance information. The research focuses on cities and counties, members of the Florida Benchmarking Consortium (FBC), and surveys public administrators whose tasks are related with the collection and/or reporting of performance information. The study examines three research questions: First, to what extent and in what capacity do local government administrators use performance information? Second, what are the predictors of the use of performance information among local government administrators? Finally, to what extent does the design adequacy of a performance measurement system (PMS), institutionalization of performance measurement (IPM), organizational support (OS), individual factors (IF) and external influences (EI) impact the use of performance information among local government administrators?

To collect data on the above questions, an online survey was administrated to public administrators involved in the 2015-2016 FBC data collection cycle. The data were analyzed with structural equation modeling (SEM). The results of the study demonstrate that institutionalization of performance measurement has the strongest statistically significant positive association with the use of performance information followed by the influence of the design adequacy of the performance measurement system. Organizational support, through institutionalization of performance measurement, has an indirect influence on the use of

performance information. Interestingly, in this study individual factors were not found to be

significantly associated with the use of performance information.

This dissertation is dedicated to my parents Snezhana and Milorad Dimitrijevski.

For their endless love, support and encouragement.

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LIST OF ACRONYMS

EI	External Influences
FBC	Florida Benchmarking Consortium
GASB	Government Accounting Standards Board
GPRA	Government Performance and Results Act
ICMA	International City/County Management Association
IF	Individual Factors
OS	Organizational Support
PART	Program Assessment Rating Tool
PIs	Performance indicators
PM	Performance Measurement
PMM	Performance Measurement and Management
PMS	Performance Measurement System
SEM	Structural Equation Modeling

CHAPTER 1: INTRODUCTION

Performance measurement offers opportunities for a better understanding of organizational processes, activities, products and also has the potential for improving overall organizational performance. Therefore, it does not come as a surprise that the issue of performance measurement has been a focus of scholars and practitioners for the past 25 years. A real performance 'revolution' occurred in the period between the1980s and 1990s (Jordan & Hackbart, 1999; Talbot, 2010) when the fiscal stress and perceived legitimacy crisis of government demanded administrators use resources more efficiently and deliver services more effectively (Van Dooren, Bouckaert, & Halligan, 2010). The falling confidence in local governments (The Nelson A. Rockefeller Institute of Government, 1993), perceived corruption in governmental business (de Lancer Julnes, 2008) and taxpayers' dissatisfaction with governments' operations (Poister & Streib, 1999) reinvigorated interest in performance measurement. Consequently, the 21st century has been characterized as a period of governance by performance measurement and management (Moynihan, 2008; Van Dooren, Bouckaert, & Halligan, 2010).

At the federal level, the Government Performance and Results Act (GPRA) of 1993 created a mandate for federal agencies to use performance measurement (Hatry, 2014). Likewise, the federal Office of Management and Budget established the use of the Program Assessment Rating Tool (PART), which requires all federal agencies to set performance goals, measure their performance relative to the targets, and to report such information in their annual reports (Heinrich & Marschke, 2010). Further, the GPRA Modernization Act of 2010 encourages use of performance information for performance management (Hatry, 2014).

In contrast, local governments do not have an obligation to measure their performance (Boyer, & Martin, 2012; Florida Benchmarking Consortium, 2013). However, in the absence of a legal requirement, the Governmental Accounting Standards Board (GASB) recommends that state and local government collect, report, and benchmark performance information for their services as part of the budget process (Florida Benchmarking Consortium, 2013; Hatry, 2014). Moreover, in 2010 the National Performance Management Advisory Commission created a framework for state and local government performance measurement and reporting (Hatry, 2014). Interest in performance measurement and management (PMM) at the state and local level was further stimulated by several organizations actively working in the field such as the International City/County Management Association (ICMA) and the Urban Institute (Ho, 2006).

Although some local governments, such as the City of New York and Charlotte, North Carolina, have been at the forefront of the performance movement since 1970s (Hatry, 2014), today many local governments have not implemented performance measurement systems, and many of those that do collect performance information are not utilizing that information effectively. The process of performance measurement requires "regular collection of outcome and/or output data (preferably both) throughout the year (not only at the end of the year) for at least many of its programs and services" (Hatry, 2014, p.1). Subsequently, after the data is collected and analyzed the performance information is vital for decision-making, budgeting, human resources decisions, reporting, improving accountability, and allowing for transparency.

1.1   Statement of the Problem

Despite the push toward management for results, many local governments have not created performance measurement systems (PMS), and the governments that have developed

PMS do not always use the performance information to improve decision-making (de Lancer Julnes & Holzer, 2001). Acknowledging that performance measurement is "not an 'end' but rather a means for engaging in policy and management" (Heinrich & Marschke, 2010, p.186), the actual use of performance information for improvement of services and decision-making is limited and modest (Ammons & Rivenbark, 2008; Askim, 2007; de Lancer Julnes & Holzer, 2001; Van de Walle & van Dooren, 2010; Yetano, 2013). In addition to the 'ceremonial' adoption of performance measurement (Yetano, 2013), there is little advice on how to connect the performance measures with budgeting and other decisions as well as improving government accountability and transparency (Scheps, 2000).

Although the pressure to focus on performance and results has been documented, and initial efforts to measure performance have been established, performance information continues to be inadequately utilized. The optimistic belief that if performance information is collected it will directly result in its use, rational decision-making and improvement has not been realized (de Lancer Julnes, 2008; Kroll, 2015). Even though many governments have capacities to collect performance information and to act on it, the empirical research suggests that the transfer of that knowledge into action has not yet occurred and performance information has not been extensively used (de Lancer Julnes, 2008). This creates a challenge for governments that were only focused on collecting performance information (Henri, 2006) but neglected how to foster the use of that information (Moynihan & Pandey, 2010). Therefore, more attention needs to be paid to analyzing and acting on performance information (Zients, 2009).

The interest in use of performance information is well warranted. The use of performance information carries a number of advantages and benefits (Ammons & Rivenbark, 2008) as it has the potential to increase the effectiveness and credibility of public actions, foster management for

results, and to lead to improvements in service delivery (Moynihan, 2008; Hatry, 2014; Ammons & Rivenbark, 2008; Eliuz, Kapucu, Ustun, & Demirhan, 2017). In addition, the increased prevalence of networked governance requires public administrators to use more sophisticated skills and to focus on results (Osborne & Gaebler, 1992; Salamon, 2002). Moreover, when competing for limited resources, it is vital for departments as well as organizations to be capable of demonstrating their performance adequately (Martin, 1998).

As the active use of performance information carries several advantages, acknowledging that use of performance information is "the most pressing challenge for scholarship on performance management" (Moynihan & Pandey, 2010, p. 849), and the limited understanding of the factors that facilitate or hinder the use of performance information (Moynihan & Pandey, 2010) among local government administrators; this study aims to examine those factors and their relative importance.

1.2 Purpose of the Study

This study examines the determinants of the use of performance information, in particular the factors that foster or inhibit the use of performance information among local government administrators. The main purpose of the research is to contribute towards the understanding of the extent of use of performance information among local government administrators and the relative importance of each of the following factors: design adequacy of PMS, institutionalization of PM, organizational support, individual factors and external influences. Second, the study distills lessons on the use of performance information for local government administrators and provides recommendations for more effective use of performance

information. Lastly, the research adds conceptual clarity to some of the key concepts used in the study.

1.3   Scope of the Study

This study focuses on city and county governments that are member of the Florida Benchmarking Consortium and specifically examines the perspectives of local government administrators. The focus on the use of performance information by local government administrators is well justified as previous research examined the level of importance and variations in use of performance information among politicians (Askim, 2007, 2008) or managers (Abdel-Maksoud, Elbanna, Mahama, & Pollanen, 2015; Kroll, 2015) but neglected local administrators' perspectives. In contrast, focusing on local government administrators is necessary to examine as specialists use performance information more often than generalist leaders such as city managers and deputy city managers (Moynihan & Pandey, 2010). Moreover, Wang (2000) found that the responsibility for collecting performance information lays within individual departments (71.6%) and therefore, it is needed to examine how public administrators who are closest to the performance information use it.

This study specifically examines the local administrators from cities and counties in Florida that are members of the Florida Benchmarking Consortium (FBC). The rationale for focusing on FBC member governments, in contrast to all local governments in Florida, is due to the following reasons. Non-FBC local governments are more likely to not have developed performance measurement systems and therefore are unable to offer insights into barriers to the use of performance information. In contrast, FBC members are more likely have experience with performance measurement systems, have an interest in managing their performance and offer

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valuable experience related to the use of the generated performance information. In addition, the Florida Benchmarking Consortium is the largest intra-state benchmarking group collecting performance information on most service areas and as such, its practices and knowledge on the issue should offer valuable insight into the use of performance information.

1.4   Research Questions

The study examines the following research questions:

1. To what extent and in what capacity do local government administrators use performance information?

2. What are the predictors of the use for performance information among local government administrators? What factors facilitate and hinder the use of performance information?

3. Whether and to what extent does the design adequacy of performance measurement system (PMS), institutionalization of performance measurement (PM), organizational support, individual factors and external influences impact the use of performance information among local government administrators?

1.5   Theoretical Perspectives

There is not a developed, consistent theory on the use of performance information in government. Moynihan (2008) provides a succinct summary of the current state of theoretical research:

We have poor theories of performance information use, largely informed by a combination of common sense, some deeply felt assumptions about how government

should operate, and a handful of success stories. The operating theory of performance management reform appears to hold it is an unambiguous benefit to governance, it should be adopted, and it will foster smarter decisions that lead to better governance. The current theory of performance information use might be characterized as 'if you build it, they will come'. It assumes that availability and quality of performance data is not just a necessary condition for use but also a sufficient one. (p. 5).

Recognizing the absence of theoretical perspectives that may provide adequate guidelines in the formulation of this research, this study uses a grounded theory approach to identify the most relevant and important factors that potentially have an effect on the use of performance information among local government administrators. The use of the grounded theory approach is suitable for this research for two reasons: First, there is not an overarching theory on the use of performance information, and second, some of the theoretical and conceptual models used in the field provide only partial examination of few of the relevant factors or aspects. As the aim of this study is to provide a holistic examination, the grounded theory approach provides opportunities to do so effectively without sacrificing important and relevant aspects.

1.6   Significance of the Study

Provided that the use of performance information is one of the most pressing challenges in the field of public management and an indispensable tool for public sector reform (Bouckaert & Peters, 2002; Moynihan & Pandey, 2010), this research aims to discover the factors that facilitate and hinder the use of performance information among local government administrators while challenging an underlying assumption that the existence of performance information is synonymous with its use (Abdel-Maksoud, Elbanna, Mahama, & Pollanen, 2015; Van de Walle

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& Van Dooren, 2010). Most of the studies dealing with performance measurement issues have been largely descriptive and prescriptive with a limited empirical analysis (Yang & Hsleh 2007). This research is timely and needed since the available empirical research highlights the limited use of performance information, the reliance on anecdotal evidence, and an overall low understanding of how and why performance information is used (Ammons & Rivenbark, 2008; Choong, 2013; de Lancer Julnes & Holzer, 2001; Moynihan, 2008).

This research builds on earlier studies on the uses of performance information and makes several contributions. First, the study focuses on local government, but takes the perspective of county and municipal administrators who have been largely neglected in the existing literature. Second, although earlier studies have examined the uses of performance information in public decision-making (Abdel-Maksoud, Elbanna, Mahama & Pollanen, 2015), they did not explore the broader use of performance information for other purposes such as accountability, promotion, strategic decision-making, resources allocation, and human resources. Third, this study provides additional holistic insight into the promotional and hindrance factors on performance information among public administrators, and creates and tests an elaborated model of predictors of the use of performance information at the local level. Fourth, the theoretical insights from a grounded theory approach allow for an all-inclusive examination of the issue and does not pose limitations on a particular determinant or aspect. Fifth, the timing of the study is opportune as the progress in information technology and decreasing hardware and software costs create new opportunities for local governments in performance measurement and management (Hatry, 2014). Moreover, there is greater availability of performance data (Moynihan & Pandey, 2010) and this study explores avenues that allow for their more effective use.

1.7   Context of the Study: The Florida Benchmarking Consortium

In order to provide a better understanding of the research context, information regarding the FBC is warranted. The FBC was founded in 2004 as a "loosely coupled voluntary network" with the primary goal to "develop, collect, and report commonly agreed upon performance data for selected local government services" (Boyer & Martin, 2012, p. 125). The FBC membership currently consists of 19 counties, 29 cities, and three special authorities (FBC, n.d) in the state of Florida and is the largest intrastate performance measurement consortium (Boyer & Martin, 2012). Even though FBC member governments come from all parts of the state of Florida, most of its members are from Central Florida and South Florida region. Notwithstanding the diverse geographical representation, most of FBC members come from urban areas. In terms of the population size of its membership, the FBC member government are varied. Some of its members are metropolitan cities such as Orlando and Tallahassee, while other are small cities such as Dania Beach, Tavares, and Mount Dora each having population approximately or less than 20, 000.

Initially the FBC collected data on six service areas. By 2012 the number expanded to 18 service areas (Boyer & Martin, 2012) and in 2016 to 19 service areas. Currently, the FBC collects more than 700 performance measures in 19 service areas. In particular, the FBC collects performance data for the following service areas: Animal Services (AS), Building Development and Review (BD), Code Enforcement (CE), Civic Engagement (CV), Environmental Management (EM), Fire Rescue (FR), Fleet Management (EM), Human Resources (HR), Information Technology (IT), Parks and Recreation (PR), Police (PO), Purchasing (PU), Risk Management (RM), Road Repair (RR), Solid Waste - Collection (SC), Solid Waste - Disposal (SW), Stormwater and Drainage Maintenance (SD), Traffic Engineering (TE) and Water and

Wastewater (WW) (FBC, n.d). More importantly, each member government may decide the number of service areas in which it would participate and submit performance information. An added benefit of the FBC membership is that local governments use the same performance measures, allowing them to benchmark against each other (Boyer & Martin, 2012).

Bearing in mind that one of the challenges that FBC faces is low or no use of performance information by member local governments (Boyer & Martin, 2012), this study provides timely and much needed analysis on the use of performance information among these local governments.

1.8   Organization of the Chapters

This chapter has identified the need for research regarding the use of performance information by public administrators, stipulated the research questions, and pointed out the contributions of the study. Chapter 2 provides the literature review for the study and includes a discussion and review of all technical and contextual factors that may have an impact on the use of performance information within the context of the research questions. This chapter also discusses various theories, elaborates on the grounded theory approach and presents the conceptual map for the study.   Chapter 3 details the research methodology and presents the research design, study variables, data collection, and sampling method, as well as the statistical analysis performed. Chapter 4 presents the analysis and findings of the study while Chapter 5 discusses the academic and managerial implications.

CHAPTER 2: LITERATURE REVIEW

This chapter reviews the available research dealing with the use of performance information and the predictors associated with use of that information. This review follows the recommendation by Light & Pillemer (1984) and Ridley (2008) on conducting a literature review, and focuses on studies that examine the use of performance information for various levels of government, and the factors that determine such use. The purpose of this section is to provide a comprehensive understanding of the subject and therefore presents key terminology while exploring relationships among main variables. Bearing in mind that there are few performance information studies focused on local government administrators, this study predominantly reviews research focused on the use of performance information by politicians, managers, and executives as well as studies conducted at the state level, federal level, or private sector. Most of the studies included in this literature review are academic in nature, but some practitioners' literature is included. The inclusion of practitioners' viewpoints in this review allows for all-inclusive and detailed review and ensures that no key variables are omitted.

The chapter is organized in the following manner. The first section of the chapter introduces key concepts employed in this study while the second section explains the use of performance information. The subsequent sections review the predictors for the use of performance information, discuss the theoretical foundations and develop a conceptual framework.

2.1 Key Concepts

Before engaging in a detailed examination of the use of performance information, it is important to define the key terms used in the study. Thus, the concepts such as performance, performance measurement, and use of performance information are discussed.

Performance is deliberate action or intentional behavior that can be defined within the context of two dimensions: quality of actions and quality of outcomes (Van Dooren, Bouckaert, & Halligan, 2010). These two dimensions create a total of four perspectives of performance, which include: performance as production, performance as competence, performance as good results, and performance as sustainable results (Van Dooren, Bouckaert, & Halligan, 2010).

The concept of *performance as production* does not imply quality of achievements nor quality of actions while *performance as competence* implies quality of actions but does not imply quality of achievements. The third perspective *performance as good results* implies quality of achievements but does not imply quality of actions, and the fourth perspective *performance as sustainable results* implies quality of achievements and quality of actions (Van Dooren, Bouckaert, & Halligan, 2010). Bearing in mind that local governments are not only concerned about the end-products, but also about the processes that lead to those end-products, this study utilizes the fourth perspective of performance where performance is concerned with achievements as well as the actions used for delivery of those achievements.

Performance measurement is the process by which crucial organizational processes, outputs, and outcomes are measured (Cohen & Eimicke, 1998). It is important to note that those measures are result of a set of deliberate activities that quantify the performance (Van Dooren, Bouckaert, & Halligan, 2010). Performance measurement needs to be distinguished from evaluation (Van Dooren, Bouckaert, & Halligan, 2010). While performance measurement is

ongoing, addresses general issues and uses routinized performance measures, an evaluation is

episodic, issue specific, and uses customized measures (Van Dooren, Bouckaert, & Halligan,

2010).

Use of performance information versus *performance management*. Neither the term use

of performance information nor performance management have been consistently applied across

studies (Nielsen, 2013). Use of performance information is not a catch-all term, but rather a

multi-dimensional concept (de Lancer Julnes, 2008) and may be used for budgetary purposes as

well as the evaluation of individual and team performance (Nielsen, 2013). As used in this study,

the concept of *use of performance information* includes the use of performance information to

improve services, increase accountability, and influence management practices and budgeting

processes. On the other hand, the application of performance management is a narrower concept

where performance information is used to influence decision-making (Moynihan, 2008), policy-

making, and budget decisions (Bourdeaux & Chikoto, 2008). Therefore, the term *use of*

performance information is a broader concept that includes use of performance information for

decision-making, but also for reporting purposes and accountability. Hence, in this study the

term *use of performance information* is employed.

2.2   Use of Performance Information

In dealing with performance, governments decide a) what performance information

would be collected and the processes used to obtain that information; b) how to analyze and

report that information; and c) how to use that information to improve services (Hatry, 2014,

p.7). While the intended use of performance information is important, performance management

needs to be tailored within an adequate design of the performance measures and analysis of

performance information (de Lancer Julnes, 2008). This study addresses all of these components, albeit this section deals specifically with the use of performance information.

The overarching goal of the performance measurement is to foster improvement but it also has a number of other purposes or motivations such as "to evaluate, control, budget, motivate, promote, celebrate and learn" (Ammons & Rivenbark, 2008, p.305; de Lancer Julnes, 2008). Therefore, if properly developed and administered, performance measurement offers a valuable tool for administrators (Ammons, 2001). The performance measures may be used for designing policies, accountability purposes (to both subordinates and superiors), planning, budgeting, allocating competences, operational improvement (early detection of deficiencies), program evaluation (effectiveness of programs), reallocation of resources, directing operations/contract monitoring, as well as assessment of individual behavior and reporting (Ammons, 2001; Van Dooren, Bouckaert, & Halligan, 2010). In addition, performance measurement systems can help managers to manage for results (Hatry, 2014, p.82), improve the effectiveness (Van Dooren, Bouckaert, & Halligan, 2010), and increase the "credibility of the public actions" (Moynihan, 2008, p.4).

There is not a uniformly accepted definition for use of performance information nor what it entails. However, many scholars provide definitions on what a use of performance information definition might include (Hammerschmid, Van de Walle, & Stimac, 2013; Kroll, 2015; Van Dooren, Bouckaert & Halligan, 2010). For instance, Van Dooren, Bouckaert, & Halligan (2010) identified three areas where performance information is used: i) to learn, ii) to steer and control, and iii) to give account. Within that framework, the use of performance information can have an internal and external focus and be used for inducing organizational changes, controlling the present, and ensuring survival (Van Dooren, Bouckaert, & Halligan, 2010).

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Table 1: Purpose of the Performance Information

	To learn	To steer and control	To give account
Key question	How to improve policy or management?	How to steer and control activities?	How to communicate performance?
Focus	Internal	Internal	External
Orientation	Change/future	Control/present	Survival/past
Exemplary instruments	Strategic planning, benchmarking, risk analysis, business process reengineering	Monitors and management scorecards, performance pay, performance budgeting	League tables, citizen charters and annual reporting, performance contracts

Adapted from Van Dooren, Bouckaert, & Halligan, 2010, p.31.

Similar to Van Dooren, Bouckaert, and Halligan, (2010), Hammerschmid, Van de Walle, and Stimac, (2013) distinguished between internal and external use of performance information. The internal use of performance information includes the assessment of target achievements, monitoring of subordinates, problem identification, fostering of learning and improvement, and satisfying the requirements of supervisors. External use, on the other hand, includes communication of organizational activities to citizens, engaging with stakeholders, and managing organizational image (Hammerschmid, Van de Walle, & Stimac, 2013, p. 265).

In contrast to Hammerschmid, Van de Walle, & Stimac (2013), Kroll (2015) took a slightly different approach and identified four dimensions for the use of performance information: purposeful, passive, political, and perverse. Within this framework, the purposeful use of information aims to use performance information to improve services through learning, controlling, evaluating, budgeting, motivating, celebrating, and improving. Passive use of performance information gives account to stakeholders without drawing conclusions (Kroll, 2015). Political use promotes interest in budget or political negotiations, while perverse or dysfunctional use includes behaviors such as cheating and cherry-picking (Kroll, 2015). This

study focuses on the first three uses of performance—purposeful, passive, and political—and is not concerned with the perverse use of performance information where performance users engage in cheating behaviors. This does not mean that those behaviors are not important, but their inclusion is beyond the scope of this study.

In addition to distinguishing between internal and external uses, as well as purposeful, passive, and political uses of performance information, a differentiation may be made between procedural and product performance (Van Dooren, De Caluwe, & Lonti, 2012). With the recent interest in open government focusing on accessibility, responsiveness, and inclusiveness of governmental activities (Van Dooren, De Caluwe, & Lonti, 2012), the use of performance information for these purposes is very relevant.

This study uses the concept of use of performance information to include uses of performance information for learning, steering and control, and giving account with both an internal and external focus. In that sense both product and procedural uses of performance information are included and consist of the purposeful, passive, and political dimensions of uses of performance information.

2.3 Predictors of Use of Performance Information

The prescriptive research revolving around the use of performance information has been largely focused on the technical aspects of performance measurement and its institutionalization. However, studies have indicated that technical factors are insufficient to foster use of performance information and contextual information, such as organizational support, individual factors, and external influence, are important for the use of performance information as well. Notwithstanding the importance of these factors regarding the use of performance information,

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their classification is a difficult task. It is important to note that most of the available studies

regarding the use of performance information do not use the comprehensive classification

framework that is employed in this study, which includes both technical and contextual factors.

Rather, most of the available literature examines a nominal array of indicators and their impact

on the use of performance information. As this study uses Structural Equation Modeling (SEM)

(elaborated in Chapter 3), the research is able to take a more structured analytical approach

through a comprehensive and simultaneous examination of possible latent variable associations.

Before engaging into a detailed examination of the relevant determinants deemed

important, or potentially important, a recent use of performance information systematic review

must be addressed. In it, Kroll (2015) classified several determinants as important, promising, or

as insignificant or inclusive variables. The review found that the most important factors in the

use of performance information are measurement system maturity and stakeholder involvement

(Kroll, 2015). In his study, mature performance measurement systems are those that "provide a

good range of different data, align the reporting to demands of the addressees, link information

to goals and strategic plans, and offer benchmarks" (Kroll, 2015, p. 471). In addition, leadership

support and support capacity, which include resources, capabilities, and technologies, facilitate

the use of performance information (Kroll, 2015). Furthermore, public organizations that have

innovative or developmental culture and strong goal orientation tend to use performance

information more intensely (Kroll, 2015).

Other promising factors identified by Kroll (2015) are learning forums/routines, attitudes

towards performance measures, prosocial motivation, networking behavior, general political

support, and fragmented environment. Lastly, insignificant or inconclusive variables were

organizational size, financial distress, political competition, familiarity with performance

measures, job experience, hieratical position, and educational level (Kroll, 2015). Importantly, even though Kroll suggests these factors are insignificant or inconclusive, further examination is warranted within a multidimensional framework. That being said, the study conducted by Kroll (2015) provides a concise overview of the complexity of the factors associated with the use of performance information. To avoid creation of an all-in list of indicators and to provide a clear organization of the relevant determinants, the following literature review is organized around each of the technical and contextual factors that may be associated with the use of performance information.

2.4   Technical Factors

According to de Lancer Julnes (2008), use of performance measurement has two stages: first, the development of a performance measurement system, and second, implementation (use of the information). Previous efforts to examine the use of performance information assumed the existence of performance information is followed by the use of that information and that the use of performance information is mainly dependent on the structural and technical aspects of performance measurement (Taylor, 2011). The literature suggests that the technical aspects of the performance measurement system (its adequacy) and its institutionalization are important determinants on the use of performance information. Therefore, the next section examines research on the characteristics of performance measurement systems, their implementation, and the respective influence on the use of performance information.

2.4.1   Design Adequacy of Performance Measurement System

A performance measurement system (PMS) is a tool that identifies strengths and weaknesses and conveys information about the effectiveness or failure of a program (Ammons, 1997). However, the PMS should be carefully designed. Some common limitations of existing PM systems include: a limited collection of outcome information; the use of out-of-date (outdated) data; historical and static performance measurement systems; the lack of an integrated management information system (MIS) infrastructure; the examination of aggregate data without further examination of demographic and service characteristics; unclear reporting; performing limited analysis on the available performance data; a lack of understanding of performance measurement; and disregarding qualitative information (Abdel-Maksoud, Elbanna, Mahama & Pollanen, 2015; Hatry, 2014; Nudurupati, Bititci, Kumar & Chan, 2011).

Studying U.S. cities with populations greater than 25,000, Poister and Streib (1999) found that less than 40% use performance information in the decision-making process. Some of the challenges, as identified by the respondents, were measurement difficulties in the quality of the program and services, an inability to keep the measures current, troubles distributing the data in a timely manner, a lack of skills for data analysis, a lack of support by the city council, and even ambiguous and confusing measures (Poister & Streib, 1999).

In a later study of municipal officials, Poister and Streib (2005) found that a linkage between performance measures and the implementation of projects from the strategic plan only occurred for 56% of those surveyed. Even though 49% of the municipalities track their performance to determine progress over time, only 35% of the municipalities report performance measures (associated with the strategic plan) to the public and 35% benchmark their performance against other jurisdictions (Poister & Streib, 2005).

There are various strategic choices for the implementation of performance measurement systems (Jääskeläinen & Laihonen, 2014) and the quality of performance information influences the use of the performance information (Van Dooren, Bouckaert, & Halligan, 2010). Bouckaert (1993) argues that performance measures should not only be valid but also legitimate and functional. He concludes that if measures are valid, legitimate, and functional, the use of performance information can be an effective tool capable of improving performance (Bouckaert, 1993). Streib and Poister (1999) have also used the test of validity, legitimacy, and functionality for performance measures. Similarly, Taylor (2006) expands the test to include validity, legitimacy, credibility, public accessibility, and functionality for performance measure studies in Australia and Hong Kong. Ammons (2001) further expands on the criteria, stipulating that measures should be valid, reliable, understandable, timely, resistant to undesired behavior, comprehensive, non-redundant, sensitive to data collection costs, and focused on controllable facets of performance. A comprehensive test of the performance measurement system has been used by Astrini (2014) who used Neely et al.'s (2012) 10 test for performance measurement, which included the criteria of truth (do we measure what we set to measure), focus, relevance, consistency, access, clarity, so-what, timeliness, costs, and gaming.

Although scholars have use various tests to evaluate the performance measurement systems, there is an agreement that they should not collect only input and output measures. Ammons (1997, 2001) recommends that advanced performance measures such as measures of efficiency, effectiveness, and productivity reveal more about the municipalities and therefore, these more advanced measures have to be collected.

A 2000 study conducted by GASB found that state and local governments continue to increase the use of performance measures, but are still using input, activity, and output

(workload) measures more frequently than outcome measures (Melkers, Willoughby, James, Fountain & Campbell, 2002). This is in line with the findings of Abdel-Maksoud, Elbanna, Mahama, and Pollanen (2015), who found that the use of non-financial performance measures with the use of operational efficiency measures are positively associated with strategy implementation and strategy assessment decisions.

In addition to producing effectiveness and efficiency measures, Boyle (2000) argues that performance measurement systems should have balanced and limited vital measures containing information that is timely produced at reasonable cost with accessibility and analysis being readily available. Boyle (2000) further argues that in order for active use of the performance indicators, performance measures should be explicitly linked to targets. In addition, staff should be involved in the creation of the performance measurement infrastructure with a systematic distribution of information to mangers, frontline staff and clients ensured (Boyle, 2000). Ho (2006) supports the same claim and argues that major stakeholders should be included in the process of developing performance measures.

Lastly, the selection of an information system (technologies) is crucial in the use of performance information. An information system is directly related with the accuracy and validity of data and information (Abdel-Maksoud, Elbanna, Mahama, & Pollanen, 2015). In this line, Wang (2000) has found that management information systems increase the use of performance measurement in budgeting.

While the above aspects of the performance measures are important, it is vital that performance measures are customized and not all governments should use the exact same measures. One should not forget that "governments need to get the right data on the right things" (Hatry, 2014, p.8). The performance measurement systems often collect data on efficiency,

quality, and effectiveness, but there is not an established hierarchy in the importance of various measures (Martin, 1998). Rather, it is assumed that various stakeholders may have a preference of one type of measure over another (Martin, 1998). In addition, the sheer existence of performance indicators in annual reports does not directly lead to their use by the authorities (Taylor, 2007). In countries such as Taiwan, Hong Kong, and Singapore, there is a perception that the performance indicators do not meet the performance needs (Taylor, 2007). Therefore, in designing a performance measurement system, the specific goals should be known first.

For an example, the North Carolina Local Government Performance Project examined ways to improve services, assess their costs, quality, and alternative levels of services (Few & Vogt, 1997.) For these purposes, three broad performance measures have been used: "1) measures of service need and quantity, 2) measures of efficiency, and 3) measures of effectiveness" (Few & Vogt, 1997, np). The use of these types of measures allowed the project team to conduct comparisons across jurisdictions and over time (Few & Vogt, 1997). Nevertheless, a one size fits all may not be the best approach to analyze organizational performance (Stiefel, Rubenstein, & Schwartz, 1999). Taking the above and applying it to the use of performance information among the FBC governments, one could expect that not all governments will find all the FBC measures useful. In particular, some performance measures may be more useful for some governments than to others.

Another important decision in the process of creation of performance measurement systems and analysis of performance information is the issue of performance evaluation. Governments have a choice of three types of benchmarking: corporate-style benchmarking, targets as benchmarks, and comparisons of performance statistics (Ammons, 1997). Each of these is better suited for specific purposes. As an example, the corporate-style benchmarking is

suitable for reengineering, a process where a government analyzes a perceived outstanding government in detail and adapts its practices (Ammons, 1997). The use of targets as benchmarks focuses on results that have yet to be achieved, while comparisons of performance statistics is the identification of government data for a specific performance and comparison against superior performers. Therefore, it is crucial for the government to know the objectives it aims to achieve and to adopt a suitable approach.

Today performance measurement has become more extensive and intensive (Pollitt, 2007), but this has not been associated with the greater use of performance data. As the public sector deals with complex tasks and is influenced by political and environmental forces (Heinrich & Marschke, 2010), the creation of an accurate performance measurement and management system is challenging. Although a number of studies prescribe performance measures and recommend particular measurement systems suitable for some situations (Choong, 2013), there is lack of consistency. Therefore, the performance measurement system needs to be adapted to the context (Edwards & Thomas, 2005), and its institutionalization ensured. The next section examines the preeminent literature on the institutionalization of performance measurement.

2.4.2 Institutionalization of Performance Measurement

Performance measurement could be seen as the supply of performance information while the use of performance information as the demand (Van Dooren, Bouckaert, & Halligan, 2010). As the supply and demand of information do not automatically adjust with each other, there should be a link between the two with the incorporation of performance data (Van Dooren, Bouckaert, & Halligan, 2010). This link is provided through purposeful inclusion of performance

information in organizational documents and processes with the intention of the usage of that performance information (Van Dooren, Bouckaert, & Halligan, 2010). Institutionalization allows for the circumvention of the 'squeakiest wheel gets the grease' approach where departments that are the best positioned to request resources receive consistently greater attention (Edwards & Thomas, 2005). Through institutionalization of performance measurement, government may prevent this "misallocation of resources and management attention" within an empirical rationale (Edwards & Thomas, 2005, p.372).

The institutionalization of information affects the dynamics of performance information (Van de Walle & van Dooren, 2010). There are various mechanisms through which the use of performance information may be shared and analyzed (Van de Walle & van Dooren, 2010). For example, de Haven-Smith and Jenne II (2006) argue for management by inquiry. This technique is composed of regular formal meetings among top and middle management and line staff where performance of individual units is discussed (deHaven-Smith & Jenne II, 2006). The purpose of these meetings is to stimulate discussion and to adjust further action (deHaven-Smith & Jenne II, 2006). Similar to the management by inquiry, in the *Atlanta Dashboard* the Mayor's cabinet implements weekly meetings where performance reports are reviewed (Edwards & Thomas, 2005, p.373). Work groups have also been used as a means to foster organizational learning (Moynihan & Landuyt, 2009). Moynihan and Landuyt (2009) examined the impact of learning forums, which are routine activities where employees review and discuss information and its impact for future actions, and concluded that they have the greatest influence on the use of performance information. Askim, Johnsen, and Christopherson (2008) stipulate that when leaders participate in the learning forums, these forums have an even greater influence on the decision-making.

In order to ensure the use of performance information, it should not only be reported, but also studied, discussed, and taken into consideration in influencing corrective actions (Scheps, 2000). In Dallas County, Texas, comparisons with targets of performance measures is a daily routine (Scheps, 2000) and 'progressive pressure' is applied in order to force managers to focus on outcomes. The progressive pressure is highly institutionalized and consists of several components: a) visible and frequent reviews where all reports are available to everyone; b) the Office of Budget and Evaluation grade each quarterly performance report against its targets and a narrative statement is created for the department; c) the Office of Budget and Evaluation drafts discussions list with troublesome trends/targets; d) a public meeting, or "Performance Forum" is held where selected items are placed on "watch and active lists," with results and questionable programs discussed; and e) resources are redirected where programs are modified and abandoned (Scheps, 2000).

In addition to holding regular meetings - whether named management by inquiry, work groups or learning forums - as well as applying 'progressive pressure', it is suggested to require regular evaluations of performance information and its inclusion in the strategic plan. The cycle of continuous performance improvement consists of the regular evaluation of outputs/outcomes (Wang, 2010). Analysis is a crucial component for the effective use of performance information. Moreover, performance measures can be compared with a standard, target, comparable jurisdiction, previous performance, or benchmark (Ammons, 2001; Wang, 2010).

As discussed previously, benchmarking is the process through which an organizational outcome is compared with some reference point, usually the performance of another organization (Cohen & Eimicke, 1998). In the process of benchmarking, governments decide what to benchmark, identify reference points, gather and analyze data, create an action plan or make

recommendations, and recalibrate the benchmarks (Cohen & Eimicke, 1998). However, it is suggested that governments avoid an excessive array of indicators and try to make the task of benchmarking not overly time-consuming (Cohen & Eimicke, 1998). During the process of measurement, governments may be cautious to not place "undue importance on what are, in reality, very small differences" (Cohen & Eimicke, 1998, p.77).

Ho (2006) focused on the value of performance measurement examined through the perspective of Midwestern U.S. mayors and concluded that the impact of performance measurement on decision-making is dependent on the integration of the performance measurement in the strategic planning and goal setting as well as the internal communication between the staff and city council. Moreover, Grizzle and Pettijohn (2002) examined Florida's performance-based program budget and concluded that clear communication, among other things, would increase the prospect of the reform's success, i.e., the use of performance information (Grizzle & Pettijohn, 2002).

The literature review has demonstrated that institutionalization of performance measurement may take many forms such as management by inquiry, weekly meetings, learning forums, progressive pressure, information analysis, and the inclusion of performance information into strategic plans and communication. Regardless of the form of institutionalization, the most important component is discussion and analysis of performance information. Notwithstanding the importance of the institutionalization of performance measurement, there are other contextual factors that may influence the use of performance information and they are discussed in the next section.

Performance measurement research largely builds on the assumption of rational behavior

on the part of humans and organizations (Vakkuri & Meklin, 2006). There is a widespread

perception that information is neutral and an assumption that the "mere existence of information

will lead to its use by decision makers" (Van de Walle & van Dooren, 2010, p.3). However, this

neglects the organizational context, power structure, processes, and habits within the

organization as well as the individual characteristics of the public officials (Van de Walle & van

Dooren, 2010). As discussed earlier, the presence of performance information does not mean that

it is used in decision-making (Askim, 2007), nor that the organization is managing its

performance (Van de Walle & van Dooren, 2010) as measures may be used selectively or not

used at all (de Lancer Julnes & Holzer, 2001).

The non-use of performance information has often been perceived as easily corrected

through the advancement of measurement techniques (Vakkuri & Meklin, 2006), improvements

of datasets, and data processing skills (Van de Walle & van Dooren, 2010). However, this

perspective neglects the inert ambiguity of decision-making and the dynamic interaction between

performance measurement systems and the use of performances information (Vakkuri & Meklin,

2006). Altering the way information is used requires deeper changes, which may alter the

organization itself (Van de Walle & van Dooren, 2010).

The importance of organizational factors that lead to the greater use of performance

information have not been adequately explored (Abdel-Maksoud, Elbanna, Mahama, & Pollanen,

2015). Nevertheless, Vakkuri & Meklin (2006) argue that technology, human actors, and

institutional context interact and create the framework of performance measurement (Vakkuri &

Meklin, 2006). While the use of performance information (in budgeting) requires "changes in

government's operations, personnel, structure, and even cultures" (Wang, 2000), it does not come as a surprise that the use of performance management is more likely to be successful in some conditions than in others (Moynihan, 2008). While studies show that the adoption of performance measurement systems is more influenced by rational/technocratic factors, performance management or the use of performance is more influenced by political/cultural factors (de Lancer Julnes & Holzer, 2001). Although the presence of more information reduces uncertainty, it also creates different perspectives (Moynihan, 2006). This means that the role of politics and meanings attached to the data is shaped by an individual's "values, training, motivation, partisan position, and cognitive characteristics" (Moynihan, 2006, p.167) and therefore, they should be examined. The next sections examine the organizational, individual, and external factors that have an impact on the use of performance information.

2.5.1 Organizational Support

Some of the reasons behind failed reforms in public administration are the direct consequence of focusing on structures and the neglect of organizational culture (Andrews & Moynihan, 2002). Sometimes reformers aim to change existing processes with rational processes, but those new rational process are incompatible with the ongoing organizational processes and procedures (Andrews & Moynihan, 2002). Organizational environment or even organizational culture have often been cited as predictors of the use of performance information (Van de Walle & van Dooren, 2010). With regard to these organizational factors, leadership or top management commitment, developmental culture, and flexibility have been identified as positively associated with the use of performance information (Moynihan & Pandey, 2010.)

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Leadership or top management commitment has been cited as an important predictor of the use of performance information (Abdel-Maksoud, Elbanna, Mahama, & Pollanen, 2015; de Lancer Julnes, 2008). A study conducted by Melkers and Willoughby (2005) found that in addition to formal requirements to report performance, leadership commitment toward performance issues helps to secure the benefits of performance measurement. In addition, a more participatory process for performance measurement is positively associated with the long-term effects of performance measurement (Melkers & Willoughby, 2005).

Similar to Melkers and Willoughby (2005), Dull (2009) argues that leadership commitment is crucial for reforms in the public sector. Dull (2009) examined two GAO surveys, one from 1997 and the other from 2000, and examined the influence of leadership commitment on the credibility, use, and usefulness of performance measures in executive branch agencies by mid-and upper-level managers and supervisors. The results of the study found that leadership commitment has a positive association with the use of performance information (Dull, 2009). Along these lines, Ammons and Rivenbark (2008) argue that top management support is important for performance measurement success; in particular, the willingness to engage in comparisons with other jurisdictions or service providers increases the use of performance information (Ammons & Rivenbark, 2008). Leadership commitment has also been identified as important by Sanger (2008) who examined six exemplary cities. In the study, he concluded that organizations with the best performance reporting are the ones whose leaders are mission motivated, communicate the mission to employees, and provide motivation through support and rewards (Sanger, 2008).

Research from abroad also identified managerial commitment as an important factor. A study of Indonesia's local governments has found that managerial commitment is a crucial factor

in the successful implementation of performance measurement systems (Akbar, Pilcher, & Perrin, 2012). A study conducted in Taiwan examining the influence of the political environment, stakeholder participation, organizational support, and training on the effectiveness of management found that organizational support is the most important determinant of the effectiveness of the performance measurement (Yang & Hsleh 2007). This study also found that external stakeholder involvement has a positive impact on the effectiveness of the performance measurement (Yang & Hsleh 2007). Similarly, in a study conducted in 2000, Wang found that "support from all governmental stakeholders is significantly associated with the use of performance measurement in budgeting" (p.115). Another study (Wang & Berman, 2001) examined U.S. counties and concluded that top management commitment and external support are more important than simply sufficient resources and adequate skills.

In addition to leadership and managerial commitment, *organizational capacity* is also identified as an important factor influencing the use of performance information. Jordan and Hackbart (1999) surveyed budget directors in state executive budget offices where only 13 states responded that they used some form of performance budgeting and 32 reported they did not (Jordan & Hackbart, 1999). The study argues that in order to advance the use of performance in the budget process there should be organizational capacity and focus (Jordan & Hackbart, 1999). Similar to the state level, studies conducted at the federal level also claim that political and administrative support is important for the success of performance reforms (Jones & McCaffery, 1997).

Organizational and tasks characteristics may also play an important part in the effective use of performance information. Studies on private childcare providers examined organizational characteristics such as the number of staff, the existence of a program evaluation unit, the

existence of quality assurance/quality improvement unit, use of information technology, membership in a larger network, and type of organization (Collins-Camargo, Chuang, McBeath, & Bunger, 2014). The study concluded that existence of a quality assurance/quality improvement unit had an impact on the performance management strategies (Collins-Camargo, Chuang, McBeath, & Bunger, 2014). In addition to organizational characteristics, specific task characteristics are important factors in the use of performance information. Pollitt (2006) studied performance management practices and the use of performance data by top management in Finland, Norway, Sweden, and the United Kingdom. Pollitt (2006) concluded that the interaction among institutional patterns and norms with specific task characteristics influences performance management.

Flexible decision-making is another variable that deserves consideration. Recent reforms have encouraged lower-level employees to make decisions, understand the issues, and make improvements (Moynihan & Landuyt, 2009). Therefore, flexible decision-making that grants powers to lower-level employees to make decisions may positively impact the use of performance information. Moynihan & Pandey (2010) also found that developmental culture and flexibility are positively associated with the use of performance information. Similarly, research from the private sector arrives at the same conclusion. Henri (2006) examined private-sector firms in Canada, and found that organizations with greater flexibility or control differentiate themselves by their use of performance measurement systems (Henri, 2006). He claims that control and flexibility are important features of an organizational culture with the former referring to stability, formality, and conformity, and the latter including spontaneity, change, and adaptability (Henri, 2006, p. 77). Additionally, firms with a flexible culture make greater use of performance measures (Henri, 2006).

Further, a study focusing on effectiveness found a positive relationship with decentralized decision-making. Moynihan & Pandey (2005) focused on the performance of state government health and human services using the National Administrative Studies Project. The research found that elected officials support has a positive influence on the effectiveness of the use of performance information. In addition, it was found that developmental organizational culture, decentralized decision-making, and goal clarity were positively associated with the effectiveness of the organization (Moynihan & Pandey, 2005). Although not focused directly on the use of performance information but on a performance accountability, Wang (2002) examined performance among city administrators across the U.S. and concluded that decentralized decision-making organizations with frontline managers assuming the responsibility for their performance results in greater performance accountability.

The literature has demonstrated that leadership, managerial commitment, organizational capacity, organization and task characteristics, and flexible decision-making are associated with the use of performance information. The literature expressed that the users of the performance information are also important in the use of performance information. The next section examines individual factors that may influence the use of performance information.

2.5.2   Individual Factors

The use of information is not only dependent on the technical aspects of performance measurement systems, but also on the organization and people who are using this information. Their willingness and capacity to act on information are crucial (Van de Walle & van Dooren, 2010). Even classical studies of organizations in action do not omit the human element (Thompson, 2003). The First Report of the National Commission on State and Local Public

Service stressed that in order to achieve high performing government there should be knowledgeable and motivated employees empowered to innovate toward accomplishing organizational missions (The Nelson A. Rockefeller Institute of Government, 1993). In addition, power positions, interest, and psychological issues are important factors of the dynamics of performance information (Van de Walle & van Dooren, 2010). This section examines the individual factors that may have an influence on the use of performance information.

Public service motivation (PSM) is identified as an important predictor of the use of performance information. Moynihan &Pandey (2010) examined the impact on individual beliefs, job attributes, and organizational factors in a national sample of local governments and the results showed a positive correlation between PSM and the use of performance information (Moynihan & Pandey, 2010).

In addition to PSM, technical knowledge has a positive relationship with the managerial use of performance information and the effectiveness of the performance measurement (Akbar, Pilcher & Perrin, 2012; Yang & Hsleh, 2007). Technical knowledge may be formal, such as through training, while informal methods such as professional group meetings are also utilized (Akbar, Pilcher & Perrin, 2012). Cavalluzzo and Ittner (2004) analyzed 13,000 middle- and upper-level managers from the 24 largest executive branch agencies. The study found that in addition to top management commitment and decision-making authority, training on performance measurement and management is positively associated with greater use of performance information (Cavalluzzo & Ittner, 2004). In addition, lower-level managers' use of performance information is negatively associated with difficulties in the interpretation of the performance metric (Cavalluzzo & Ittner, 2004), which is in line with the argument that skills of the staff positively correlate with the use of performance information (Collins-Camargo, Chuang,

McBeath, & Bunger, 2014). Similar to this, Wang (2000) concluded that there are technical obstacles to conducting performance analysis with analytical competency and a capable staff being strong factors increasing the use of performance information in public budgeting.

Individual attitudes are also important for the use of performance information. Focused on Australian state agencies, Taylor (2011) examined the influence of the performance measurement system, stakeholder support, organizational culture, external environment, and individual perception of the impact of performance measurement on the use of performance indicators for decision-making. The study found that individual attitudes towards the impact of performance measurement has the highest impact on the use of performance information, followed by the quality of the performance information system, organizational culture, and external environment (Taylor, 2011).

The existing research does not provide conclusive evidence as to whether education plays an important factor in a person's use of performance information (Askim, 2008, p.131). While some have found that it is an important factor (Moynihan & Ingraham, 2004), others have not (Askim, 2008). In addition to education, previous experience may have an effect on the use of performance information. For instance, Hammerschmid, Van de Walle, & Stimac (2013) examined determinants of the internal and external use of performance information in public organizations by high-level public sector executives from six European states (Hammerschmid, Van de Walle, & Stimac, 2013). Analyzing data of 3,134 respondents from Estonia, France, Germany, Hungary, Italy, and Norway, the researchers examined the influence of public mangers socio-demographic characteristics such as age, education, previous experiences, leadership, attitudes, skills, and resources. The authors concluded that mangers with experience of more than 10 years in the private sector rely on performance information more frequently (Hammerschmid,

Van de Walle, & Stimac, 2013). However, it needs to be pointed out that while individual factors were significant, when incorporated with organizational factors, the effects disappeared (Hammerschmid, Van de Walle, & Stimac, 2013).

As performance information requires an interpretation, the psychological dynamic of the information is important (Van de Walle & van Dooren, 2010). Some people may have selective perception or a strong belief system and ideology (Van de Walle & van Dooren, 2010) which affects how they interpret information. In addition, if one has information that is in conflict with that person's pervious assumptions and beliefs, it will require an an especially objective effort to effectively interpret the information (Van de Walle & van Dooren, 2010). This is similar to Nutt's (2006) findings that "how things are viewed and understood by stakeholders holds more salience than the accuracy of claims" (p.293). In addition, resistance to performance measurement may be encountered by employees who feel threatened (Ammons, 2001). This resistance may come from both lower and higher-level employees (Streib & Poister, 1999,) and the reasons for their resistance should be understood (Ammons, 2001). Poister and Streib (1999) argue that the use of performance information should be higher when there is buy-in from employees and line managers into the performance system.

Per the literature, employee buy-in into the process, as well as adequate skills, training, and education are suggested as important factors in the use of performance information. However, some external influences may also impact the use of performance information. The next section focuses on those external influences.

2.5.3   External Influences

Some contend that there is not conclusive evidence on the role of external factors, such as pressure from the profession and citizen participation, on the use of performance data. However, Moynihan and Pandey (2010) tested the hypotheses that perceptions of citizens' participation affect the use of performance information and managers under the influence of a professional organization are more likely to use performance information and found both results significant at the 0.1 level (Moynihan & Pandey, 2010). In addition, Wang and Berman (2001) discovered that external support has a positive impact on the deployment of performance measures with Yang and Hsleh (2007) finding that external political support and external stakeholder involvement have a positive impact on the effectiveness of the performance measurement.

In addition to the importance of external support, the fear of public scrutiny may also influence the use of performance information. Taylor (2011) examined the influence of the external environment on the use of performance information in decision-making and found that governments use performance information more often in decision-making when they are concerned that the public and media may use performance information against them.

The role of external support from citizens and stakeholders as well as the fear of public scrutiny are relevant aspects that influence the use of performance information. Although the evidence on their importance may appear somewhat less than conclusive, their significance should be evaluated.

2.6   Theoretical Background

Currently, there is no theory regarding the use of performance information, but there are some assumptions about how governments should work (Moynihan, 2008) and the attribution of abstract logic to the process of performance management (Askim, 2008). Acknowledging that there is an absence of theory on the use of performance information, many scholars turned to the available theoretical frameworks in combination or piecemeal as they deemed appropriate. With regards to this, a number of theories have been used to explore issues close to the use of performance information. Therefore, this section examines several theories identified in the literature and if or how they are applicable in guiding this research.

Use of performance information is a form of organizational behavior and Yetano (2013) used elements of structuration theory to examine the process of institutionalization of the new rules and routines required for performance measurement and management. Through institutionalization of rules and routines, users' actions are structured and shaped (Yetano, 2013). In that light, new processes may replace or mutate previous routines (Yetano, 2013). This theory conveys an acknowledgment of the importance of how processes are institutionalized in the use of performance information, and as such, touches upon one aspect of this research. However, independently the structuration theory is insufficient in guiding this study for two reasons: First, the structuration theory artificially separates dimensions of social systems (Yetano, 2013); and second, it provides in-depth information on 'how to' institutionalize new processes, but does not allow for the comprehensive examination of all relevant factors other than institutionalization of performance measurement on the use of performance information.

Institutional theory has also been used to examine the development of performance indicators and managerial use of indicators (Akbar, Pilcher, & Perrin, 2012; Brignall & Modell,

2000). Even though institutional theory is broad, institutional isomorphism has been used to examine organizational changes along with stakeholders' interest and powers (Akbar, Pilcher, & Perrin, 2012). This theory stipulates that similar organizations would, over time, react similarly and respond to the environment with similar practices (Akbar, Pilcher, & Perrin, 2012). However, in this study the local governments independently chose to become FBC members, and what is more, the study does not aim to follow patterns of conversion, but use of performance information. Therefore, the theory of institutional isomorphism does not provide useful guidelines for this research.

Moynihan (2008) uses theoretical approaches from policymaking and implementation sciences and developed the theory "interactive dialogue model of performance information use" (p.14), which stipulates that performance information is not objective, and people subjectively select data or analysis to convince or reinforce others' opinions. The interactive dialogue model argues that political preferences are more important than the performance information, however, within specific agencies the influence of politics is weaker (Moynihan, 2008). Within agencies discussion of performance leads to attaching a common meaning to said performance (Moynihan, 2008). In this line, learning forums or regular dialogue routines are important whereupon actors examine performance information, evaluate its importance, and decide on further actions (Moynihan, 2008). Within organizations with relatively homogenous groups, routine dialogues increase organizational capacities and specify the goals (Moynihan, 2008). This theory focuses on interactive dialogues but neglects other factors. Therefore, it cannot independently serve the purposes of this research, which aims to provide a holistic examination of the predictors of the use of performance information. However, the theory is beneficial as it clarifies that interactive dialogues are important for the use of performance information.

Similar to the interactive dialogue model, organizational learning theory has been used to explain the use of performance information (Taylor, 2011). From this perspective, the existence of proper structures and organizational learning mechanisms are important with routines of collection and the dissemination of performance information tied to the use of that information (Taylor, 2011).

Organizational learning literature also suggests that the organizational culture for learning is important (Taylor, 2011). Senge (2006) argues that the core disciplines that build learning organizations are personal mastery, mental models, building shared vision, team learning, and systems thinking. Systems thinking, known as the fifth discipline, allows for the integration of other disciplines, fusing them into a "coherent body of theory and practice" (Senge, 2006, p.12).

In addition to systems thinking, the logic model has also been used to untangle the "black box" of government performance (Williams, 2014). While in the 1970s performance was examined through the analysis of inputs to outputs, the past two decades have added intermediary channels such that an input now connects to the output via a 'throughput' (Williams, 2014). The center of the logic model is now the "black box" or throughput, however, it is not always clear what should go in that black box. This study aims to examine exactly that and therefore, this theory does not offer applicable guidance.

An important conceptual advancement is offered by O'Toole and Meier (2015) who have made initial steps towards a theory of context for performance management where they included the political, environmental, and internal contexts. Although named the Theory of Context, the authors use this term more broadly to mean a macro environment (O'Toole & Meier, 2015). The researchers developed more than 20 hypotheses, which have not been tested yet, and as such the relative importance of each variable is largely unknown. However, they provide initial ideas on

the factors that O'Toole and Meier believe to be important. Even though this theory is more focused on "how context affects the management-performance linkage," (O'Toole & Meier, 2015, p. 237) it still provides useful guidance on the factors that influence the use of performance data.

Lastly, the literature also identified rational/technocratic and political/cultural frameworks that have been used. Notwithstanding the importance of rational/technocratic factors, organizations do not operate in a vacuum, making the context, interest groups and influences within the organization important factors to consider (de Lancer Julnes & Holzer, 2001). Therefore, the politics of the organization, internal and external interest groups, unions, risk aversion, and attitudes should be understood (de Lancer Julnes & Holzer, 2001). Although the political/cultural framework offers valid arguments that are considered in this study, the role of politics among local governments may not be as strong as the state or federal levels and as such is not a sufficient fit for this analysis.

Although the theories outlined above inform on individual factors that may influence the use of performance information, they do not provide for a holistic examination of the predictors for the effective use of performance information. Therefore, this study uses a grounded theory approach to develop and test a model of use of performance information. The review of grounded theory and its application is subsequently discussed.

2.7   Grounded Theory

Developed in the 1960s, Glaser and Strauss are considered the fathers of Grounded Theory (Duchscher & Morgan, 2004; Tummers & Karsten, 2012). Even though Glaser and Strauss together established a definitive research strategy, each suggest a separate

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methodological approach (Tummers & Karsten, 2012). One of the main disagreements between Glaser and Strauss is the appropriate timing to use literature (Tummers & Karsten, 2012). While Strauss permits use of existing literature early in the research and advocates for it to serve as an analytical framework, Glaser argues that the literature should be used later in the research process (Tummers & Karsten, 2012). Even though one of the pitfalls of a literature review in the research design is overlooking potential aspects, it allows researchers to discover knowledge gaps, identify the importance of the research question, and focus the research (Tummers & Karsten, 2012). Moreover, many public administration handbooks point to the literature review as a crucial step in the process of the research design as it helps in the creation of the framework of the study (Tummers & Karsten, 2012). Furthermore, going into the research without reviewing the literature and understanding the *state of science* is not recommended (Schreiber, 2001).

While Glaser adheres to the emerging model of theory generation, the Stauss-ian approach allows for the use of the data and theory into a methodological framework with the inclusion of conditions, interactions, and consequences (Tummers & Karsten, 2012). According to Strauss, literature "may be used to stimulate theoretical sensitivity and generate hypothesis" (Heath & Cowley, 2004, p.143). Deduction is permitted and generated hypothesis may be dropped if their importance is not confirmed by the data (Heath & Cowley, 2004). This study follows more the Strauss-ian approach, which allows for "preconceived conceptual description" and directive questioning (Duchscher & Morgan, 2004, p. 606). This approach asserts that "knowledge may be increased by generating new theories rather than analyzing data within existing ones" (Heath & Cowley, 2004, p.142).

The use of grounded theory is useful for this study as it allows for theory building through careful examination of the social world (Hennik, Hutter, & Bailey, 2013). As grounded theory is appropriate for the capturing of complexities, it is useful in management and organizational studies where individual and group behaviors interact (Locke, 2003). In addition, grounded theory is useful for the examination of situated processes such as decision-making, socialization, and change (Locke, 2003, p. 95). Contrary to some beliefs, grounded theory has been used for both quantitative and qualitative research (Duchscher & Morgan, 2004). The Grounded Theory Institute (2014) clearly asserts that:

> Although many call Grounded Theory a qualitative method, it is not. It is a general method. It is the systematic generation of theory from systematic research. It is a set of rigorous research procedures leading to the emergence of conceptual categories. These concepts/categories are related to each other as a theoretical explanation of the action(s) that continually resolves the main concern of the participants in a substantive area. Grounded Theory can be used with either qualitative or quantitative data. (n.p.)

The use of grounded theory is useful for this study as theory is not imposed on the data, but rather theory is derived from the data (Tummers & Karsten, 2012). The use of grounded theory allows for empirical examination of the findings from previous empirical research as well as the conceptual assumptions made. On the basis of the literature review, using a grounded theory approach allows several factors to be identified as important predictors of the use of performance information and are presented in the conceptual framework in the next section.

2.8   Conceptual Framework

Discovering the factors that influence the use of performance information among local government administrators may lead to their greater use and ultimately improve performance. The literature has demonstrated that the design of the performance measurement system, its institutionalization, organizational support, individual factors, and environmental influences all impact the use of performance information (Ammons, 1997, 2001; Cavalluzzo & Ittner, 2004; Kroll, 2015; Melkers & Willoughby, 2005; Moynihan & Landuyt, 2009; Poister & Streib, 1999; Taylor, 2011; The Nelson A. Rockefeller Institute of Government, 1993; van de Walle & van Dooren, 2010; van Dooren, Bouckaert, & Halligan, 2010). Using these factors as predictors for the use of performance information, a conceptual model is developed and presented in Figure 1.
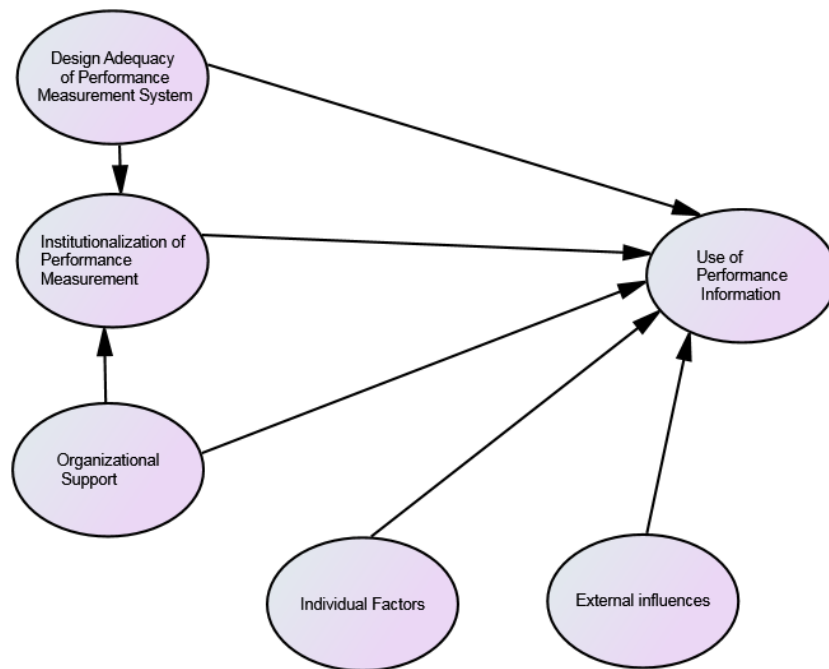
Figure 1: Conceptual Map of the Study

2.8.1   Use of Performance Information

The use of performance information refers to the use of performance information for various purposes and not only for decision-making. In that sense, the use of performance information increases with the increased number of uses. The use of performance information can be for external and internal purposes, and in this study, both are employed. Some of the uses of performance information are learning, controlling, evaluating, budgeting, motivating, improving, reporting and providing accountability to stakeholders (Ammons & Rivenbark, 2008; de Lancer Julnes, 2008; Kroll, 2015; Hammerschmid, van de Walle, & Stimac, 2013; van Dooren, Bouckaert, & Halligan, 2010).

2.8.2   Design Adequacy of Performance Measurement System

Structural factors, such as the design adequacy of the performance measurement system, are important predictors for the use of performance information (Eliuz, Kapucu, Ustun, & Demirhan, 2017). Measurement difficulties are among the factors that challenge the use of performances information (Poister & Streib, 1999). In addition to the collection of input and output measures, efficiency, effectiveness, and productivity measures should be collected (Ammons, 1997, 2001). In addition, the measures should be clear, understandable, relevant, attainable, consistent, comprehensive, and collected in a timely manner (Ammons, 2001; Astrini, 2014; Poister & Streib, 1999; van Dooren, Bouckaert, & Halligan, 2010). The three most-cited dimensions of performance measures are validity, legitimacy, and functionality (Bouckaert, 1993; Streib & Poister, 1999; Taylor, 2006).

Based on the literature review it is hypothesized that:

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H1: Design adequacy of the performance measurement system is positively associated with the use of performance information.

2.8.3   Institutionalization of Performance Measurement

Implementation integrity of the performance measurement system is another important predictor of the effective use of performance information. Intentional incorporation of performance data within organizational routines and documents assist the use of performance data (Ho, 2006; van Dooren, Bouckaert, & Halligan, 2010). The empirical evidence has shown that regular meetings (forums) discussing performance have a positive association with the use of performance information (deHaven-Smith & Jenne II, 2006; Moynihan & Landuyt, 2009; Scheps, 2000). The regular analysis of data and benchmarking is important for the use of performance information (Ammons, 2001; Wang, 2010).

Based on the literature review it is hypothesized that:

H2: Institutionalization of performance measurement is positively associated with the use of performance information.

2.8.4   Organizational Support

Organizational culture is an important predictor of the effective use of performance information (van de Walle & van Dooren, 2010). The empirical research has shown that organizational support such as leadership commitment, developmental culture, and flexibility are positively associated with use of performance information (Ammons & Rivenbark, 2008; de Lancer Julnes 2008; Dull, 2009; Moynihan & Pandey, 2010; Melkers & Willoughby, 2005; Moynihan & Landuyt, 2009; Wang & Berman, 2001; Wang, 2002). In addition, organizational

capacity and organizational characteristics may also have an effect on the use of performance information (Jordan & Hackbart, 1999).

Based on the literature review it is hypothesized that:

H3: Organizational support is positively associated with the use of performance information.

2.8.5   Individual Factors

Individual factors are important predictors of the effective use of performance information. Having performance information is crucial, but having a capacity and willingness to act on that information is important as well (van de Walle & van Dooren, 2010). Knowledgeable, trained, and skillful public administrators, motivated to achieve organizational mission, positively influence the use of performance information (Akbar, Pilcher, & Perrin, 2012; Moynihan & Pandey, 2010; The Nelson A. Rockefeller Institute of Government, 1993; Yang & Hsleh 2007).

Based on the literature review it is hypothesized that:

H4: Individual factors are positively associated with the use of performance information.

2.8.6   External Influences

A number of authors pointed out external influences as an important predictor of the effective use of performance information (Moynihan & Pandey, 2010). In addition, pressure from citizens and media may increase the use of performance information (Taylor, 2011).

Based on the literature review it is hypothesized that:

H5: External influences are positively associated with the use of performance information.

2.9   Summary of the Chapter

This chapter reviewed the available literature on the issue of use of performance information and identified technical factors such as design adequacy of PMS and institutionalization of PM, as well structural factors such as organizational support, individual factors, and external influences impacting the use of performance information. The chapter also reviewed the theories and theoretical frameworks used in previous literature and explained the reasoning behind a grounded theory approach to guide in postulating the framework for the study. Based on the literature review and following the Strauss-ian approach of grounded theory, the conceptual map was presented and five hypotheses were generated. The next chapter elaborates on the methodology used to test the hypothesized relationships among the variables.

CHAPTER 3: METHODOLOGY

This chapter explains the methods used in the research. The chapter specifies the research design, unit of analysis, and study variables. In addition, the chapter stipulates the process of data collection and proposes the measurement models. The section continues with a presentation of the goodness of fit statistic as well as the process of validation for the measurement models and covariance structural model.

3.1   Research Design

This study uses a non-experimental cross-sectional research design with a survey instrument containing questions focusing on the use of performance information, performance measurement systems' design and institutionalization, as well as organizational support, individual factors, and external influences. The survey was administered to public administrators involved in the 2015-2016 FBC data collection cycle. A self-reported survey has been used in previous studies of performance measurement and management (Akbar, Pilcher, & Perrin, 2012; de Lancer Julnes & Holzer, 2001; Ho, 2006) and therefore is considered an appropriate method for data collection. The unit of analysis is a local government administrator. The survey results are analyzed with the use of Structural Equation Modeling (SEM), which allows for the use of latent variables, a simultaneous testing of the measurement models and estimates of significant associations therein. This chapter specifies the data collection process, the study variables and the processes for validation of the measurement models and structural equation model.

3.2   <u>Study Variables</u>

The study uses six latent variables out of which two are endogenous—the use of

performance information and the institutionalization of performance measurement, the latter

being a mediating variable. The latent variables for design adequacy of the performance

measurement system, organizational support, individual factors, and external influences are

exogenous variables. There is one control variable: type of government. All of the study

variables are measured on a 6-point Likert scale and are presented in Table 2.

Table 2: Study Variables

	Attribute	Variable	Measurement Type	Data Type
1	Exogenous	Design Adequacy of Performance Measurement System	Latent	
DA1	Exogenous - indicator	The FBC performance measures for my service area are clear	Measurable	Ordinal
DA2	Exogenous - indicator	The FBC performance measures for my service area are appropriate	Measurable	Ordinal
DA3	Exogenous - indicator	The FBC performance measures for my service area meet my personal performance data needs	Measurable	Ordinal
DA4	Exogenous - indicator	The FBC performance measures for my service area are linked to my departmental targets/goals/priorities	Measurable	Ordinal
DA5	Exogenous - indicator	The FBC performance data for my service area is easy to access	Measurable	Ordinal
DA6	Exogenous - indicator	The FBC performance data for my service area is timely	Measurable	Ordinal
DA7	Exogenous - indicator	The FBC performance measures for my service area require reasonable amount of my time for collecting and reporting performance data	Measurable	Ordinal
2	Endogenous – Mediating (M)	Institutionalization of Performance Measurement	Latent	
I1	Endogenous (M) – Indicator	I attend special meetings within my local government where FBC performance data for my service area are discussed	Measurable	Ordinal
I2	Endogenous (M) – Indicator	I discuss FBC performance data for my service area in my departmental meetings	Measurable	Ordinal
I3	Endogenous (M) – Indicator	I use FBC performance data for my service area in my internal communications	Measurable	Ordinal
I4	Endogenous (M) – Indicator	I conduct analysis of FBC performance data for my service area	Measurable	Ordinal

	Attribute	Variable	Measurement Type	Data Type
I5	Endogenous (M) – Indicator	I use FBC performance data in my planning efforts	Measurable	Ordinal
I6	Endogenous (M) – Indicator	I distribute FBC performance data to colleagues in my department	Measurable	Ordinal
3	Exogenous	Organizational Support	Latent	
OS1	Exogenous - indicator	My department encourages me to use FBC performance data to make decisions related to my job	Measurable	Ordinal
OS2	Exogenous - indicator	My department has somebody that I can turn to that can assist me with any performance related issues/questions that I have	Measurable	Ordinal
OS3	Exogenous - indicator	My department provides me with the resources that I need to measure and analyze FBC performance data	Measurable	Ordinal
OS4	Exogenous - indicator	My department supports flexible decision-making where I am empowered to make decisions on a basis of performance data	Measurable	Ordinal
4	Exogenous	Individual Factors	Latent	
IF1	Exogenous - indicator	I have adequate technical knowledge to use FBC performance data	Measurable	Ordinal
IF2	Exogenous - indicator	I have the necessary skills to interpret FBC performance data	Measurable	Ordinal
IF3	Exogenous - indicator	I have sufficient training on how to use FBC performance data	Measurable	Ordinal
IF4	Exogenous - indicator	I have sufficient work experience to use FBC performance data	Measurable	Ordinal
IF5	Exogenous - indicator	I support the use of FBC performance data in my departmental decision-making	Measurable	Ordinal
IF6	Exogenous - indicator	In my daily work I am primarily driven to serve citizens and the public interest	Measurable	Ordinal
5	Exogenous	External Influences	Latent	
EI1	Exogenous - indicator	I receive external encouragement (outside my local government) to use FBC performance data in my service area tasks	Measurable	Ordinal

	Attribute	Variable	Measurement Type	Data Type
EI2	Exogenous - indicator	I am concerned that the public can use FBC performance data against my service area	Measurable	Ordinal
EI3	Exogenous - indicator	I am concerned that media can use FBC performance data against my service area	Measurable	Ordinal
6	Endogenous	Use of Performance Information	Latent	
USE1	Endogenous - Indicator	I use FBC performance data to evaluate my service area (detect deficiencies, define best practices, detect trends, etc.)	Measurable	Ordinal
USE2	Endogenous - Indicator	I use FBC performance data in adopting new program approaches or changing work processes (decision-making) in my service area	Measurable	Ordinal
USE3	Endogenous - Indicator	I use FBC performance data in planning my service area projects and improvements	Measurable	Ordinal
USE4	Endogenous - Indicator	I use FBC performance data in departmental budgeting (decisions/requests)	Measurable	Ordinal
USE5	Endogenous - Indicator	I use FBC performance data in making personnel decisions (promotion, termination, new hire, setting job expectations)	Measurable	Ordinal
USE6	Endogenous - Indicator	My department uses FBC performance data in making personnel decisions (promotion, termination, new hire, setting job expectations)	Measurable	Ordinal
USE7	Endogenous - Indicator	I use FBC performance data in reporting my service area performance to the public	Measurable	Ordinal
USE8	Endogenous - Indicator	I use FBC performance data in reporting my service area performance to elected officials	Measurable	Ordinal
USE9	Endogenous - Indicator	My department uses FBC performance data in reporting my service area performance to elected officials	Measurable	Ordinal
USE10	Endogenous - Indicator	I use FBC performance data to benchmark against the same service area in other governments	Measurable	Ordinal
7.	Control	Type of government	Measurable	Nominal

3.3   Data Collection

Two survey instruments were administered. Although each collected similar information, one was administered to the FBC primary coordinators and the other to public administrators from each of the service areas. The primary differences between the survey instruments were in some of the perspective language. The survey designed for the FBC primary coordinators asked them about their experiences in general, while the public administrator survey collected information on experiences in their respective service areas. The survey instruments contain 19 or 20 questions with most of the variables ordinal measures within a 6-point Likert scale. Many studies in the field have used Likert-scale measures whereupon respondents specified their level of agreement, effectiveness of an item, or frequency of use (Abdel-Maksoud, Elbanna, Mahama, & Pollanen, 2015; de Lancer Julnes & Holzer, 2001). The scales used range in value from 1 (lowest) to 5 (highest) (Melkers & Willoughby, 2005) with a sixth alternative of 'don't know'.

3.4   Sampling Method, Sample Size, and Power Analysis

The units of analysis are local government administrators from cities and counties within the FBC. All FBC member governments were asked to participate in the research and all FBC Primary Coordinators were asked to provide email addresses of one or two key personnel from each service area who were most involved in measuring, collecting, or reporting FBC performance data in the last data collection cycle.

There is no universal agreement on the sample size needed for conducting structural equation modeling (Weston & Gore, 2006). While some recommend 5 to 10 cases for each parameter to be estimated, others recommend a minimum sample size of 200 (Weston & Gore,

2006). Therefore, this study aimed to receive 200 completed surveys. Notwithstanding the rule-of-thumb that a sample size of 200 is sufficient, recent research has found that a smaller sample size is sufficient as well (Sideridis, Simos, Papanicolaou, & Fletcher, 2014; Wolf, Harrington, Clark, & Miller 2013). Wolf, Harrington, Clark, & Miller (2013) performed a Monte Carlo analysis to systematically evaluate the sample size need for SEM and concluded that sample size requirements ranged from 30 to 460 cases. Interestingly, they found that as the number of indicators in a measurement model increase, the sample size requirement decreases (Wolf, Harrington, Clark, & Miller 2013). As many of the measurement models used in this study have more than 3 indicators, this implies that a smaller size may be acceptable. In addition, if there is no missing data then a smaller sample size is also allowed (Wolf, Harrington, Clark, & Miller 2013). Moreover, Sideridis, Simos, Papanicolaou, & Fletcher, (2014) examined the impact of sample size on the model fit of a structural equation model with five latent variables and concluded that in situations where the sample size is above 50 cases, a satisfactory model fit may be obtained.

Power analysis is the probability of rejecting the null hypothesis when the null hypothesis is false. The power analysis is determined by the sample size and the alpha level. This study uses an alpha level of .05, which means that there is 95% confidence that the results are not due to chance.

3.5   Descriptive Analysis

In order to obtain a better understanding of the indicators and the distribution of the data, descriptive analysis is performed. Therefore, the frequency and normality data for each indicator is presented in Chapter 4. In addition, correlation analyses are performed to examine

multicollinearity among the indicators. If indicators are highly correlated, they both are most likely measuring the same phenomena. As it is recommended that highly correlated indicators should not be used together in a measurement model (Wan, 2002), one of the indicators will be removed in such an instance. In line with previous research, this study uses a correlation of .85 as the threshold for detecting multicollinearity (Weston & Gore, 2006).

<div align="center">3.6   <u>Confirmatory Factor Analysis</u></div>

As SEM has two components, (a) measurement model and (b) structural model (Wan, 2002), before conducting the analysis of the structural model, it is important to discuss the validation of the measurement models.

This study has six latent variables, and therefore there are six measurement models. Before illustrating and presenting all of the measurement models individually, the procedure for their validation should be explained. In order to validate the measurement models of the latent constructs, confirmatory factor analysis (CFA) which "explains the variation and covariation in a set of observed variables in terms of a set of unobserved factors" (Wan, 2002, p. 79) would be used.

In order to validate the measurement model, the following steps would be followed:

First, the factor loadings are examined for their statistical significance. The factor loadings that are statistically significant at the .05 level (have critical values larger than 1.96) are retained in the model. If some of the indicators are not statistically significant they are removed from the measurement model. Even if some of the indicators are removed, at least three indicators should be retained so as the measurement model does not become under-identified.

The second step is to examine the Goodness of Fit Statistics. There are more than a dozen statistics that reflect different aspects of fit (Kline, 2011). Therefore, the use of multiple indices is needed (Kline, 2011). While researchers disagree on the threshold for each index, this research follows Kline's (2011) recommended approach to model fit evaluation. The table below summarize the Goodness of Fit Statistics that this study aims to meet.

Table 3: Goodness of Fit Indices

INDEX	CRITERION
Chi-square (x2)	Low
Degrees of Freedom (df)	$\geq .0$
Likelihood Ratio (x2 /df)	<4
Goodness of Fit Index (GFI)	>.90
Adjusted GFI (AGFI)	>.90
Root Mean Square Error of Approximation (RMSEA)	$\leq .05$

If the model fits the data, it means that the model is valid. However, if the model is not an adequate fit with the data, then the Modification Indices (MIs) would be examined. The modification indices pin-point correlations between measurement errors. The value of the modification indices is dependent on the particular model, however, the higher the value of MIs, the higher the correlation between the error terms. After the errors are correlated, the model is run again. Then the Goodness of Fit Statistics are examined to check if the revised measurement model adequately fits the data. It must be noted that if there are correlated errors there is the possibility of variance not being accounted for or an important variable has been omitted. If this occurs, the literature should be reexamined for omitted indicators.

3.6.1 Measurement Model of Use of Performance Information

The latent endogenous variable use of performance information measures the extent of the use of performance information among local government administrators. The survey asks respondents to rate their use of performance information in the following: program evaluation (detection of deficiencies), adopting new program approaches or changing work processes (decision-making), departmental planning (setting goals/priorities), departmental budgeting (decisions/requests), assessment of individual behavior (personnel decisions: promotion, termination, new hire, setting job expectations) by the public administrator or by the department, reporting to public or elected officials, departmental accountability to elected officials, and benchmarking. The proposed measurement model is illustrated in Figure 2.
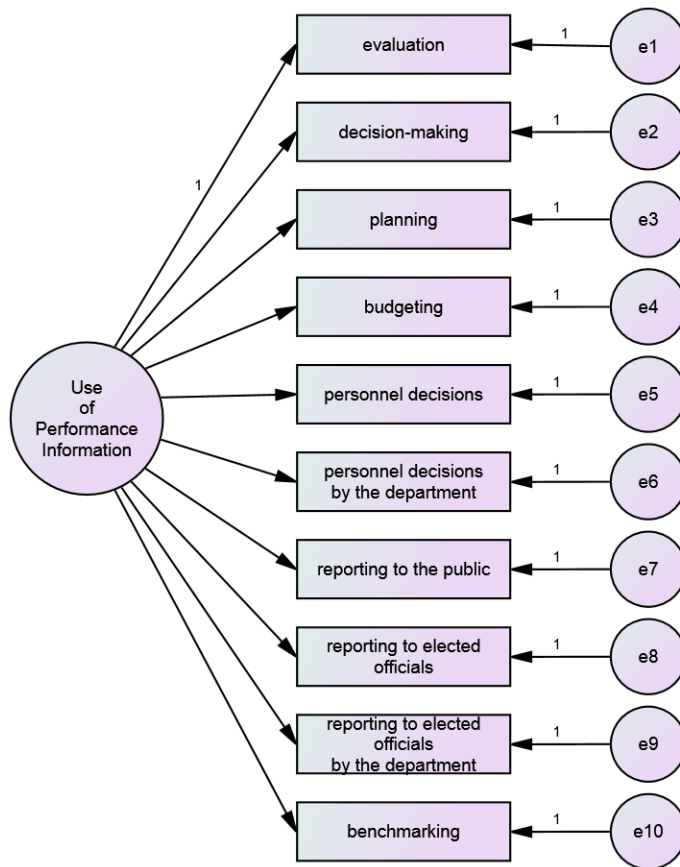
Figure 2: Measurement Model of Use of Performance Information

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3.6.2   Measurement Model of Design Adequacy of Performance Measurement System

The exogenous construct of design adequacy of performance measurement system measures the extent of appropriateness for the measurement system by the use of public administrators. This measurement model has seven indicators where public administrators are asked the extent to which they believe that performance measures are clear, appropriate, and meet their performance data needs. In addition, respondents are also asked if the performance measures are linked to specific goals and priorities as well as the ease of access. Lastly, respondents are asked if they find the performance data timely and if the data collection requires a reasonable amount of their time. The proposed measurement model is illustrated in Figure 3.
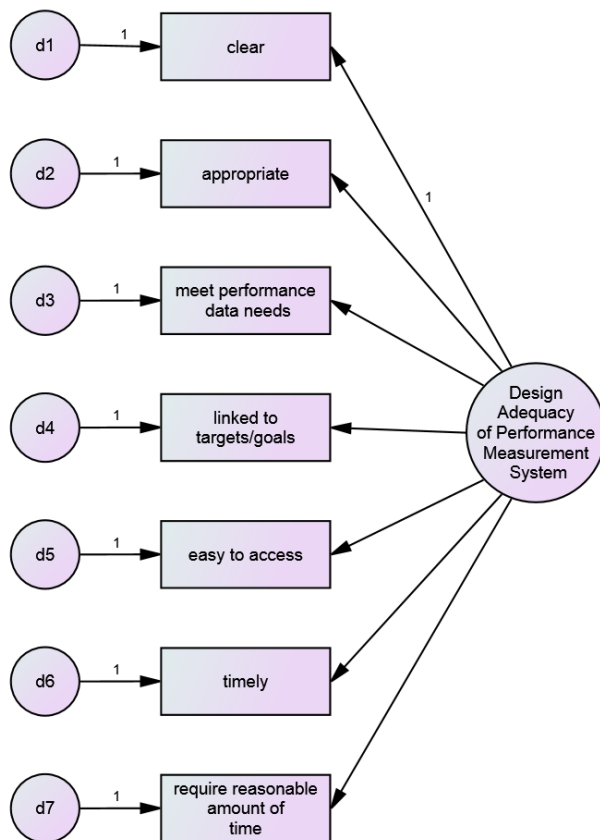
Figure 3: Measurement Model of Design Adequacy of Performance Measurement System

3.6.3   Measurement Model of Institutionalization of Performance Measurement

The exogenous construct institutionalization of performance measurement, measures the extent to which the performance practices are incorporated in the rules and routines of the organization. This variable is composed of six indicators: existence of meetings dedicated to FBC performance data; discussion of FBC performance information at other departmental meetings; use of FBC performance information in internal departmental communication; regular (analysis) comparison of FBC performance information; incorporation of FBC performance measures in strategic plans and goal setting (planning efforts); and distribution of FBC performance data within the department. The proposed measurement model is illustrated in Figure 4.
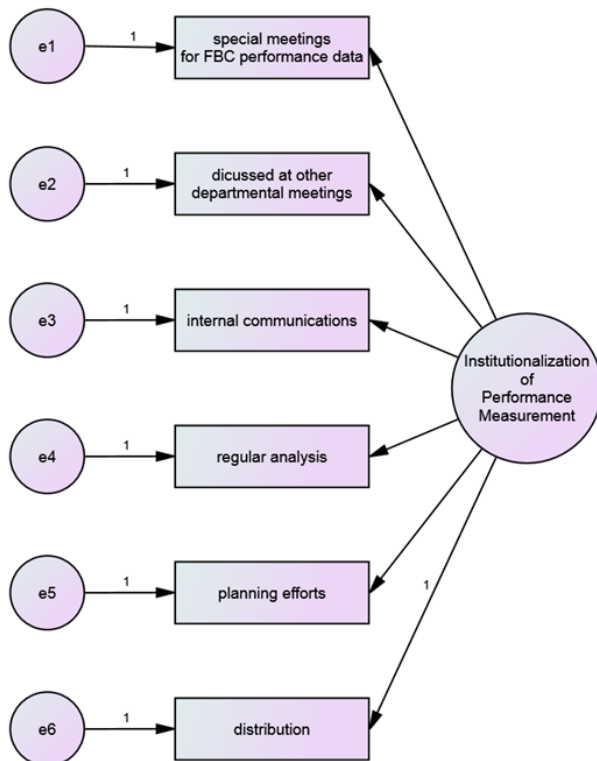
Figure 4: Measurement Model of Institutionalization of Performance Measurement

3.6.4   Measurement Model of Organizational Support

The variable organizational support measures the extent of support towards the use of

performance information. In that line, the survey instrument asks the respondents to evaluate the

departmental encouragement for the use of performance data in making decisions and the

existence of a specialized performance unit (person) that may assist with any performance

related issue/question. In addition, organizational support also includes the availability of

resources for measurement with the analysis of FBC performance data and the extent of

departmental flexibility in decision-making where public administrators are empowered to make

decisions based on performance data. The proposed measurement model is illustrated in Figure

5.
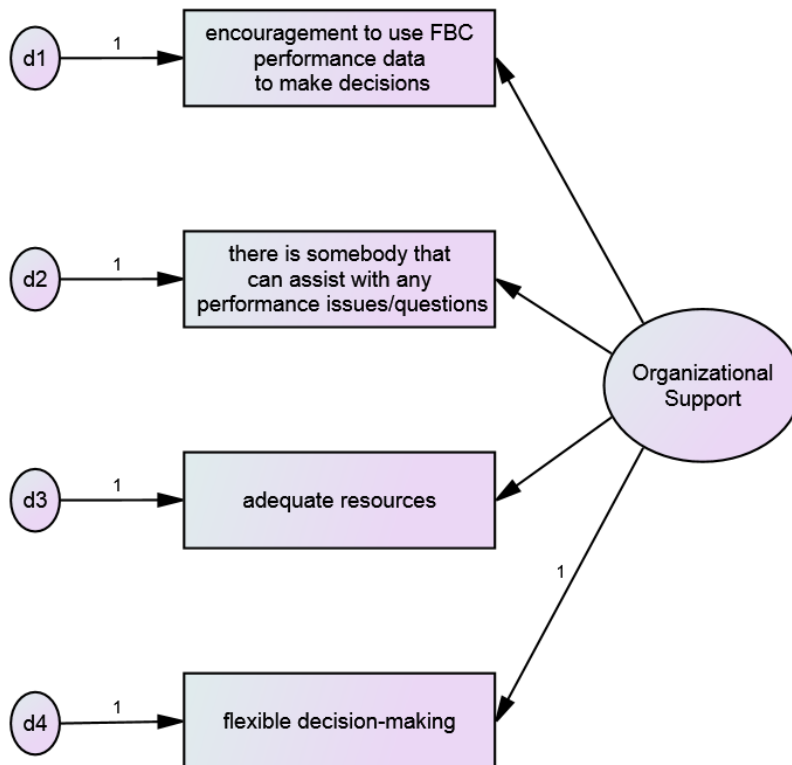
Figure 5: Measurement Model of Organizational Support

3.6.5   Measurement Model of Individual Factors

The latent variable individual factors is composed of six indicators: technical knowledge, skills, training, work experience, support for the use of performance information and public service motivation. The proposed measurement model is illustrated in the Figure 6.
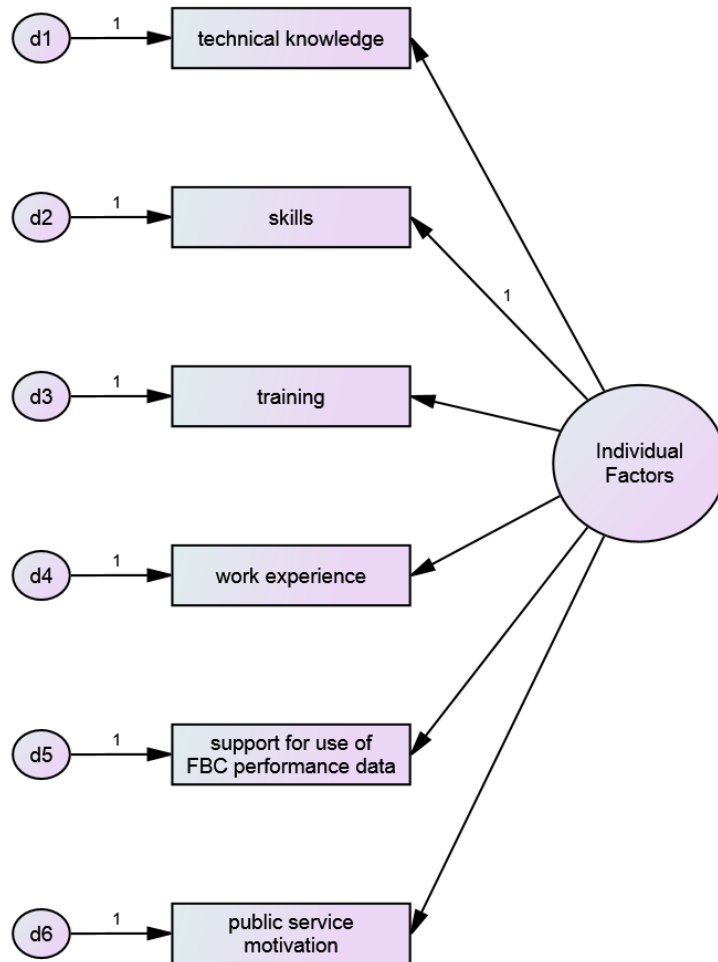
Figure 6: Measurement Model of Individual Factors

3.6.6   Measurement Model of External Influences

The latent variable external influences is composed of data representing the external support for use of performance information and the perceived threat that public and media can

use performance information against the department. The proposed measurement model is illustrated in Figure 7.
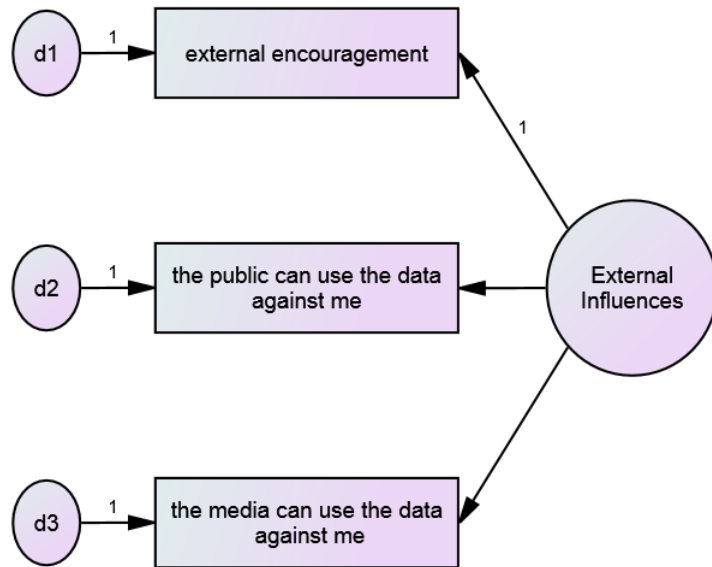
Figure 7: Measurement Model of External Influences

3.6.7   Control Variable

There is one control variable used in the study, that is type of government. As the FBC membership consist of cities, counties, and few local authorities, this study controlled for the effect of the type of local government on the use of performance information. This is dummy variable where city was coded as one and counties and local authorities were coded as zero.

3.7   Structural Equation Modeling for the Covariance Structural Model

The hypothesized relationship is examined using SEM. The full SEM model is presented in Figure 8.
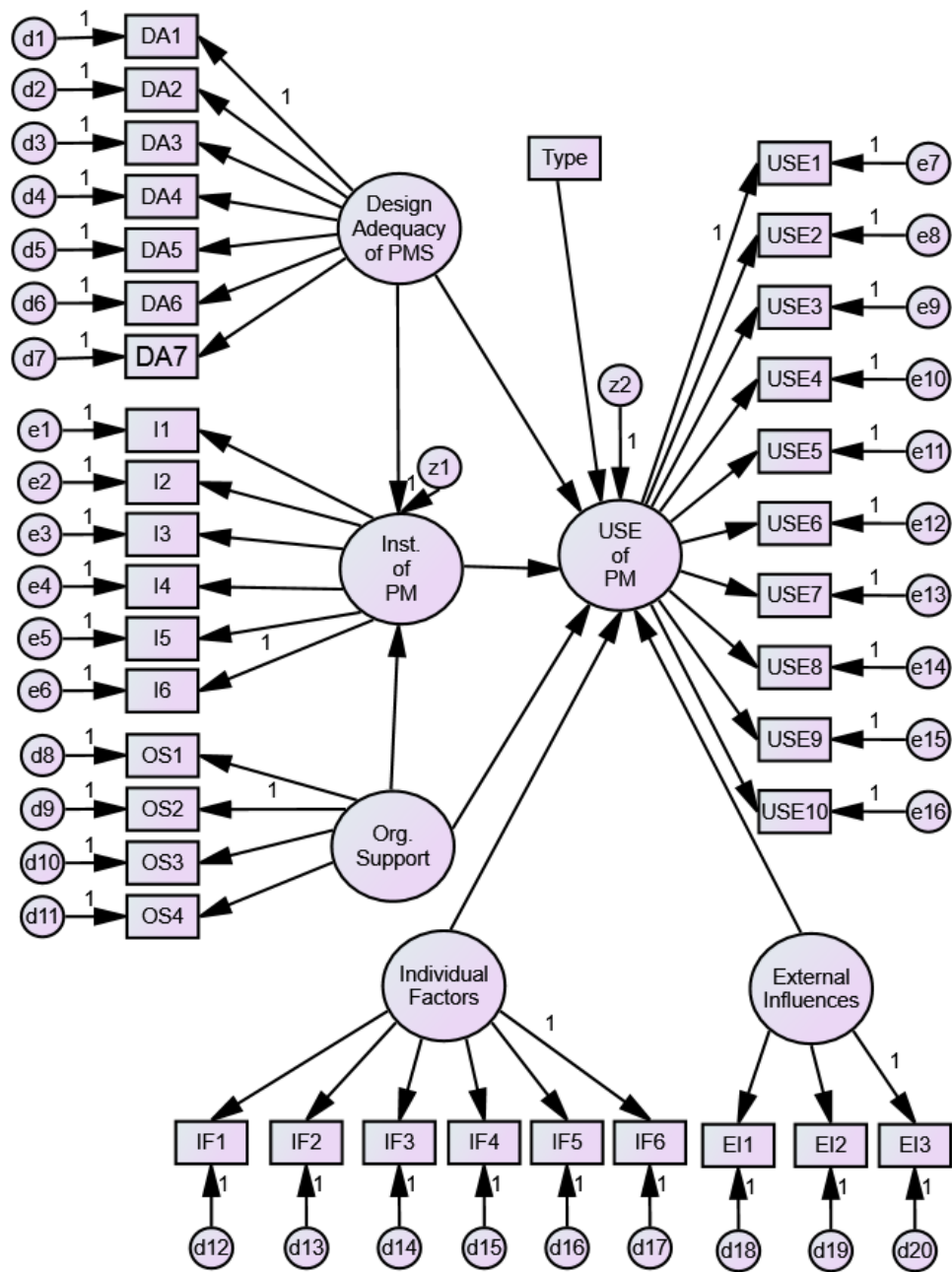
Figure 8: Structural Equation Model of Use of Performance Information

3.7.1   Validation of the Model: Overall Model Fit and Goodness of Fit Statistics

The procedure for validation of the covariance structural model is similar to the

validation of the measurement models.

First, the path coefficients would be examined if they are statistically significant at .05 level. If their critical value is larger than 1.96 they would be retained in the model, if they are not, they would be removed. Next, the goodness of fit statistics would be examined. The criteria are the same as the criteria for validation of the measurement model as presented earlier. The third step is to examine the modification indices. The procedure is the same as in the measurement model. Lastly, the relative importance of each construct in explanation of the variation in the endogenous variable will be presented.

3.8 Human Subjects

This study respects the recommendation for academic research provided by Mauch & Park (2003) and ensures that the respondents remain anonymous. Institutional Review Board (IRB) approval from the University of Central Florida was obtained and is presented in Appendix C.

3.9 Summary of the Chapter

This chapter reviewed the research design of the study, the process of data collection, and key study variables. In addition, the section illustrated the measurement models, the covariance structure model and the processes that would be used for their validation. The next chapter presents the results of the analysis.

CHAPTER 4: FINDINGS

This chapter presents the results of the analysis. First, the survey sample size is presented with a discussion of the sample representativeness. Next, all study variables are examined and their descriptive statistics are presented. Later, the data is examined for potential multicollinearity and non-normality issues. Afterwards, through the use of confirmatory factor analysis (CFA) all measurement models are validated, and the use of Cronbach's alpha confirmed reliability of each. Only after all measurement models are validated, the covariance structural model is analyzed. The chapter finishes with conclusions on the tested hypotheses.

4.1   Descriptive Statistics

4.1.1   Sample Size and Response Rate

In the last data collection cycle (fiscal year 2015-2016), the Florida Benchmarking Consortium had membership of 40 local governments. In September and October of 2016, all FBC Primary Coordinators were contacted and were asked to participate in the study. Out of the 40 local governments, 29 governments responded that they would participate in the research and 11 did not respond or stated that they do not wish to take part. Those that decided not to participate stated that their government is either no longer an FBC member, or the timing of the study is not convenient for them. Out of those 29 governments participating, 11 were counties and 18 cities. The full list of participating governments is provided in Appendix D. Those 29 FBC primary coordinators provided email contact addresses of public administrators, one or two from each service area, who have been involved in the last FBC data collection cycle. The survey was then sent to 338 people, with 8 emails bouncing back, bringing the number of eligible

respondents to 330. The survey opened on October 20, 2016 and participants received three subsequent reminders on October 25, November 4, and November 17, 2016. 173 respondents started the survey, clicked the link but did not answer any questions or answered the first couple of questions, with 124 providing usable responses. Even though the response rate is considerably high 37.57 % (124 out of 330), the study did not achieve the minimum of 200 respondents as initially planned. This however, should not pose significant analytical constraints. As stated earlier, there are simulation studies that have confirmed the use of SEM with a smaller sample size is acceptable (Sideridis, Simos, Papanicolaou, & Fletcher, 2014; Wolf, Harrington, Clark, & Miller 2013). In this research, the sample size of N=124 was found adequate for the following reasons: First, all of the measurement models have more than 3 indicators which makes them over-identified. In accordance with the findings of Wolf, Harrington, Clark, & Miller (2013), a higher number of indicators allows for a smaller sample size. Second, there is no missing value for any of the indicators in the model, and Wolf, Harrington, Clark, & Miller (2013) argue that in cases where there is no missing data, a smaller sample size is acceptable.

4.1.2   Sample Representativeness

Concerning the characteristics of respondents, 59 respondents (47.6%) are county employees, 63 (50.8%) are city employees, and 2 respondents (1.6%) work for special authorities. The majority of the respondents are men 53.8%, followed by 46.2% women and 4% did not specify their gender. Most of the respondents are experienced producers and users of FBC performance data. Only 17.7% of the respondents had only one year of involvement with FBC performance data, while 31.5% have between 2 and 3 years of experience. A large number of respondents (41.9%) have between 4 and 8 years of experience in collecting and reporting

FBC performance data and 8.9 % have more than 8 years of experience. As FBC collects

performance data on 19 service areas, it is important to examine whether the survey respondents

are representative of all service areas for which FBC collects performance data. Table 4 below

illustrates the number, percent of cases and percent of responses by service area.

Table 4: Descriptive Statistics of Service Area Frequencies

| | | Responses | | Percent of |
		N	Percent	Cases
Service Area[a]	Police (PO)	14	4.8%	11.6%
	Purchasing (PU)	15	5.1%	12.4%
	Risk Management (RM)	10	3.4%	8.3%
	Road Repair (RR)	16	5.5%	13.2%
	Solid Waste - Collection (SC)	11	3.8%	9.1%
	Solid Waste - Disposal (SW)	10	3.4%	8.3%
	Stormwater and Drainage Maintenance (SD)	18	6.2%	14.9%
	Traffic Engineering (TE)	11	3.8%	9.1%
	Water and Wastewater (WW)	20	6.8%	16.5%
	Animal Services (AS)	13	4.5%	10.7%
	Building Development and Review (BD)	23	7.9%	19.0%
	Code Enforcement (CE)	21	7.2%	17.4%
	Civic Engagement (CV)	16	5.5%	13.2%
	Environmental Management (EM)	11	3.8%	9.1%
	Fire Rescue (FR)	14	4.8%	11.6%
	Fleet Management (EM)	15	5.1%	12.4%
	Human Resources (HR)	16	5.5%	13.2%
	Information Technology (IT)	15	5.1%	12.4%
	Parks and Recreation (PR)	23	7.9%	19.0%
Total		292	100.0%	241.3%

a. Dichotomy group tabulated at value 1.

The table illustrates that all service areas are represented in the study. The service areas

of Environmental Management (EM), Traffic Engineering (TE), and Solid Waste - Collection

(SC) have the lowest representation with 11 responses each, while Parks and Recreation (PR)

and Building Development and Review (BD) have the highest representation with 23 responses each.

After examination of the sample representativeness and ensuring that the survey respondents are gender and experience balanced coming from all 19 service areas, the descriptive statistics of the variables used in the covariance structural model is examined.

4.1.3   Design Adequacy of Performance Measurement System

Design adequacy of the performance measurement system is an exogenous latent variable and measures the extent to which public administrators find the existing performance measurement system adequate for their work. The latent construct is composed of seven indicators which asked the respondents to state their level of agreement on a scale 1- strongly disagree to 5-strongly agree on whether the FBC performance measurement system is: clear, appropriate, meets their performance information needs, linked to departmental targets/goal/priorities, easy to access, timely and requires reasonable amount of their time for collecting and reporting data. The frequency and percentage distributions of all indicators included in the model are presented in Table 5.

Table 5: Frequency and Percentage Distributions of Design Adequacy of Performance Measurement System

Indicator The FBC performance measures for my service area are:	Response	Frequency	Percent	Cumulative Percent
clear	Strongly Disagree	2	1.6	1.6
	Disagree	17	13.7	15.3
	Neither agree nor disagree	18	14.5	29.8
	Agree	65	52.4	82.3
	Strongly Agree	22	17.7	100.0
	Total	124	100.0	

Indicator The FBC performance measures for my service area are:	Response	Frequency	Percent	Cumulative Percent
		1	.8	.8
appropriate	Strongly Disagree			
	Disagree	14	11.3	12.1
	Neither agree nor disagree	24	19.4	31.5
	Agree	74	59.7	91.1
	Strongly Agree	11	8.9	100.0
	Total	124	100.0	
meet my personal performance data needs	Strongly Disagree	3	2.4	2.4
	Disagree	21	16.9	19.4
	Neither agree nor disagree	45	36.3	55.6
	Agree	44	35.5	91.1
	Strongly Agree	11	8.9	100.0
	Total	124	100.0	
linked to my departmental targets/goals/priorities	Strongly Disagree	5	4.0	4.0
	Disagree	23	18.5	22.6
	Neither agree nor disagree	36	29.0	51.6
	Agree	46	37.1	88.7
	Strongly Agree	14	11.3	100.0
	Total	124	100.0	
easy to access	Strongly Disagree	2	1.6	1.6
	Disagree	25	20.2	21.8
	Neither agree nor disagree	25	20.2	41.9
	Agree	55	44.4	86.3
	Strongly Agree	17	13.7	100.0
	Total	124	100.0	
timely	Strongly Disagree	3	2.4	2.4
	Disagree	21	16.9	19.4
	Neither agree nor disagree	34	27.4	46.8
	Agree	54	43.5	90.3
	Strongly Agree	12	9.7	100.0
	Total	124	100.0	
require reasonable amount of my time for collecting and reporting performance data	Strongly Disagree	4	3.2	3.2
	Disagree	14	11.3	14.5
	Neither agree nor disagree	14	11.3	25.8
	Agree	69	55.6	81.5
	Strongly Agree	23	18.5	100.0
	Total	124	100.0	

As Table 5 shows, the respondents answered all of the seven questions that measure the design adequacy of the PMS in a similar fashion. The majority of the respondents (above 50%) agreed that performance measures are clear, appropriate and require a reasonable amount of time for collection and reporting. The other indicators such as meeting their performance data needs, link with goals, easy to access and timely, achieved a lower level of agreement but still considerably high, receiving 35.5%, 37.1%, 44.4 % and 43.5% respectively. This coupled with the respondents who indicated a strong agreement with the statements, show considerable agreement with the indicators of design adequacy of performance measurement.

4.1.4   Institutionalization of Performance Measurement

Institutionalization of performance measurement is a mediating variable in the model and measures the extent of the incorporation of performance related processes within the organization. The construct of institutionalization of performance measurement is composed of 6 indicators: i) existence of special meeting dedicated to FBC performance data, ii) discussion of FBC performance data at other departmental meeting, iii) use of FBC performance data in internal communication, iv) analysis of FBC performance data, v) use of FBC performance data in planning efforts and, vi) distribution of FBC performance data within the department. The frequency and percentage distributions of the indicators of institutionalization of performance measurement are presented in Table 6.

Table 6: Frequency and Percentage Distributions of Institutionalization of Performance Measurement

Indicator: Incorporation of FBC performance data in:	Response	Frequency	Percent	Cumulative Percent
special meetings	Strongly Disagree	22	17.7	17.7
	Disagree	55	44.4	62.1
	Neither agree nor disagree	17	13.7	75.8
	Agree	28	22.6	98.4
	Strongly Agree	2	1.6	100.0
	Total	124	100.0	
other departmental meetings	Strongly Disagree	20	16.1	16.1
	Disagree	50	40.3	56.5
	Neither agree nor disagree	17	13.7	70.2
	Agree	34	27.4	97.6
	Strongly Agree	3	2.4	100.0
	Total	124	100.0	
internal communications	Strongly Disagree	16	12.9	12.9
	Disagree	48	38.7	51.6
	Neither agree nor disagree	23	18.5	70.2
	Agree	34	27.4	97.6
	Strongly Agree	3	2.4	100.0
	Total	124	100.0	
analysis	Strongly Disagree	15	12.1	12.1
	Disagree	29	23.4	35.5
	Neither agree nor disagree	21	16.9	52.4
	Agree	49	39.5	91.9
	Strongly Agree	10	8.1	100.0
	Total	124	100.0	
planning efforts	Strongly Disagree	15	12.1	12.1
	Disagree	40	32.3	44.4
	Neither agree nor disagree	23	18.5	62.9
	Agree	41	33.1	96.0
	Strongly Agree	5	4.0	100.0
	Total	124	100.0	
distribution to colleagues	Strongly Disagree	14	11.3	11.3
	Disagree	36	29.0	40.3
	Neither agree nor disagree	14	11.3	51.6
	Agree	42	33.9	85.5
	Strongly Agree	18	14.5	100.0
	Total	124	100.0	

As Table 6 shows, around 30 % of the respondents agreed or strongly agreed with the six indicators of the institutionalization of FBC performance data. The respondents showed the highest level of agreement with the analysis of FBC performance data where 39.5% respondents agreed that they analyze the data. Interestingly, a significant number of respondents disagreed with the incorporation indicators. In particular, 62.1 % of the respondents disagreed or strongly disagreed that they have special meetings dedicated to FBC performance information while 51.6% disagreed or strongly disagreed that they use FBC performance information in their internal communication and 56.4% disagreed or strongly disagreed that they use the FBC data in their departmental meetings.

4.1.5   Organizational Support

The exogenous variable organizational support was measured with four indicators examining the extent of organizational support public administrators receive for the use of performance data. In particular, the survey asked the respondents to rate their level of agreement on the following indicators: departmental encouragement to use FBC performance data, existence of specialized person/department for performance related issues, adequate resources for measuring and analyzing performance, and flexible decision-making. The frequency and percentage distribution are presented in Table 7.

Table 7: Frequency and Percentage Distributions of Organizational Support

Indicator: Existence of:	Response	Frequency	Percent	Cumulative Percent
department encouragement for use of performance data	Strongly Disagree	14	11.3	11.3
	Disagree	44	35.5	46.8
	Neither agree nor disagree	33	26.6	73.4
	Agree	25	20.2	93.5
	Strongly Agree	8	6.5	100.0
	Total	124	100.0	
somebody that I can turn to with performance related issues	Strongly Disagree	9	7.3	7.3
	Disagree	28	22.6	29.8
	Neither agree nor disagree	20	16.1	46.0
	Agree	50	40.3	86.3
	Strongly Agree	17	13.7	100.0
	Total	124	100.0	
adequate resources	Strongly Disagree	4	3.2	3.2
	Disagree	20	16.1	19.4
	Neither agree nor disagree	22	17.7	37.1
	Agree	65	52.4	89.5
	Strongly Agree	13	10.5	100.0
	Total	124	100.0	
flexible decision-making	Strongly Disagree	6	4.8	4.8
	Disagree	12	9.7	14.5
	Neither agree nor disagree	37	29.8	44.4
	Agree	54	43.5	87.9
	Strongly Agree	15	12.1	100.0
	Total	124	100.0	

Table 7 demonstrates that most of the respondents stated they agree or strongly agree that someone in their government is available for any performance related questions (54%). Moreover, 62.9 % of respondents agreed or strongly agreed that they have adequate resources to measure and analyze performance data, with 55.6% agreeing or strongly agreeing that they are empowered to make flexible decisions on the basis of performance data. Interestingly, only 26.7% agreed or strongly agreed that they have received department encouragement to use the data to make decisions related with their job.

4.1.6 Individual Factors

The construct of individual factors (IF) is an exogenous variable in the model and measures the respondents' technical knowledge, skills, training, work experience, support for the use of performance data, and their public service motivation. The frequency and percentage distributions for the individual factors are presented in the Table 8.

Table 8: Frequency and Percentage Distributions of Individual Factors

Indicator	Response	Frequency	Percent	Cumulative Percent
technical knowledge	Strongly Disagree	2	1.6	1.6
	Disagree	5	4.0	5.6
	Neither agree nor disagree	21	16.9	22.6
	Agree	60	48.4	71.0
	Strongly Agree	36	29.0	100.0
	Total	124	100.0	
skills	Strongly Disagree	2	1.6	1.6
	Disagree	3	2.4	4.0
	Neither agree nor disagree	13	10.5	14.5
	Agree	67	54.0	68.5
	Strongly Agree	39	31.5	100.0
	Total	124	100.0	
training	Strongly Disagree	2	1.6	1.6
	Disagree	12	9.7	11.3
	Neither agree nor disagree	23	18.5	29.8
	Agree	56	45.2	75.0
	Strongly Agree	31	25.0	100.0
	Total	124	100.0	
work experience	Strongly Disagree	1	.8	.8
	Disagree	7	5.6	6.5
	Neither agree nor disagree	13	10.5	16.9
	Agree	63	50.8	67.7
	Strongly Agree	40	32.3	100.0
	Total	124	100.0	
support for FBC performance measures	Strongly Disagree	2	1.6	1.6
	Disagree	18	14.5	16.1
	Neither agree nor disagree	27	21.8	37.9
	Agree	50	40.3	78.2
	Strongly Agree	27	21.8	100.0
	Total	124	100.0	
public service motivation	Strongly Disagree	1	.8	.8

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Indicator	Response	Frequency	Percent	Cumulative Percent
	Disagree	5	4.0	4.8
	Neither agree nor disagree	8	6.5	11.3
	Agree	36	29.0	40.3
	Strongly Agree	74	59.7	100.0
	Total	124	100.0	

Table 8 demonstrates that the majority of the respondents ranked highly their technical knowledge, skills, training, working experience and public service motivation. Above 80% of the respondents agreed or strongly agreed with most of the five indicators listed above. However, although more than 80% the respondents had the necessary skills and public service motivation to use performance data only 62.1% were supportive towards the actual use of performance data in making decisions. Although 62.1% is still shows relatively high support, it is under the prevalent rate of agreement of around 80 %.

4.1.7   External Influences

External Influence (EI) is an exogenous variable that measures outside support for the use of performance information public administrators receive, as well as the perceived threat that the public or media can use the performance data against the department. The frequency and percentage distribution for external influence is presented in Table 9.

Table 9 shows that 55.6% of the respondents disagreed or strongly disagreed that they received external encouragement to use FBC performance data but at the same time the majority stated that they disagree or strongly disagree that the public (62.1%) or media (60.5%) could use the performance data against them. Moreover, one third of the respondents were neutral for these questions. This descriptive statistic suggests that the impact of environmental influence may be low.

Table 9: Frequency and Percentage Distributions of External Influences

Indicator	Response	Frequency	Percent	Cumulative Percent
receive external encouragement	Strongly Disagree	16	12.9	12.9
	Disagree	53	42.7	55.6
	Neither agree nor disagree	33	26.6	82.3
	Agree	16	12.9	95.2
	Strongly Agree	6	4.8	100.0
	Total	124	100.0	
Concern that the public can use FBC performance data against them	Strongly Disagree	19	15.3	15.3
	Disagree	58	46.8	62.1
	Neither agree nor disagree	39	31.5	93.5
	Agree	8	6.5	100.0
	Total	124	100.0	
concern that media can use FBC performance data against them	Strongly Disagree	19	15.3	15.3
	Disagree	56	45.2	60.5
	Neither agree nor disagree	36	29.0	89.5
	Agree	13	10.5	100.0
	Total	124	100.0	

4.1.8   Use of Performance information

The Use of Performance Information was the primary endogenous variable in the model. The respondents were asked to rate their level of agreement on ten indicators that measured the various uses of performance information. The various uses of performance information are: evaluation, decision-making, planning, budgeting, personnel decisions by the public administrator or the department, reporting to the public, reporting to elected officials by the public administrator or the department and benchmarking. The frequency and percentage distribution for use of performance information is presented in Table 10.

Table 10: Frequency and Percentage Distributions of Use of Performance Information

Indicator Use of Performance information to:	Response	Frequency	Percent	Cumulative Percent
evaluate	Strongly Disagree	10	8.1	8.1
	Disagree	36	29.0	37.1
	Neither agree nor disagree	23	18.5	55.6
	Agree	48	38.7	94.4

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Indicator Use of Performance information to:	Response	Frequency	Percent	Cumulative Percent
	Strongly Agree	7	5.6	100.0
	Total	124	100.0	
adopt new program approaches	Strongly Disagree	11	8.9	8.9
	Disagree	46	37.1	46.0
	Neither agree nor disagree	30	24.2	70.2
	Agree	31	25.0	95.2
	Strongly Agree	6	4.8	100.0
	Total	124	100.0	
plan service area projects and improvements	Strongly Disagree	11	8.9	8.9
	Disagree	46	37.1	46.0
	Neither agree nor disagree	28	22.6	68.5
	Agree	35	28.2	96.8
	Strongly Agree	4	3.2	100.0
	Total	124	100.0	
departmental budgeting	Strongly Disagree	12	9.7	9.7
	Disagree	42	33.9	43.5
	Neither agree nor disagree	29	23.4	66.9
	Agree	35	28.2	95.2
	Strongly Agree	6	4.8	100.0
	Total	124	100.0	
personnel decisions	Strongly Disagree	13	10.5	10.5
	Disagree	59	47.6	58.1
	Neither agree nor disagree	36	29.0	87.1
	Agree	14	11.3	98.4
	Strongly Agree	2	1.6	100.0
	Total	124	100.0	
departmental personnel decisions	Strongly Disagree	17	13.7	13.7
	Disagree	57	46.0	59.7
	Neither agree nor disagree	39	31.5	91.1
	Agree	11	8.9	100.0
	Total	124	100.0	
reporting to public	Strongly Disagree	8	6.5	6.5
	Disagree	43	34.7	41.1
	Neither agree nor disagree	36	29.0	70.2
	Agree	32	25.8	96.0
	Strongly Agree	5	4.0	100.0
	Total	124	100.0	
reporting to elected officials	Strongly Disagree	9	7.3	7.3
	Disagree	38	30.6	37.9
	Neither agree nor disagree	34	27.4	65.3
	Agree	38	30.6	96.0
	Strongly Agree	5	4.0	100.0

Indicator Use of Performance information to:	Response	Frequency	Percent	Cumulative Percent
	Total	124	100.0	
departmental reporting to elected officials	Strongly Disagree	9	7.3	7.3
	Disagree	33	26.6	33.9
	Neither agree nor disagree	40	32.3	66.1
	Agree	38	30.6	96.8
	Strongly Agree	4	3.2	100.0
	Total	124	100.0	
benchmark against other governments	Strongly Disagree	10	8.1	8.1
	Disagree	29	23.4	31.5
	Neither agree nor disagree	23	18.5	50.0
	Agree	46	37.1	87.1
	Strongly Agree	16	12.9	100.0
	Total	124	100.0	

As Table 10 illustrates, around 30% of the respondents agreed or strongly agreed that they used performance information for the various purposes included in the survey. The highest use of FBC performance data was to benchmark against other governments where 50% of the respondents agreed or strongly agreed for that capacity. The second highest use was for evaluation where 44.3% of respondents agreed or strongly agreed that they use performance data for this purpose. At the same time, a high number of the respondents stated they disagree or strongly disagree they use performance information to adopt new program approaches (46%), budgeting (43.5%), and making personnel decisions in their respective departments (59.7%).

4.2   Multicollinearity

Multicollinearity occurs when indicators of the measurement model are highly correlated. Weston & Gore (2006) argue that multicollinery should be examined and redundant indicators eliminated from the model. In accordance with previous research and prevailing recommendations (Weston & Gore, 2006), a bivariate multicollinearity of .85 was set as the

threshold in this study. In order to examine the presence of multicollinearity, Spearman's rank order correlation is used. This was appropriate as the data were ordinal (Pallant, 2013). All of the correlation matrixes are presented in Appendix E.

Examination of the correlation among the indicators of the Design Adequacy of the Performance Measurement System (DA) revealed that none of the correlations meet the threshold of .85 and therefore, there is no multicollinearity present. The correlation coefficients range from .207 to .685, where the lowest correlation is between *performance data is easy to access* (DA5) and *performance measures are linked to departmental targets* (DA4), and the highest correlation is between *performance measures are linked to departmental targets* (DA4) and *performance measures meet my personal performance data needs* (DA3). It is noteworthy that the indicator *performance measures require reasonable amount of my time for collecting and reporting performance data* (DA7) had statistically insignificant relationships with the following indicators: performance measures are *clear* (DA1), *appropriate* (DA2), *linked to departmental targets* (DA4), and *timely* (DA6). In general, it is assumed that the indicators in the model should have some correlation, the underlying assumption being that they are measuring the same construct, therefore, the indicator *performance measures require reasonable amount of my time for collecting and reporting performance data* (DA7) is removed from the model. With the exception of this indicator, all other correlation coefficients achieved statistical significance at the .05 level and are retained in the model.

The correlation analysis of the indicators of the latent construct Institutionalization of Performance Measurement (I) revealed that all correlations are statistically significant at the .05 level. The correlation coefficients range between .369 and .706. The lowest correlation is between *distribution of FBC performance data within the department* (I6) and *there are special*

meetings where FBC performance data are discussed (I1), and the highest correlation of .706 is between *use of FBC performance data in planning efforts* (I5) and *analysis of FBC performance data* (I4). None of the correlation coefficients are larger than .85 and therefore, all indicators are retained in the model.

The construct of Organizational Support (OS) is measured with four indicators whose correlation analysis did not reveal multicollinearity. The lowest correlation of .216 is between *adequate resources to measure and analyze performance data* (OS3) and *department encouragement for use of performance data* (OS1). The highest correlation of .350 is between *there are adequate resources to measure and analyze performance data* (OS3) and *there is somebody that I can turn to that can assist me with any performance related issues/questions* (OS2). Almost all of the correlations achieved statistical significance at the .05 level with the exception of *flexible decision-making* (OS4) and *there is somebody that can assist with any performance related issues/questions* (OS2). However, this relationship was very close to achieving the .05 statistical significance level and therefore, both indicators were retained in the model.

Regarding multicollinearity among the indicators for Individual Factors (IF), higher correlation coefficients were detected. The highest was .802 between *technical knowledge* (IF1) and *skills* (IF2). Although this was a high correlation, it did not pass the threshold of .85. The lowest correlation was .261 for the correlation between *public service motivation* (IF6) and *training* (IF3). Only one correlation did not achieve statistical significance and it was *public service motivation* (IF6) and *support for the use of FBC performance data* (IF5). However, these indicators were not excluded from the model.

The correlation analysis of the indicators for External Influences (EI) revealed a high correlation of .907 between *concern that the public can use FBC performance data against them* (EF2) and *concern that media can use FBC performance data against them* (EF3). In addition, the correlation analysis revealed an insignificant correlation between *external encouragement to use FBC performance data* (EF1) and *concern that the public can use FBC performance data against* them (EF2). The presence of multicollinearity means that one of the indicators should be eliminated, while at the same time, the model needs at least three indicators to be identified. Bearing in mind that model identification is crucial, and considering the potential negative impact of multicollinearity, the latent construct of external influences is deleted and it is not included in further analysis.

The Use of Performance Information (USE) was the endogenous variable in the model and was composed of 10 indicators measuring the various uses of performance information. The correlation analysis showed that three pairs of correlations meet the multicollinearity threshold of .85. In particular, the s Spearman's rho coefficient for *decision-making* (USE2) and *planning* (USE3) is .848, for the pair *reporting to elected officials* (USE8) and *reporting to the public* (USE7) is .853, and for *department use in reporting to elected officials* (USE9) and *reporting to elected officials* by the public administrator (USE8) is .880. Therefore, *decision-making* (USE2) and *reporting to elected officials* (USE8) are deleted from the model. All correlations are statistically significant at the .05 level and were retained in the model.

4.3   Normality

Multivariate normality is another assumption of the test. As multivariate normality involves infinite linear combinations, in accordance with the recommendations from Weston &

Gore (2006), the distributions of all observed indicators are examined. In order to assess the normality of the distribution, the skewness and kurtosis were examined. Skewness, measuring the degree of asymmetry, should have an absolute value smaller than 3.0 and the kurtosis index, measuring the peak and tails of the distribution, should have an absolute value smaller than 10 (Weston & Gore, 2006). Acknowledging that data used in the study is ordinal, a perfect normality cannot be achieved. However, the skewness and kurtosis values, given in Appendix F, demonstrate that the distribution is approximately normal, which for the purpose of this analysis was considered satisfactory.

4.4 Confirmatory Factor Analysis

The measurement model allows for the evaluation of the appropriateness of the observed variables in identifying an underlying construct (Weston & Gore, 2006). In order to test the measurement models, Confirmatory Factor Analysis (CFA) is used. CFA "explains the variation and covariation in a set of observed variables in terms of a set of theoretical, unobserved factors" (Wan, 2002, p. 89). When measures of a latent construct are strongly related to each other, the latent construct is defined more accurately (Weston & Gore, 2006). If there are weak correlations among the indicators, the construct is poorly defined (Weston & Gore, 2006). After conducting the correlation analysis in the previous section and eliminating the redundant indicators, the measurement models are evaluated with the use of CFA. The goodness of fit statistics were presented in Chapter 3. The next subsection discusses each of the measurement models and their respective CFA.

4.4.1 Design Adequacy of Performance Measurement System

The generic model of design adequacy of the performance measurement system contained seven indicators. However, after the multicollinearity analysis, the indicator *performance measures require reasonable amount of my time for collecting and reporting performance data* (DA7) was removed from the model. The tested model is given in Figure 9.
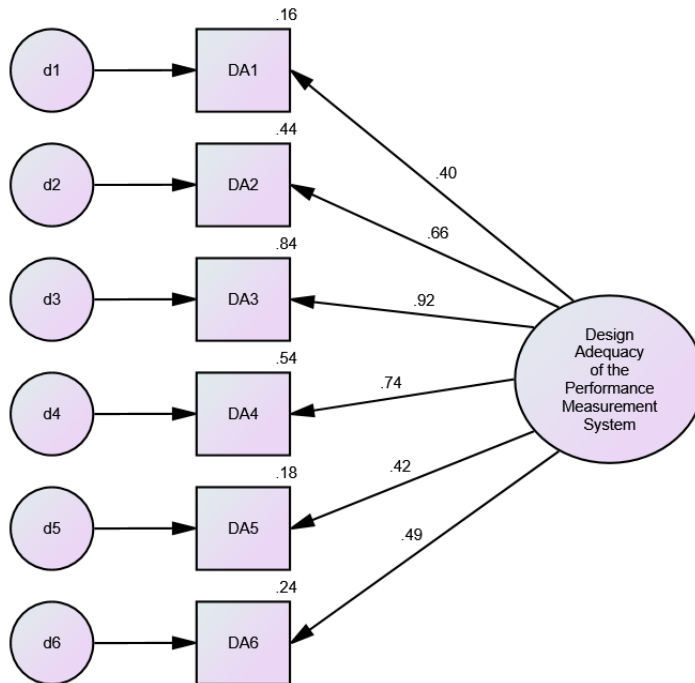

Figure 9: Generic Model of Design Adequacy of Performance Measurement System

In order to validate the measurement model, factor loadings were examined. Table 11 presents the factor loadings and demonstrates that all indicators have critical values larger than 1.96 and are statistically significant at the 0.05 level. This indicates that all indictors should remain in the model. In the next step, the goodness of fit statistics were examined. Table 12 demonstrates that data is generally a good fit to the model however, the RMSEA and Chi-square associated p-value have room for improvement. Therefore, the modification indices were

examined and the measurement errors were correlated. The revised measurement model for DA
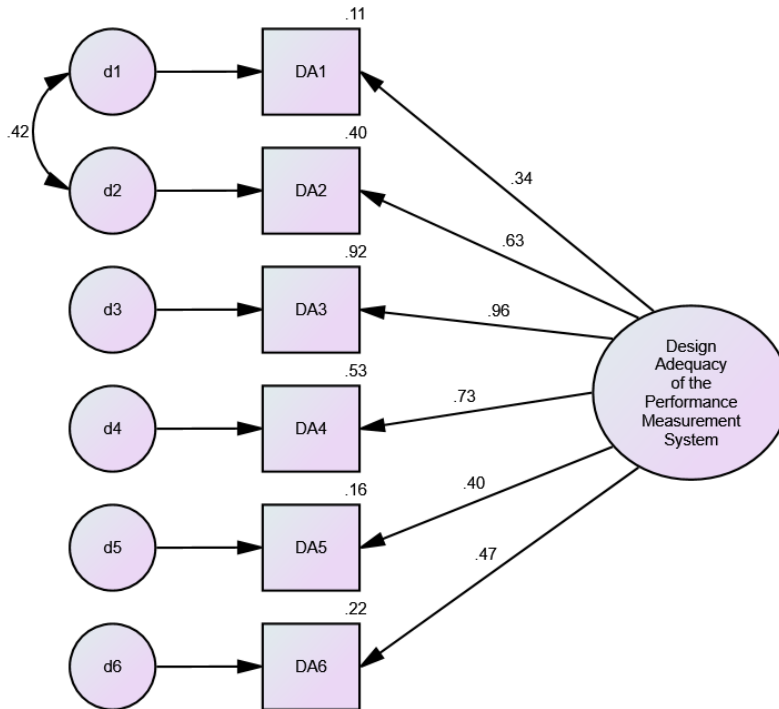
is presented in Figure 10.

Figure 10: Revised Model of Design Adequacy of Performance Measurement System

The parameter estimates for the revised model show that all indictors are statistically

significant at the .05 level. Therefore, all were retained in the model.

Table 11: Parameter Estimates for Design Adequacy of the Performance Measurement System

	Generic Model					Revised Model				
	USRW	SRW	S.E.	C.R.	P	USRW	SRW	S.E.	C.R.	P
DA6	1.205	0.488	0.335	3.601	***	1.369	0.467	0.430	3.184	0.001
DA5	1.104	0.424	0.331	3.34	***	1.227	0.397	0.414	2.961	0.003
DA4	1.953	0.737	0.461	4.237	***	2.29	0.728	0.628	3.647	***
DA3	2.212	0.917	0.505	4.381	***	2.746	0.96	0.742	3.7	***
DA2	1.41	0.664	0.344	4.099	***	1.585	0.629	0.374	4.24	***
DA1	1	0.402				1	0.339			
d2<-->d1						0.243	0.418	0.06	4.075	***

Note: URW = Unstandardized Regression Weight; SRW = Standardized Regression Weight; SE = Standard Error;
CR = Critical Ratio; *** = Correlation is significant at .01 level

In the next step, the goodness of fit statistics of the revised model were examined. Table 12 presents the goodness of fit indices for the generic and revised models and reports that the revised model was an excellent fit for the data.

Table 12: Goodness of Fit Statistics for Design Adequacy of the Performance Measurement System

Fit Index	Criteria	Generic Model	Revised Model
Chi-Square (CMIN)	low	34.377	13.341
Chi-Square related p value	$\geq.05$	.000	.101
Degrees of Freedom (df)	>0	9	8
Likelihood ratio (CMIN/df)	≤ 4	3.820	1.668
Goodness of Fit Index (GFI)	$\geq.90$	.912	.965
Adjusted GFI (AGFI)	$\geq..90$	.795	.908
Root Mean Square Error of Approximation (RMSEA)	$\leq.08$	.151	.074

Since model fit was achieved, it was important to examine the relative importance of the indicators in the measurement model. The most reliable indicator for Design Adequacy of Performance Measurement System is the indicator DA3 (*performance measures meet my personal performance data needs)* with a standardized regression weight of .96. On the other hand, the least important indicator of design adequacy of performance measurement system is DA1 (*performance measures are clear)* with a standardized regression weight of .339.

Since all of the indicators included in the revised measurement model are statistically significant at the .05 level and the goodness of fit indices demonstrated a great model fit, the measurement model of design adequacy of the performance measurement system was considered validated.

4.4.2 Institutionalization of Performance Measurement

The latent construct of institutionalization of performance measurement was composed of six indicators. Since no multicollinearity was detected, all of the variables were kept in the generic model and are represented in Figure11.
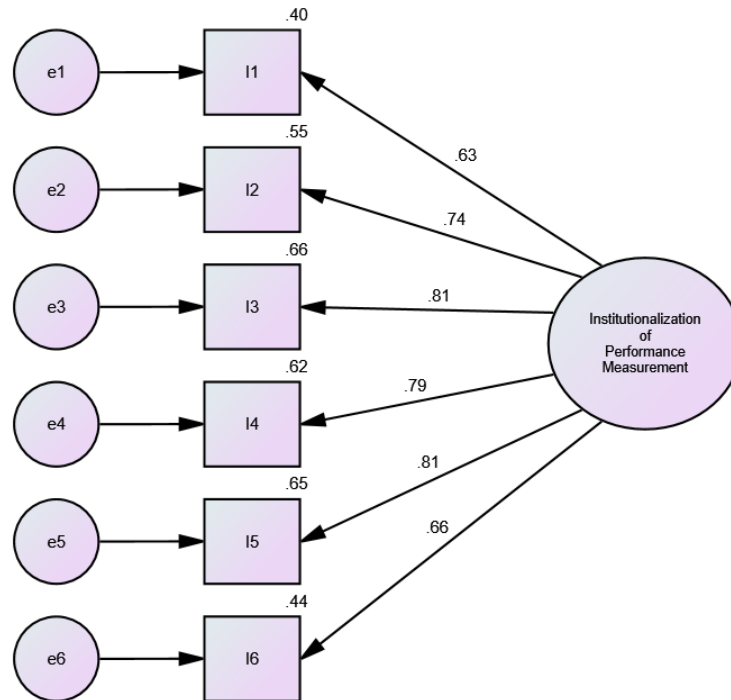

Figure 11: Generic Model of Institutionalization of Performance Measurement

The examination of the factor loading shows that all had critical ratios larger than 1.96 and were statistically significant at the .05 level. The examination of model fit statistics, however, showed that there was some room for improvement. Therefore, the modification indices were examined and model was revised. The revised model is shown in Figure 12.
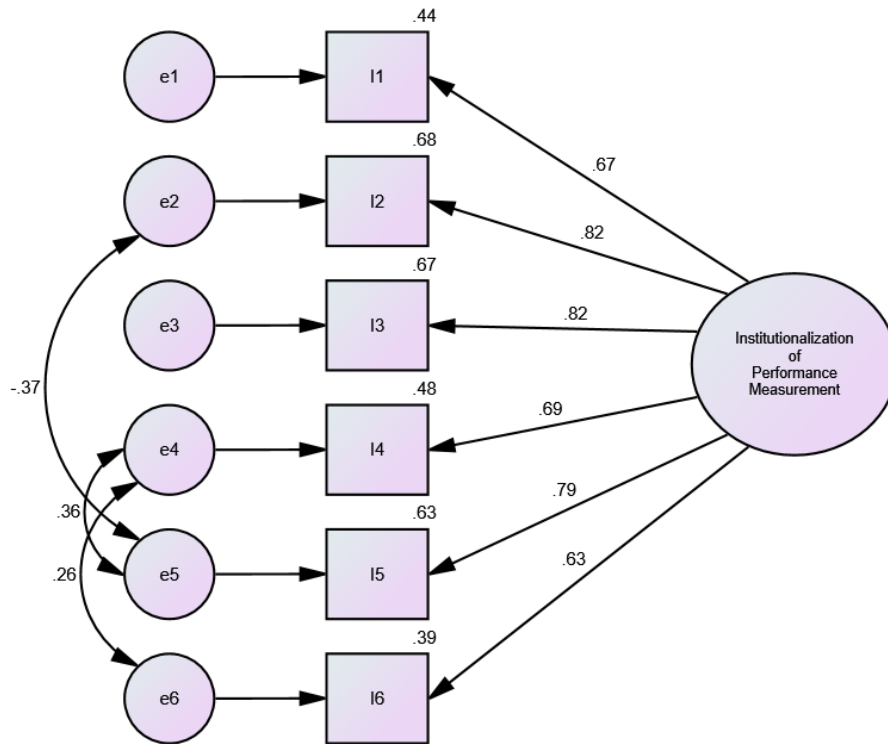
Figure 12: Revised Model of Institutionalization of Performance Measurement

The revised measurement model of Institutionalization of Performance Measurement

demonstrated that all of the indicators in the model were statistically significant at the .05 level.

In addition, the goodness of fit statistics indicated that the model was a great fit for the data.

Table 13: Parameter Estimates for Institutionalization of Performance Measurement

	Generic Model					Revised Model				
	USRW	SRW	S.E.	C.R.	P	USRW	SRW	S.E.	C.R.	P.
I6	1	.664				1	.626			
I5	1.068	.806	.14	7.609	***	1.108	.791	.163	6.784	***
I4	1.105	.787	.148	7.47	***	1.022	.69	.14	7.273	***
I3	1.034	.814	.135	7.667	***	1.103	.819	.152	7.264	***
I2	.978	.743	.137	7.132	***	1.15	.824	.163	7.049	***
I1	.792	.629	.128	6.18	***	.89	.666	.143	6.242	***
e5<-->e4						.211	.357	.076	2.764	.006
e6<-->e4						.226	.262	.081	2.792	.005
e5<-->e2						-.163	-.372	.056	-2.885	.004

Note: URW = Unstandardized Regression Weight; SRW = Standardized Regression Weight; SE = Standard Error;
CR = Critical Ratio; *** = Correlation is significant at .01 level

Table 13 shows the parameter estimates for the generic and revised model, demonstrating that all of the indicators in the revised model had standardized regression coefficients larger than .60. However, the most important indicator for institutionalization of performance measurement was *discussion of FBC performance data at other departmental meetings* (I2) with a standardized regression coefficient of .824. The least important indicator in the model, but still very important with a standardized regression coefficient of .626 was *distribution of FBC performance data within the department (I6).*

Table 14: Goodness of Fit Statistics for Institutionalization of Performance Measurement

Fit Index	Criteria	Generic Model	Revised Model
Chi-Square (CMIN)	low	37.230	7.846
Chi-Square related p value	≥.05	.000	.250
Degrees of Freedom (df)	>0	9	6
Likelihood ratio (CMIN/df)	≤4	4.137	1.308
Goodness of Fit Index (GFI)	≥.90	.900	.979
Adjusted GFI (AGFI)	≥..90	.767	.926
Root Mean Square Error of Approximation (RMSEA)	≤.08	.160	.050

Since all indicators included in the measurement model of institutionalization of performance measurement are statistically significant at the .05 level and the goodness of fit statistics indicated an excellent fit, the measurement model was validated.

4.4.3   Organizational Support

The construct of organizational support had four indicators and with no unsatisfactory multicollinearity detected among them. The measurement model was tested using CFA and is presented in Figure 13.
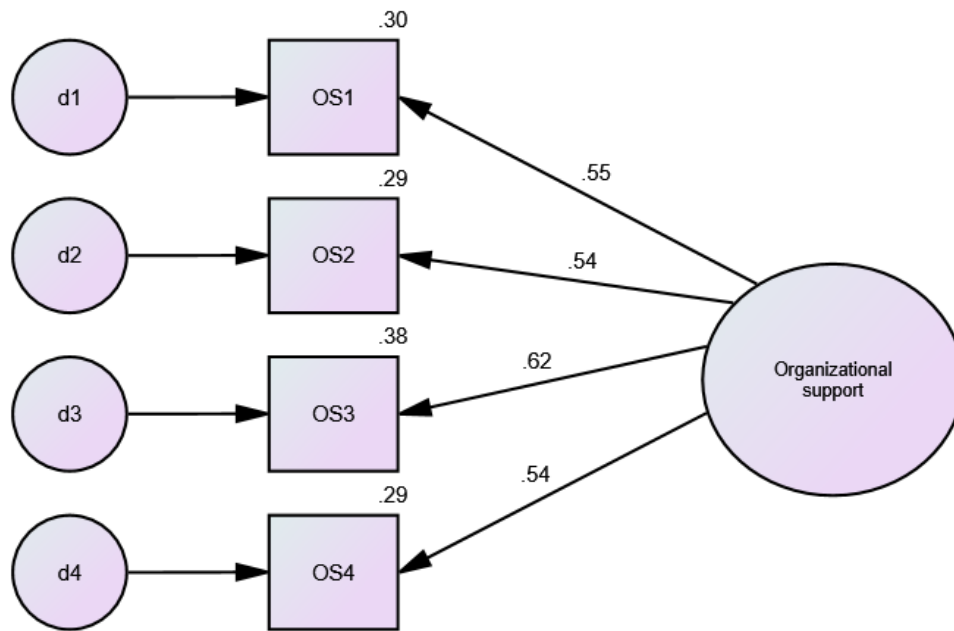
Figure 13: Generic Model of Organizational Support

The factor loadings included in the model had critical ratios larger than 1.96 and were

statistically significant at the .05 level. Moreover, the model fit statistics demonstrated a very

close fit and the examination of the modification indices revealed the model could not be

significantly improved.

Table 15: Parameter Estimates for Organizational Support

	Generic Model				
	USRW	SRW	S.E.	C.R.	P
OS2	1	.536			
OS1	.958	.548	.267	3.587	***
OS3	.969	.616	.262	3.695	***
OS4	.843	.536	.237	3.553	***

Note: URW = Unstandardized Regression Weight; SRW = Standardized Regression Weight; SE = Standard Error;
CR = Critical Ratio; *** = Correlation is significant at .01 level

With regards to the relative importance of the indicators included in the model, the most reliable predictor of organizational support was OS3 (*adequate resources*) with a standardized regression weight of .616, while OS2 (*there is someone that can assist me with any performance related issues/questions*), OS1 (*department encouragement use FBC performance data*) and OS4 (*flexible decision-making*) had similar importance with standardized regression coefficients of approximately .50.

Table 16: Goodness of Fit Statistics for Organizational Support

Fit Index	Criteria	Generic Model
Chi-Square (CMIN)	low	7.762
Chi-Square related p value	≥.05	.021
Degrees of Freedom (df)	>0	2
Likelihood ratio (CMIN/df)	≤4	3.881
Goodness of Fit Index (GFI)	≥.90	.973
Adjusted GFI (AGFI)	≥.90	.863
Root Mean Square Error of Approximation (RMSEA)	≤.08	.153

Since all of the indicators included in the measurement model of organizational support achieved statistical significance at the .05 level, the modification indices demonstrated a relatively good fit, and additional model improvement were not feasible, the measurement model of organizational support was considered validated.

4.4.4   Individual Factors

The measurement model of individual factors had six indicators. The model was examined using CFA and is presented in Figure 14.
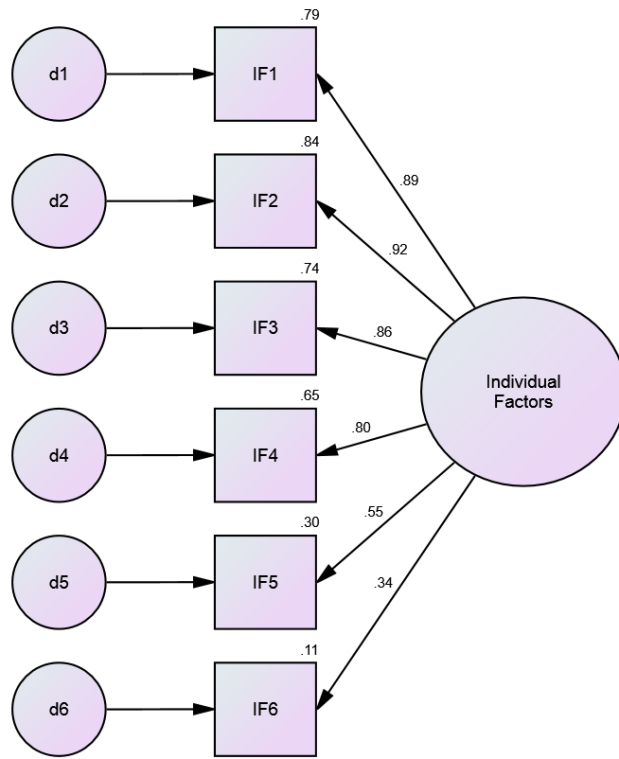
90

Figure 14: Generic Model of Individual Factors

The examination of the standardized regression coefficient revealed that all indicators in the model had critical ratios larger than 1.96 and were statistically significant at the .05 level. In addition, examination of the goodness of fit statistic (Table 18) revealed an excellent fit to the data.

Table 17: Parameter Estimates for Individual Factors

	USRW	SRW	S.E.	C.R.	P
IF6	1.000	.336			
IF5	1.986	.551	.590	3.365	***
IF4	2.403	.804	.650	3.697	***
IF3	2.939	.862	.785	3.741	***
IF2	2.601	.917	.689	3.775	***
IF1	2.736	.887	.728	3.758	***

Note: URW = Unstandardized Regression Weight; SRW = Standardized Regression Weight;
SE = Standard Error; CR = Critical Ratio; *** = Correlation is significant at .01 level

Regarding the relative importance of the predictors, the most important indicator was IF2 (*necessary skills*) with standardized regression weight of .917 and least important was IF6 (*public service motivation*) with a standardized regression weight of .336.

Table 18: Goodness of Fit Statistics for Individual Factors

Fit Index	Criteria	Generic Model
Chi-Square (CMIN)	low	7.132
Chi-Square related p value	≥.05	.623
Degrees of Freedom (df)	>0	9
Likelihood ratio (CMIN/df)	≤4	.792
Goodness of Fit Index (GFI)	≥.90	.982
Adjusted GFI (AGFI)	≥..90	.957
Root Mean Square Error of Approximation (RMSEA)	≤.08	.000

Since all of the indicators included in the model were statistically significant at the .05 level, and the goodness of fit was excellent, there was no need to revise this measurement model and the generic model was considered validated.

4.4.5   Use of Performance Information

The construct of use of performance information was initially composed of 10 indicators. However, after conducting a multicollinearity analysis, two indicators, USE2 (*decision-making*) and USE8 (*reporting to elected officials*), were removed from the model. Moreover, in order to simplify the model and ensure uniformity across the indicators, two additional indicators were excluded. USE6 (*my department uses FBC performance data in making personnel decisions*) and USE9 (*my department uses FBC performance data in reporting my service area performance to elected officials*) were excluded from the model due to the perspective of analysis. In particular, they asked the respondents on their department practices rather than their own. As all other questions included in the model asked the respondent about their personal

experiences, the two indicators were removed. The measurement model of use of performance

information was now composed of six indicators. The generic model of use of performance

information was tested with the use of CFA and is presented in Figure 15.
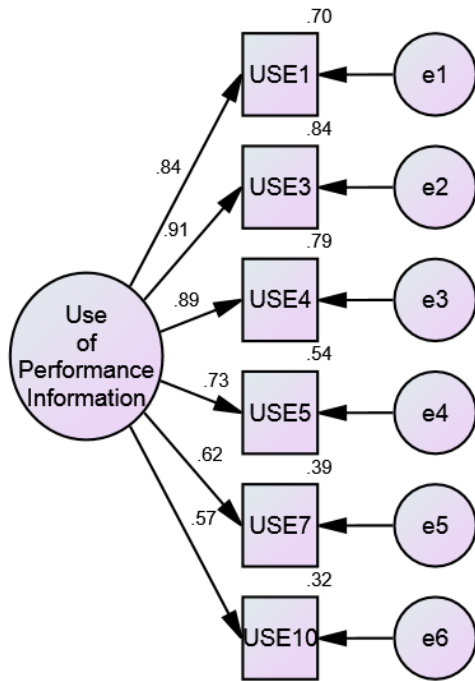

Figure 15: Generic Model of Use of Performance Information

Examination of the factor loadings showed that all of the indicators were statistically

significant at the .05 level and had values larger than 1.96. However, the goodness of fit statistics

showed room for improvement. The revised model of use of performance information is shown
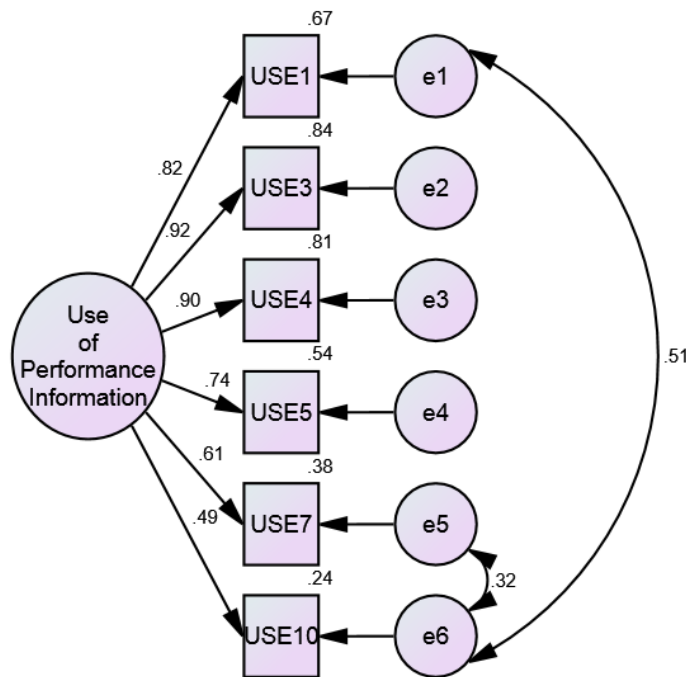
in Figure 16.

Figure 16: Revised Model of Use of Performance Information

The factor loadings of the revised model for use of performance information reveal that

all were statistically significant at the .05 level and the goodness of fit index showed a great fit.

Table 19: Parameters Estimates for Use of Performance Information

	Generic Model					Revised Model				
	USRW	SRW	S.E.	C.R.	P	USRW	SRW	S.E.	C.R.	P
USE1	1	.838				1	.817			
USE3	1.033	.914	.079	13.044	***	1.06	.916	.085	12.448	***
USE4	1.038	.886	.083	12.453	***	1.082	.901	.089	12.193	***
USE5	.699	.733	.075	9.33	***	.721	.737	.079	9.161	***
USE7	.676	.625	.09	7.534	***	.682	.615	.094	7.261	***
USE10	.725	.57	.108	6.725	***	.646	.492	.093	6.918	***
e1<-->e6						.335	.509	.07	4.801	***
e5<-->e6						.258	.317	.069	3.744	***

Note: URW = Unstandardized Regression Weight; SRW = Standardized Regression Weight; SE = Standard Error;
CR = Critical Ratio; *** = Correlation is significant at .01 level

The estimates show that the highest predictors of use of performance information are

USE3 (*planning*) and USE4 (*budgeting*) with standardized regression coefficient of .916 and

.901 respectively. The lowest predictor is USE10 (*benchmarking*) with standardized regression coefficient is .492.

Table 20: Goodness of Fit Statistics for Use of Performance Information

Fit Index	Criteria	Generic Model	Revised Model
Chi-Square (CMIN)	low	45.564	3.745
Chi-Square related p value	≥.05	.000	.809
Degrees of Freedom (df)	>0	9	7
Likelihood ratio (CMIN/df)	≤4	5.063	.535
Goodness of Fit Index (GFI)	≥.90	.904	.990
Adjusted GFI (AGFI)	≥..90	.775	.970
Root Mean Square Error of Approximation (RMSEA)	≤.08	.182	.000

Since all indicators in the measurement model were statistically significant at the .05 level and the model fit indices showed a great fit, the measurement model for use of performance information was validated and adequate for the covariance structural model.

4.5   Reliability Analysis

While Confirmatory Factor Analysis is crucial for the validation of the measurement models, it is equally important to examine reliability. As this study does not use standardized scales, the pressure is even greater. Reliability of measurement examines whether the measures produce consistent results. The most common test to examine reliability is the Cronbach's alpha coefficient where a value above .70 is considered acceptable (Pallant, 2013).

The Cronbach's alpha coefficient was calculated for all generic and revised models. Table 21 shows that with the exception of Organizational Support (α score of .641), all other measurement models met the threshold of a Cronbach's alpha score above .70. In particular, the measurement model for use of performance information had the highest α score of .892 followed

by institutionalization of performance measurement with an α of .877, individual factors with

.861, and design adequacy of the performance measurement system with .782.

Table 21 Cronbach's Alpha Values for the Measurement Models

Latent Construct	Number of Items		Cronbach's Alpha (α)	
	Before	After	Before	After
Design adequacy of the performance measurement system	7	6	.777	.782
Institutionalization of performance measurement	6	6	.877	.877
Organizational support	4	4	.641	.641
Individual factors	6	6	.861	.861
Use of performance information	10	6	.933	.892

Although organizational support did not achieve the minimum threshold of .70, it was

sufficiently close. In addition, Pallant (2013) warns that scales with fewer than ten items will

commonly produce lower Cronbach values. Therefore, the organizational supports Cronbach

alpha coefficient of .641 was deemed acceptable in this study.

4.6   Structural Equation Modeling

After all measurement models were validated with the use of CFA and their reliability

was confirmed with use of Cronbach's alpha, they were combined in a covariance structural

model. Examination of the covariance structural model was of key interest of this study as it

provides answers on the tested hypotheses. The generic model is represented in Figure 17.

Figure 17: Generic Covariance Structure Model

The first step in SEM is to examine the statistical significance of the parameter estimates.

Table 23 shows that two latent variables did not achieve statistical significance. In particular,

organizational support did not have a statically significant impact on the use of performance

information (p=.166). Likewise, individual factors also did not have a statistically significant

influence on use of performance measurement (p=.936). As these variables did not achieve

statistical significance at the .05 level, the measurement models are removed from the covariance

structural model. All other measurement models achieved statistical significance at the .05 level

and were were kept in the covariance structure model. The revised model was reexamined and is

presented in Figure 18.
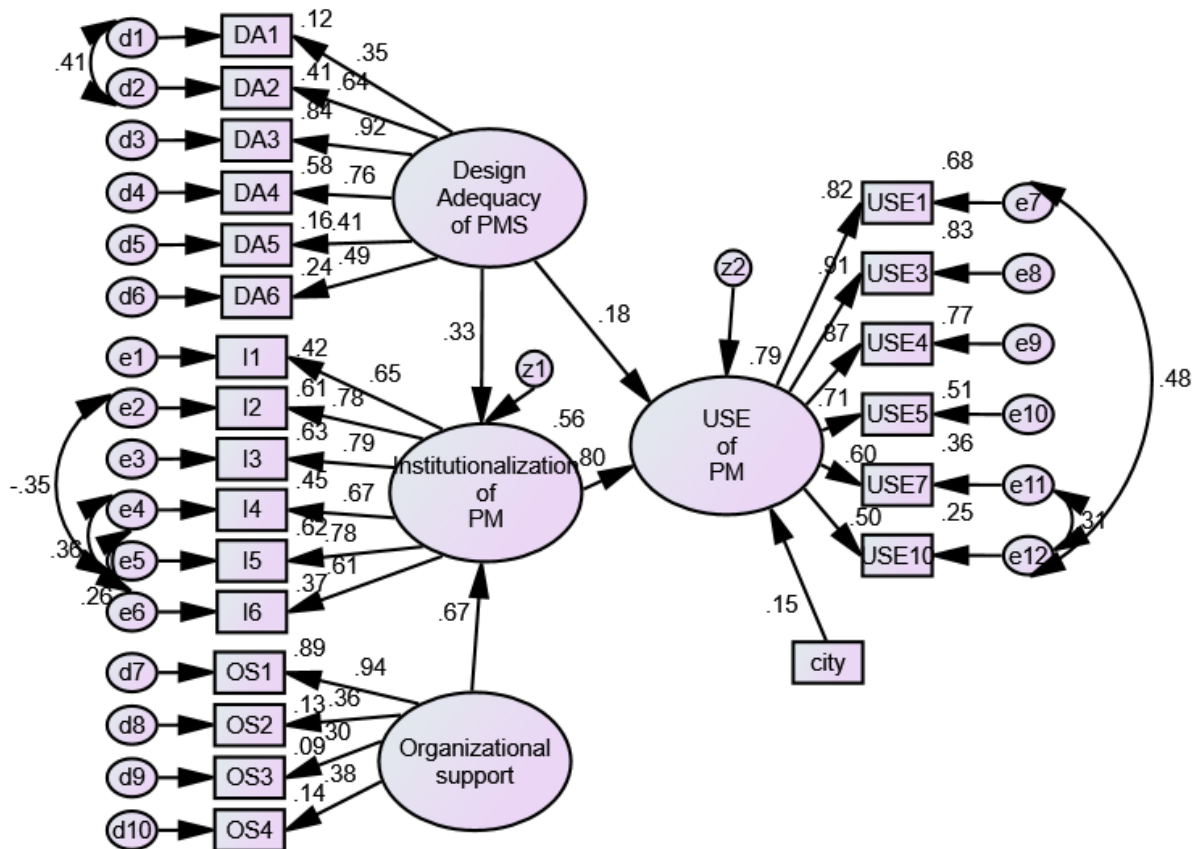
Figure 18: Revised Covariance Structure Model

Examination of the parameter estimates indicated that variables included in the revised

covariance structural model had critical values larger than 1.96 and were statistically significant

at the .05 level. In the next step, Table 22, the goodness of fit statistics are presented.   Although

the fit indices do not suggest an excellent fit, they show an approximately good fit. The

modification indices were examined for model improvement but no significant model

improvement was possible. The Fit indices showed that the CMIN/df ratio was 1.526, which is below the accepted threshold of 4, and the RMSEA score was .065 which is below the accepted criterion of .08. Although the GFI and AGFI did not achieve the threshold of .90, receiving .819 and .773 respectively, they were considered adequate to indicate approximate model fit. Two other indices that may also be used for examination of the model fit are TLI and CFI. These two indices should also achieve a threshold of .90. In this study the threshold was met, supporting the model has approximately good fit.

Table 22: Goodness of Fit Statistics for the Covariance Structure Model

Fit Index	Criteria	Generic Model	Revised Model
Chi-Square (CMIN)	low	611.657	335.658
Chi-Square related p value	≥.05	.000	.000
Degrees of Freedom (df)	>0	365	220
Likelihood ratio (CMIN/df)	≤4	1.676	1.526
Goodness of Fit Index (GFI)	≥.90	.761	.819
Adjusted GFI (AGFI)	≥..90	.715	.773
Root Mean Square Error of Approximation (RMSEA)	≤.08	.074	.065
Tucker Lewis Index (TLI)	≥.90	.862	.907
Comparative Fit Index (CFI)	≥.90	.876	.919

After the model had been validated, it was important to examine the relative importance of each of the predictors. Table 23 shows the standardized regression weights for each of the predictors. The highest predictor for the use of performance information was the institutionalization of the performance measurement with a standardized beta of .800 Design adequacy also had an important, albeit significantly lower, influence on the use of performance information, with a standardized beta coefficient of .178. Organizational support did not have a direct impact on the use of performance information, however through the institutionalization of performance measurement had an indirect impact with a standardized regression weight of .669.

Controlling for the type of government, this research found that cities (standardized regression weight of .148) use performance information more than counties. Equally important, the model accounted for 79% ($R^2 = .79$) of the variance in the use of performance information. Bearing in mind that the aim of this study was to provide a holistic examination of the predictors of the use of performance information, this was a substantial finding.

Table 23: Parameter Estimates for the Covariance Structure Model

			Generic Model					Revised Model				
			USRW	SRW	S.E.	C.R.	P	USRW	SRW	S.E.	C.R.	P
Institutionalization_of_PM	<---	Design_adequacy_of_PM	.757	.337	.273	2.774	.006	.747	.333	.269	2.775	.006
Institutionalization_of_PM	<---	Organizational_support	1.185	.651	.353	3.353	***	1.221	.669	.360	3.388	***
USE_of_PM	<---	Design_adequacy_of_PM	.520	.203	.222	2.336	.020	.458	.178	.202	2.270	.023
USE_of_PM	<---	Institutionalization_of_PM	.788	.692	.156	5.043	***	.917	.800	.141	6.484	***
USE_of_PM	<---	Individual_Factors	-.014	-.005	.173	-.080	.936					
USE_of_PM	<---	City	.248	.142	.096	2.582	.010	.259	.148	.097	2.675	.007
USE_of_PM	<---	Organizational_support	.286	.138	.207	1.384	.166					
DA6	<---	Design_adequacy_of_PM	1.370	.488	.421	3.256	.001	1.370	.487	.421	3.255	.001
DA5	<---	Design_adequacy_of_PM	1.199	.404	.401	2.991	.003	1.202	.405	.401	2.995	.003
DA4	<---	Design_adequacy_of_PM	2.295	.761	.615	3.731	***	2.293	.759	.615	3.731	***
DA3	<---	Design_adequacy_of_PM	2.511	.915	.660	3.803	***	2.521	.918	.663	3.804	***
DA2	<---	Design_adequacy_of_PM	1.558	.644	.362	4.301	***	1.558	.644	.362	4.302	***
DA1	<---	Design_adequacy_of_PM	1.000	.354				1.000	.353			
I6	<---	Institutionalization_of_PM	1.000	.610				1.000	.611			
I5	<---	Institutionalization_of_PM	1.119	.790	.163	6.860	***	1.111	.785	.162	6.856	***
I4	<---	Institutionalization_of_PM	1.017	.672	.143	7.109	***	1.010	.668	.142	7.097	***
I3	<---	Institutionalization_of_PM	1.081	.795	.154	6.997	***	1.076	.792	.154	6.982	***
I2	<---	Institutionalization_of_PM	1.112	.789	.162	6.870	***	1.102	.782	.161	6.853	***
I1	<---	Institutionalization_of_PM	.884	.648	.147	6.029	***	.885	.649	.147	6.040	***
OS2	<---	Organizational_support	1.000	.359				1.000	.358			
OS1	<---	Organizational_support	2.447	.938	.697	3.513	***	2.469	.944	.708	3.488	***
OS3	<---	Organizational_support	.702	.299	.276	2.547	.011	.696	.295	.274	2.536	.011
OS4	<---	Organizational_support	.904	.385	.305	2.962	.003	.895	.380	.303	2.952	.003
IF6	<---	Individual_Factors	1.000	.336								
IF5	<---	Individual_Factors	1.986	.551	.590	3.365	***					
IF4	<---	Individual_Factors	2.403	.804	.650	3.697	***					

			Generic Model					Revised Model				
			USRW	SRW	S.E.	C.R.	P	USRW	SRW	S.E.	C.R.	P
IF3	<---	Individual_Factors	2.939	.862	.785	3.741	***					
IF2	<---	Individual_Factors	2.602	.917	.689	3.775	***					
IF1	<---	Individual_Factors	2.736	.887	.728	3.758	***					
USE1	<---	USE_of_PM	1.000	.821				1.000	.824			
USE3	<---	USE_of_PM	1.039	.909	.083	12.548	***	1.035	.908	.082	12.632	***
USE4	<---	USE_of_PM	1.039	.874	.088	11.822	***	1.037	.875	.087	11.922	***
USE5	<---	USE_of_PM	.698	.710	.079	8.785	***	.697	.712	.079	8.850	***
USE7	<---	USE_of_PM	.677	.602	.095	7.123	***	.675	.603	.094	7.149	***
USE10	<---	USE_of_PM	.676	.502	.096	7.004	***	.675	.504	.096	7.041	***
e7	<-->	e12	.293	.476	.064	4.552	***	.291	.476	.064	4.539	***
e11	<-->	e12	.244	.307	.068	3.586	***	.245	.308	.068	3.590	***
d2	<-->	d1	.232	.407	.059	3.904	***	.232	.407	.059	3.911	***
e5	<-->	e2	-.167	-.379	.047	-3.515	***	-.158	-.349	.047	-3.372	***
e5	<-->	e4	.199	.349	.066	3.026	.002	.210	.363	.065	3.225	.001
e6	<-->	e4	.224	.263	.078	2.884	.004	.224	.262	.077	2.898	.004

Note: USRW = Unstandardized Regression Weight; SRW = Standardized Regression Weight; SE = Standard Error; CR = Critical Ratio; *** = Correlation is significant at .01 level

4.7 Hypotheses Testing

The aim of this study is to examine the predictors for the use of FBC performance information among public administrators. Accordingly, the study tested five hypotheses. The sections below discuss each of the hypotheses tested and the study results.

The first hypothesis tested is:

H1: Design adequacy of the performance measurement system is positively associated with is the use of performance information.

This first research hypothesis of the study was supported by the data. The results of the analysis of the covariance structural model showed a statistically significant positive association (β = .178 and p-value = .023) between design adequacy of performance measurement system and the use of performance information. The unstandardized regression coefficient of design adequacy indicated that one unit increase of design adequacy would lead to .458 unit of increase in the use of performance information. Therefore, this hypothesis was supported.

H2: Institutionalization of the performance measurement is positively associated with the use of performance information.

This hypothesis was strongly supported by the data. The SEM analysis showed that the institutionalization of performance measurement had a positive and statistically significant (β = .800 with p-value <.000) influence on the use of performance information. The unstandardized regression coefficient of .917 indicates that one unit of increase in the institutionalization of performance measurement would lead to a .917 unit of increase in the use of performance information. Therefore, this hypothesis was supported.

H3: Organizational support is positively associated with the use of performance information.

This research hypothesis was not supported by the data. In particular, the results of the SEM analysis showed a positive (β = .138) but statistically insignificant influence (p-value .166) of organizational support on the use of performance information. Even though this hypothesis is not supported, it has to be noted that organizational support through the institutionalization of the performance measurement had an indirect influence on the use of performance information (β = .669).

H4: Individual factors are positively associated with the use of performance information.

The results of the SEM analysis did not support this hypothesis. In particular, the data indicated a negative (β = -.005, p-value .936) but statistically insignificant influence of individual factors on the use of performance information. Therefore, this hypothesis was not supported.

H5: External influences are positively associated with the use of performance information.

This hypothesis was not tested in the covariance structure model. After conducting the multicollinearity analysis, this construct was dropped from the generic covariance structural model. This combined with the urge to simplify the structural model and very limited empirical research on the construct's influence on the use of performance information, provided an additional rationale for its exclusion from the model.

The results of all tested hypotheses are presented in Table 24

Table 24: Results of Hypotheses Testing

Hypotheses	
H1: Design adequacy of the performance measurement system is positively associated with the use of performance information.	Supported
H2: Institutionalization of the performance measurement is positively associated with the use of performance information.	Supported
H3: Organizational support is positively associated with the use of performance information.	Not Supported
H4: Individual factors are positively associated with the use of performance information.	Not supported
H5: External influences are positively associated with the use of performance information.	Dropped

4.8   Summary of the Chapter

This chapter presented the results of the analysis. The chapter started with a discussion of the sample representativeness and response rate. Next, the descriptive statistics of all variables used in the study were presented followed by multicollinearity and normality analyses. Subsequently, CFA indicated that all measurement models were successfully validated and combined in a covariance structure model. SEM was used for the analysis of the covariance structure model for the use of performance information where two hypotheses were supported and two were not. In particular, institutionalization of performance measurement and the design adequacy of the performance measurement system had positive influences on the use of performance information. Organizational support had an indirect impact on the use of performance information while individual factors were not associated with the use of performance information. The model accounted for 79% of the variance in the use of performance information. The next chapter discusses the theoretical, methodological and practical implications of this study.

CHAPTER 5: CONCLUSION AND IMPLICATIONS

This chapter beings with a summary for each of the research questions, followed by a discussion of theoretical, methodological and practical implications. Lastly, the chapter addresses the limitations of the study and makes recommendations for future research.

5.1 Summary

5.1.1 RQ1: To what extent and in what capacity do local government administrators use performance information?

The first research question of the study aims to discover the extent and manner in which local administrators use FBC performance information. Examination of the descriptive statistic for the variable use of performance information (Table 10) shows that the FBC performance information is predominately used for benchmarking against other local governments where 50% of the respondents agree or strongly agree that they use FBC data for this purpose. The second-highest use of FBC performance data is for evaluation purposes where 43.3% of the respondents agreed or strongly agreed that they used the FBC data for evaluation. Approximately 30% of the respondents reported that they used the FBC data for the other purposes such as: decision-making (29.8%), planning (31.4%), budgeting (33%), reporting to public (29.8%), and reporting to elected officials (34.6%). The lowest use of FBC performance information was for making personnel decisions by public administrators (12.9%). However, should be noted that departments have showed a higher, where 40.4% of FBC performance data was used to make personnel decisions.

What is striking but not surprising is that approximately 30% of the respondents neither agreed nor disagreed with the use of performance data. This finding confirms that public

administrators are not always aware how they can use the FBC data, or whether it has been used. This coupled with one third of respondents who do not use the FBC performance data makes the majority of public administrators non-users. This lack of use confirms the findings of many researchers (Ammons & Rivenbark, 2008; Askim, 2007; de Lancer Julnes & Holzer, 2001; Van de Walle & van Dooren, 2010; Yetano, 2013).

5.1.2   RQ2: What are the predictors for the use of performance information among local government administrators? What factors facilitate and hinder the use of performance information?

The second research question aimed to discover the predictors of the use of performance information among local government administrators. The results of the structural equation analysis revealed that only two out of five constructs influenced the use of performance information. In particular, the most important predictor positively influencing the use of performance information was the institutionalization of performance measurement. The second factor positively influencing the use of FBC performance information was the design adequacy of the performance measurement system. Organizational support had only an indirect influence on the use of performance information while individual factors were not found to be associated with the use of performance information.

5.1.3   RQ:3Whether and to what extent does the design adequacy of PMS, institutionalization of PM, organizational support, individual factors and external influences impact the use of performance information among local government administrators?

In order to answer the third research question, five hypotheses were generated. Out of the five hypotheses, two were supported, two were not supported and one was dropped from analysis. The most important predictor for the use of performance information was the

institutionalization of the performance measurement with a positive, statistically significant (β = .800 with p-value <.000) impact. This is in line with the findings of Moynihan and Landuyt (2009), who concluded that learning forums have the highest influence on the use of performance information. In addition, this finding also confirms the findings of Scheps (2000), who argued that performance data should be discussed, or there should be meetings (de Haven-Smith and Jenne II, 2006; Edwards & Thomas, 2005) dedicated to performance data. Design adequacy also had a significant, positive impact (β = .178 and p-value = .023) on the use of performance information. This is in line with the findings of Eliuz, Kapucu, Ustun, & Demirhan, (2017) who found that the "quality of performance measures is positively associated with the effectiveness of performance measurement systems" (2017, p.337). Moreover, this is in conformity with Van Dooren, Bouckaert, & Halligan (2010) who argue that the quality of performance information influences its use.

Organizational support and individual factors, on the other hand, did not have a statistically significant association with the use of performance information. While Moynihan & Pandey, (2010) argue that organizational factors with top management commitment, developmental culture, and flexibility are important for the use of performance information, this study found only an indirect impact of organizational support on the use of performance data. With regards to individual factors and the inconclusive evidence on the role of one's education on the use of performance information, this study also found an insignificant role. This is contrary to the findings of Cavalluzzo and Ittner (2004), who concluded that training on performance measurement and management is positively associated with the greater use of performance information. One alternative explanation for the lack of influence for individual factors on the use of performance information is that regardless of the skills, training, education

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and experience, a person may not use the performance information unless there are structures

and processes in place that enable he or she to do so.

Regarding external influences, the construct was removed from the model. This was done

for the following reasons. First, there was multicolloniary between two of the three indicators

included in the model. However, if one of them were removed, then the model would be under-

identified and the analysis cannot continue. In addition, there were only a couple of indicative

studies on the potential importance of external factors on the use of performance information.

Therefore, this construct was excluded from the model and the hypothesis was not tested.

5.2   Implications

5.2.1   Theoretical Implications

This study makes several major contributions to the literature and theory regarding the

use of performance information. First, this study examined the use of performance information

by frontline public administrators, practitioners who had been neglected in previous research.

While there are studies examining the use of performance information by public managers or

elected officials, very few studies focus on the practitioners. Second, while focusing on the

frontline public administrators, this study revealed that individual factors are not as important as

some may believe. One's education, skills, and training were not found to be important

predictors for the use of performance information. Rather, the most important predictor for the

use of performance information was the institutionalization of performance measurement

followed by the design adequacy of the performance measurement system. Although many

studies or conceptual pieces stress the importance of collecting the right data – also confirmed in

this research – what was more important is the creation of processes within the organization that stipulate its use.

The third contribution of this study is the examination of a broad range of uses of performance information. The study did not focus on the use of performance information only in budgeting or decision-making, rather, it also included personnel decisions and reporting among several others. Fourth, rather than focusing on a couple of predictors, this study provided a holistic examination of all potentially relevant predictors and contributed towards model building for the use of performance information. As the results of the SEM analysis indicated a good model fit, this research contributed towards model building and the greater understanding of the use of performance information. Moreover, this research was framed in the Straussian perspective of grounded theory that allowed flexibility accompanied with directive questioning. Acknowledging the absence of preeminent theory for performance information use, this research contributed towards formulating a theory for the use of performance information. With the previous efforts made by Moynihan (2008) and O'Toole & Meier (2015), this study allows for their further assessment of that research.

5.2.2   Methodological Implications

Most of the literature revolving around the use of performance information has been either anecdotally focused on a handful of success stories or relied on regression analysis. Notwithstanding the importance of those methodologies, they are limited in grasping the wide-ranging factors associated with the use of performance information. The use of SEM in this study made for other contributions. First, through conducting CFA, this study was able to validate measurement models. Bearing in mind that the research did not use pre-determined measurement

scales, a crucial step in the process was this validation. As the operationalization of the measurement model is a crucial step and if miss-specified the whole research endeavors may be in vain, this study managed to produce valid and reliable measurement. The only measurement model that may be reconsidered is that of organizational support. This measurement model, although valid, was not as reliable allowing for future scholars to reexamine an organizational support construct.

In addition to the validation of the measurement models, another methodological advantage was the validation of the covariance structure model. In contrast to other studies that focus on a handful of indicators and were able to explain only slight variations in the use of performance information, this model used in this study accounted for 79% of the variance for the use of performance information. The use of SEM allowed a more holistic and detailed approach and hence, contributed to the better understating of how and why performance information is used.

5.2.3   Policy and Practical Implications for Local Governments

This research was undertaken with the idea that it will produce practical recommendations for an FBC member government to apply in practice to stimulate the use of performance information. This research successfully validated a model that accounted for 79% of the variance in the use of performance information. Interestingly, the study found that the biggest contributor towards the use of performance information was institutionalization of performance measurement. This is an important finding for the following reasons. In contrast to other factors such as organizational support, external influence or individual factors that are beyond the control of the public manager, the institutionalization of performance measurement is

in their control. Since this research confirmed that institutionalization is the most important predictor, governments should focus their efforts towards creating forums, routines and procedures which mandate the use of FBC performance data. Through the creation of procedures where the performance data is routinely used, local governments are capable of stimulating its use. In addition to the institutionalization of performance measurement, the design adequacy of the performance measurement system is also an important predictor for the use of performance information. Therefore, governments should focus their efforts on gathering performance data on issues that matter to them and their needs. Only through focusing on measures that they find important may local government administrators likely increase their actual use.

Importantly, organizational support has an indirect impact on the use of performance information, and if ensured, it may facilitate the institutionalization of the performance measurement. While governments may want to ensure that there is organizational support, often times this is beyond their control. Therefore, while local governments should strive to receive organizational support for the use of performance information, their main efforts should be focused towards the creation of an institutionalized processes that require the use of performance data.

Contrary to the wide spread belief that public administrators do not have sufficient knowledge, skills, and training on how to use performance information, this research did not find any association between individual factors and the use of performance information. Therefore, this research suggests that governments should not be preoccupied with the skills public administrators need to use the performance data. Instead, managers should put an emphasis on creating a performance information infrastructure accessible to all.

5.3   <u>Limitations</u>

Notwithstanding the theoretical and methodological contributions of study and its practical implications, this study has some limitations. First, the study did not achieve the ubiquitous sample size of 200 respondents suggested for an SEM analysis. Although the analysis can be conducted with a smaller sample size (Sideridis, Simos, Papanicolaou, & Fletcher, 2014; Wolf, Harrington, Clark, & Miller, 2013) and the proposed model was simplified, future research should aim to validate the model with a larger sample. Second, the survey instrument asked respondents to rank their level of agreement with the use of the 6-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, strongly agree and do not know. In order to ensure valid treatment of the response 'don't know', this response was recoded with a response of 'neither agree nor disagree'. The reasons behind this decision are twofold. All respondents were carefully selected to participate in this research and asked about their own experiences; hence, they would know if they used the FBC performance data. Although the treatment of the response 'do not know' as 'neither agree nor disagree' is not uncommon, future survey instruments should avoid a post-fact merge of response variables. The third limitation of this research is its use of self-reported data, which may cause common source bias. Meier & O'Toole (2013) found that when relying on the responses provided by mangers, common source bias is a serious challenge. On the other hand, Conway & Lance (2010) argue that not all self-reported data is biased. In order to exclude a substantial method effect, Conway & Lance (2010) recommend researchers demonstrate the construct validity of the measures. Acknowledging that there are not alternative methods for gathering the data needed for this analysis, this study confirmed the validity and reliability of all measurement models used in analysis. Ultimately, one should hope to use various sources for the independent and dependent

variables, and if accessible, future studies should aim to use objective indicators on the use of performance information.

5.4   <u>Future Research</u>

This study created and tested a model of the use of performance data among public administrators in Florida. This model is the first of its kind and has not been tested before. Although the analysis showed an acceptable validity and reliability for the model, it is crucial this model be replicated. This can be done with selecting a regional set of governments or even a nationally representative sample. In addition, this study relied on the FBC member governments and their use of FBC performance data. As such the findings from this research cannot be generalized to other Florida governments (non-FBC members) and certainly not to other parts of the country. Therefore, it is recommended that future research test the model in various regions of the country or in a nationwide study.

Lastly, future research should examine the link between the use of performance information and the actual performance. Even though the use of performance information is a very important milestone for each government operation, it is not the ultimate goal. As the overarching goal is the fostering of the improvement of service provision, future studies should examine the link between the use of performance data and actual government performance.

APPENDIX A: SURVEY QUESTIONNAIRE FOR PUBLIC ADMINISTRATORS

SURVEY QUESTIONNAIRE

1. For what type of government do you work?
   - County
   - City
   - Other

2. What service area do you primarily represent? *(Please check only one service area).*
   - Animal Services (AS)
   - Building Development and Review (BD)
   - Code Enforcement (CE)
   - Civic Engagement (CV)
   - Environmental Management (EM)
   - Fire Rescue (FR)
   - Fleet Management (EM)
   - Human Resources (HR)
   - Information Technology (IT)
   - Parks and Recreation (PR)
   - Police (PO)
   - Purchasing (PU)
   - Risk Management (RM)
   - Road Repair (RR)
   - Solid Waste - Collection (SC)
   - Solid Waste - Disposal (SW)
   - Stormwater and Drainage Maintenance (SD)
   - Traffic Engineering (TE)
   - Water and Wastewater (WW)

3. Are you a Service Area Lead within the FBC?
   - Yes
   - No

4. How many employees are there in your department? *(Please provide an estimate).*

   _____

5. How many data collection cycles (years) have you been involved in collecting and reporting performance data to the FBC?
   - One cycle (year)
   - 2-3 cycles (years)
   - 4-8 cycles (years)
   - More than 8 cycles (years)

6. Realizing that you report your performance data to the FBC only once a year, how often do you actually collect/measure your service area performance?

- o Daily
- o Monthly
- o Quarterly
- o Bi-annually
- o Annually
- o Other: *(please specify)*_____

7. Thinking only about the FBC and your involvement in collecting and reporting performance data to the FBC**,** please evaluate the following statements using a five point scale. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. The FBC performance measures for my service area are clear	o	o	o	o	o	o
ii. The FBC performance measures for my service area are appropriate	o	o	o	o	o	o
iii. The FBC performance measures for my service area meet my personal performance data needs	o	o	o	o	o	o
iv. The FBC performance measures for my service area are linked to my departmental targets/goals/priorities	o	o	o	o	o	o
v. The FBC performance data for my service area is easy to access	o	o	o	o	o	o
vi. The FBC performance data for my service area is timely	o	o	o	o	o	o
vii. The FBC performance measures for my service area require reasonable amount of my time for collecting and reporting performance data	o	o	o	o	o	o

8. Thinking only about how you utilize FBC performance data for your service area, please evaluate the following statements. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I attend special meetings within my local government where FBC performance data for my service area are discussed	○	○	○	○	○	○
ii. I discuss FBC performance data for my service area in my departmental meetings	○	○	○	○	○	○
iii. I use FBC performance data for my service area in my internal communications	○	○	○	○	○	○
iv. I conduct analysis of FBC performance data for my service area	○	○	○	○	○	○
v. I use FBC performance data in my planning efforts	○	○	○	○	○	○
vi. I distribute FBC performance data to colleagues in my department	○	○	○	○	○	○

9. Thinking only about the performance data for your service area that you collect and report to the FBC and the departmental support that you receive for your use of that data, please evaluate the following statements. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. My department encourages me to use FBC performance data to make decisions related to my job	○	○	○	○	○	○
ii. My department has somebody that I can turn to that can assist me with any performance related issues/questions that I have	○	○	○	○	○	○
iii. My department provides me with the resources that I need to measure and analyze FBC performance data	○	○	○	○	○	○

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
iv. My department supports flexible decision-making where I am empowered to make decisions on a basis of performance data	○	○	○	○	○	○

10. Thinking only about FBC performance data, evaluate your own readiness to use the FBC performance data in your job. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I have adequate technical knowledge to use FBC performance data	○	○	○	○	○	○
ii. I have the necessary skills to interpret FBC performance data	○	○	○	○	○	○
iii. I have sufficient training on how to use FBC performance data	○	○	○	○	○	○
iv. I have sufficient work experience to use FBC performance data	○	○	○	○	○	○
v. I support the use of FBC performance data in my departmental decision-making	○	○	○	○	○	○
vi. In my daily work I am primarily driven to serve citizens and the public interest	○	○	○	○	○	○

11. Thinking only about the use of FBC performance data in your department, evaluate the following statements regarding the external influences over the use of performance data in your department. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I receive external encouragement (outside my local government) to use FBC performance data in my service area tasks	○	○	○	○	○	○
ii. I am concerned that the public can use FBC performance data against my service area	○	○	○	○	○	○

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
iii. I am concerned that media can use FBC performance data against my service area	○	○	○	○	○	○

12. Thinking only about the use of FBC performance data for your service area, evaluate the following statements regarding the various uses of the performance data in your department. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I use FBC performance data to evaluate my service area (detect deficiencies, define best practices, detect trends, etc.)	○	○	○	○	○	○
ii. I use FBC performance data in adopting new program approaches or changing work processes (decision-making) in my service area	○	○	○	○	○	○
iii. I use FBC performance data in planning my service area projects and improvements	○	○	○	○	○	○
iv. I use FBC performance data in departmental budgeting (decisions/requests)	○	○	○	○	○	○
v. I use FBC performance data in making personnel decisions (promotion, termination, new hire, setting job expectations)	○	○	○	○	○	○
vi. My department uses FBC performance data in making personnel decisions (promotion, termination, new hire, setting job expectations)	○	○	○	○	○	○
vii. I use FBC performance data in reporting my service area performance to the public	○	○	○	○	○	○
viii. I use FBC performance data in reporting my service area performance to elected officials	○	○	○	○	○	○
ix. My department uses FBC performance data in reporting my	○	○	○	○	○	○

service area performance to elected officials						
x. I use FBC performance data to benchmark against the same service area in other governments	○	○	○	○	○	○
xi. The use of FBC performance measurement has improved the performance of my service area	○	○	○	○	○	○

13. What actions could make FBC performance data for your service area more useful in your job? *(Check all responses that apply).*
    o More training on how to use FBC performance data in my job
    o More financial resources to measure and analyze performance
    o More staffing support to measure and analyze performance
    o Collect more performance measures
    o Collect fewer performance measures
    o Collect more relevant performance measures
    o Collect and report performance information to FBC more often
    o Other *(Please use the space provided below to explain)*

    _____
    _____
    _____
    _____
    _____
    _____

14. How often do you communicate with each of the following people *regarding the FBC performance measures and data for your service area*?

	Never	Once a year	2-3times a year	Every month	Weekly
i. FBC Primary Coordinator for my local government	○	○	○	○	○
ii. FBC Service Area Led for my service area	○	○	○	○	○
iii. FBC Executive Director	○	○	○	○	○

15. What are the primary purposes of your communication with: the FBC Primary Coordinator for your local government, FBC Service Area Lead and FBC Executive Director? *(Check all responses that apply).*

	FBC Primary Coordinator for my local government	FBC Service Lead for my service area	FBC Executive Director	Did not contact/not applicable
i. Request clarification of a FBC performance measure	○	○	○	○

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree
ii. Request clarification on FBC data input issues	○	○	○	○
iii. Submit the FBC performance data for my service area	○	○	○	○
iv. Request the FBC annual report	○	○	○	○
v. Discuss the performance of my service area	○	○	○	○

16. Thinking about your FBC membership, please evaluate the following statements. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. The FBC membership facilitates my communication about performance related issues with departments in other governments	○	○	○	○	○	○
ii. The FBC membership allows me to share my performance experiences with other governments	○	○	○	○	○	○
iii. The FBC membership allows me to receive information about other governments' experiences in performance improvement	○	○	○	○	○	○
iv. The FBC membership increases my knowledge on performance related issues	○	○	○	○	○	○
v. The FBC membership increases my networking opportunities	○	○	○	○	○	○

17. How would you describe your experiences in measuring performance and using FBC performance data in your job?

_____
_____
_____
_____

Finally, few demographic questions

18. What is your gender?
- ○ Male
- ○ Female

19. What is your educational level?
- o   High school/GED
- o   Some College
- o   Bachelor's Degree
- o   Graduate Degree
- o   Other *(please specify)*_____

20. Approximately, what is the estimated population of your city/county?

                         _____

Thank you for your time!

APPENDIX B: SURVEY QUESTIONNAIRE FOR PRIMARY COORDINATORS

SURVEY QUESTIONNAIRE

1. For what type of government do you work?

   o County
   o City
   o Other

2. Which of the following service areas does you jurisdiction participate in? *(Please check all that apply).*
   o Animal Services (AS)
   o Building Development and Review (BD)
   o Code Enforcement (CE)
   o Civic Engagement (CV)
   o Environmental Management (EM)
   o Fire Rescue (FR)
   o Fleet Management (EM)
   o Human Resources (HR)
   o Information Technology (IT)
   o Parks and Recreation (PR)
   o Police (PO)
   o Purchasing (PU)
   o Risk Management (RM)
   o Road Repair (RR)
   o Solid Waste - Collection (SC)
   o Solid Waste - Disposal (SW)
   o Stormwater and Drainage Maintenance (SD)
   o Traffic Engineering (TE)
   o Water and Wastewater (WW)

3. How many employees are there in your local government? *(Please provide an estimate).*

   _____

4. How many data collection cycles (years) have you been involved in collecting and reporting performance data to the FBC?
   o One cycle (year)
   o 2-3 cycles (years)
   o 4-8 cycles (years)
   o More than 8 cycles (years)

5. Realizing that you report your performance data to the FBC only once a year, how often do you actually collect/measure your local government performance?

- o Daily
- o Monthly
- o Quarterly
- o Bi-annually
- o Annually
- o Other: *(please specify)*_____

6. Thinking only about the FBC and your involvement in collecting and reporting performance data to the FBC, please evaluate the following statements using a five point scale. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. Overall the FBC performance measures are clear	○	○	○	○	○	○
ii. Overall the FBC performance measures are appropriate	○	○	○	○	○	○
iii. Overall the FBC performance measures meet my personal performance data needs	○	○	○	○	○	○
iv. Overall the FBC performance measures are linked to departmental targets/goals/priorities	○	○	○	○	○	○
v. Overall the FBC performance data is easy to access	○	○	○	○	○	○
vi. Overall the FBC performance data is timely	○	○	○	○	○	○
vii. Overall the FBC performance measures require reasonable amount of my time for collecting and reporting performance data	○	○	○	○	○	○

7. Thinking only about how you utilize FBC performance data, please evaluate the following statements. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I attend special meetings within my local government where FBC performance data are discussed	○	○	○	○	○	○
ii. I discuss FBC performance data in my departmental meetings	○	○	○	○	○	○
iii. I use FBC performance data in my internal communications	○	○	○	○	○	○
iv. I conduct analysis of FBC performance data	○	○	○	○	○	○
v. I use FBC performance data in my planning efforts	○	○	○	○	○	○
vi. I distribute FBC performance data to colleagues in my department	○	○	○	○	○	○

8. Thinking only about the performance data that you collect and report to the FBC and the support that you receive for your use of that data, please evaluate the following statements. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. My local government encourages me to use FBC performance data to make decisions related to my job	○	○	○	○	○	○
ii. My local government has somebody that I can turn to that can assist me with any performance related issues/questions that I have	○	○	○	○	○	○
iii. My local government provides me with the resources that I need to measure and analyze FBC performance data	○	○	○	○	○	○
iv. My local government supports flexible decision-making where I am empowered to make decisions on a basis of performance data	○	○	○	○	○	○

9. Thinking only about FBC performance data, evaluate your own readiness to use the FBC performance data in your job. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I have adequate technical knowledge to use FBC performance data	○	○	○	○	○	○
ii. I have the necessary skills to interpret FBC performance data	○	○	○	○	○	○
iii. I have sufficient training on how to use FBC performance data	○	○	○	○	○	○
iv. I have sufficient work experience to use FBC performance data	○	○	○	○	○	○
v. I support the use of FBC performance data in my departmental decision-making	○	○	○	○	○	○
vi. . In my daily work I am primarily driven to serve citizens and the public interest	○	○	○	○	○	○

10. Thinking only about the use of FBC performance data, evaluate the following statements regarding the external influences over the use of performance data in your department. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I receive external encouragement (outside my local government) to use FBC performance data in my tasks	○	○	○	○	○	○
ii. I am concerned that the public can use FBC performance data against my local government	○	○	○	○	○	○
iii. I am concerned that media can use FBC performance data against my local government	○	○	○	○	○	○

11. Thinking only about the use of FBC performance data, evaluate the following statements regarding the various uses of the performance data in your department. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. I use FBC performance data to evaluate my local government performance (detect deficiencies, define best practices, detect trends, etc.)	○	○	○	○	○	○
ii. I use FBC performance data in adopting new program approaches or changing work processes (decision-making) within my local government	○	○	○	○	○	○
iii. I use FBC performance data in planning future projects and improvements	○	○	○	○	○	○
iv. I use FBC performance data in departmental budgeting (decisions/requests)	○	○	○	○	○	○
v. I use FBC performance data in making personnel decisions (promotion, termination, new hire, setting job expectations)	○	○	○	○	○	○
vi. My department uses FBC performance data in making personnel decisions (promotion, termination, new hire, setting job expectations)	○	○	○	○	○	○
vii. I use FBC performance data in reporting my local government performance to the public	○	○	○	○	○	○
viii. I use FBC performance data in reporting my local government performance to elected officials	○	○	○	○	○	○
ix. My department uses FBC performance data in reporting my local government performance to elected officials	○	○	○	○	○	○

x. I use FBC performance data to benchmark against other governments	○	○	○	○	○	○
xi. The use of FBC performance measurement has improved the performance of my local government	○	○	○	○	○	○

12. What actions could make FBC performance data more useful in your job? *(Check all responses that apply).*
    o More training on how to use FBC performance data in my job
    o More financial resources to measure and analyze performance
    o More staffing support to measure and analyze performance
    o Collect more performance measures
    o Collect fewer performance measures
    o Collect more relevant performance measures
    o Collect and report performance information to FBC more often
    o Other *(Please use the space provided below to explain)*

_____
_____
_____
_____
_____

13. How often do you communicate with each of the following people *regarding the FBC performance measures and data*?

	Never	Once a year	2-3times a year	Every month	Weekly
i. Other FBC Primary Coordinators	○	○	○	○	○
ii. FBC Service Area Leads	○	○	○	○	○
iii. FBC Executive Director	○	○	○	○	○

14. What are the primary purposes of your communication with: the other FBC Primary Coordinators, FBC Service Area Leads and FBC Executive Director? *(Check all responses that apply).*

	FBC Primary Coordinator from other local government	FBC Service Area Lead	FBC Executive Director	Did not contact/not applicable
i. Request clarification of a FBC performance measure	○	○	○	○

	Strongly Disagree	Disagree	Agree	Strongly Agree
ii. Request clarification on FBC data input issues	○	○	○	○
iii. Submit the FBC performance data for my local government	○	○	○	○
iv. Request the FBC annual report	○	○	○	○
v. Discuss the aspects of performance of my local government	○	○	○	○

15. Thinking about your FBC membership, please evaluate the following statements. If you don't know or are unsure, please check "Don't Know".

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree	Don't Know
i. The FBC membership facilitates my communication about performance related issues with departments in other governments	○	○	○	○	○	○
ii. The FBC membership allows me to share my performance experiences with other governments	○	○	○	○	○	○
iii. The FBC membership allows me to receive information about other governments' experiences in performance improvement	○	○	○	○	○	○
iv. The FBC membership increases my knowledge on performance related issues	○	○	○	○	○	○
v. The FBC membership increases my networking opportunities	○	○	○	○	○	○

16. How would you describe your experiences in measuring performance and using FBC performance data in your job?

_____

_____

_____

Finally, few demographic questions

17. What is your gender?
   - ○ Male
   - ○ Female

18. What is your educational level?
- o   High school/GED
- o   Some College
- o   Bachelor's Degree
- o   Graduate Degree
- o   Other *(please specify)*_____

19. Approximately, what is the estimated population of your city/county?

_____

Thank you for your time!

APPENDIX C: IRB APPROVAL

IRB APPROVAL

University of Central Florida

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
       FWA00000351, IRB00001138

To: **Tamara Dimitrijevska-Markoski**

Date: **September 29, 2016**

Dear Researcher:

On 09/29/2016, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	USE OF PERFORMANCE INFORMATION BY LOCAL GOVERNMENT ADMINISTRATORS: EVIDENCE FROM FLORIDA
Investigator:	Tamara Dimitrijevska-Markoski
IRB Number:	SBE-16-12492
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Patria Davis on 09/29/2016 04:27:05 PM EDT

IRB Coordinator

APPENDIX D: PARTICIPATING GOVERNMENTS

Table 25: List of Participating Governments

PARTICIPATING GOVERNMENTS
1.   Broward County
2.   City of Cape Coral
3.   Charlotte County
4.   City of Clermont
5.   City of Coral Springs
6.   City of Dania Beach
7.   City of Deerfield Beach
8.   City of Lakeland
9.   City of Largo
10.   Marion County
11.   Martin County
12.   Miami-Dade County
13.   City of Miramar
14.   City of North Miami
15.   City of Oakland Park
16.   Okaloosa County
17.   Orange County
18.   City of Ormond Beach
19.   City of Oviedo
20.   Pasco County
21.   Pinellas County
22.   City of Pinellas Park
23.   City of Plant City
24.   Polk County
25.   City of Pompano Beach
26.   City of Port Orange
27.   City of Port St. Lucie
28.   St. Lucie County
29.   City of Winter Garden

APPENDIX E: CORRELATION ANALYSIS

Table 26: Correlation Analysis of Design Adequacy Performance Measurement Systems

Correlations

			DA1	DA2	DA3	DA4	DA5	DA6	DA7
Spearman's rho	DA1	Correlation Coefficient	1.000						
		Sig. (2-tailed)	.						
		N	124						
	DA2	Correlation Coefficient	.491**	1.000					
		Sig. (2-tailed)	.000	.					
		N	124	124					
	DA3	Correlation Coefficient	.301**	.583**	1.000				
		Sig. (2-tailed)	.001	.000	.				
		N	124	124	124				
	DA4	Correlation Coefficient	.246**	.372**	.685**	1.000			
		Sig. (2-tailed)	.006	.000	.000	.			
		N	124	124	124	124			
	DA5	Correlation Coefficient	.374**	.333**	.369**	.207*	1.000		
		Sig. (2-tailed)	.000	.000	.000	.021	.		
		N	124	124	124	124	124		
	DA6	Correlation Coefficient	.219*	.319**	.401**	.315**	.288**	1.000	
		Sig. (2-tailed)	.014	.000	.000	.000	.001	.	
		N	124	124	124	124	124	124	
	DA7	Correlation Coefficient	.164	.147	.263**	.127	.358**	.135	1.000
		Sig. (2-tailed)	.069	.102	.003	.158	.000	.135	.
		N	124	124	124	124	124	124	124

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 27: Correlation Analysis of Institutionalization of Performance Measurement

			I1	I2	I3	I4	I5	I6
			Correlations					
Spearman's rho	I1	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	124					
	I2	Correlation Coefficient	.622**	1.000				
		Sig. (2-tailed)	.000	.				
		N	124	124				
	I3	Correlation Coefficient	.592**	.694**	1.000			
		Sig. (2-tailed)	.000	.000	.			
		N	124	124	124			
	I4	Correlation Coefficient	.386**	.525**	.578**	1.000		
		Sig. (2-tailed)	.000	.000	.000	.		
		N	124	124	124	124		
	I5	Correlation Coefficient	.505**	.530**	.646**	.706**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.000	.	
		N	124	124	124	124	124	
	I6	Correlation Coefficient	.369**	.510**	.471**	.582**	.529**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	124	124	124	124	124	124

**. Correlation is significant at the 0.01 level (2-tailed).

Table 28: Correlation Analysis of Organizational Support

Correlations			OS1	OS2	OS3	OS4
Spearman's rho	OS1	Correlation Coefficient	1.000			
		Sig. (2-tailed)	.			
		N	124			
	OS2	Correlation Coefficient	.325**	1.000		
		Sig. (2-tailed)	.000	.		
		N	124	124		
	OS3	Correlation Coefficient	.216*	.350**	1.000	
		Sig. (2-tailed)	.016	.000	.	
		N	124	124	124	
	OS4	Correlation Coefficient	.276**	.157	.273**	1.000
		Sig. (2-tailed)	.002	.082	.002	.
		N	124	124	124	124

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 29: Correlation Analysis of Individual Factors

			IF1	IF2	IF3	IF4	IF5	IF6
			Correlations					
Spearman's rho	IF1	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	124					
	IF2	Correlation Coefficient	.802**	1.000				
		Sig. (2-tailed)	.000	.				
		N	124	124				
	IF3	Correlation Coefficient	.743**	.767**	1.000			
		Sig. (2-tailed)	.000	.000	.			
		N	124	124	124			
	IF4	Correlation Coefficient	.670**	.795**	.698**	1.000		
		Sig. (2-tailed)	.000	.000	.000	.		
		N	124	124	124	124		
	IF5	Correlation Coefficient	.524**	.510**	.494**	.501**	1.000	
		Sig. (2-tailed)	.000	.000	.000	.000	.	
		N	124	124	124	124	124	
	IF6	Correlation Coefficient	.346**	.349**	.261**	.378**	.088	1.000
		Sig. (2-tailed)	.000	.000	.003	.000	.331	.
		N	124	124	124	124	124	124

**. Correlation is significant at the 0.01 level (2-tailed).

Table 30: Correlation Analysis of External Factors

Correlations

			EF1	EF2	F3
Spearman's rho	EF1	Correlation Coefficient	1.000		
		Sig. (2-tailed)	.		
		N	124		
	EF2	Correlation Coefficient	.153	1.000	
		Sig. (2-tailed)	.090	.	
		N	124	124	
	EF3	Correlation Coefficient	.201*	.907**	1.000
		Sig. (2-tailed)	.025	.000	.
		N	124	124	124

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 31: Correlation Analysis of Use of Performance Data

			USE1	USE2	USE3	USE4	USE5	USE6	USE7	USE8	USE9	USE10
			Correlations									
Spearman's rho	USE1	Correlation Coefficient	1.000									
		Sig. (2-tailed)	.									
		N	124									
	USE2	Correlation Coefficient	.742[**]	1.000								
		Sig. (2-tailed)	.000	.								
		N	124	124								
	USE3	Correlation Coefficient	.745[**]	.848[**]	1.000							
		Sig. (2-tailed)	.000	.000	.							
		N	124	124	124							
	USE4	Correlation Coefficient	.692[**]	.745[**]	.825[**]	1.000						
		Sig. (2-tailed)	.000	.000	.000	.						
		N	124	124	124	124						
	USE5	Correlation Coefficient	.583[**]	.678[**]	.642[**]	.658[**]	1.000					
		Sig. (2-tailed)	.000	.000	.000	.000	.					
		N	124	124	124	124	124					
	USE6	Correlation Coefficient	.503[**]	.580[**]	.578[**]	.571[**]	.783[**]	1.000				
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.				
		N	124	124	124	124	124	124				
	USE7	Correlation Coefficient	.472[**]	.568[**]	.553[**]	.571[**]	.460[**]	.346[**]	1.000			
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.			
		N	124	124	124	124	124	124	124			
	USE8	Correlation Coefficient	.512[**]	.590[**]	.634[**]	.610[**]	.485[**]	.385[**]	.853[**]	1.000		
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.		

		USE1	USE2	USE3	USE4	USE5	USE6	USE7	USE8	USE9	USE10
	N	124	124	124	124	124	124	124	124		
USE9	Correlation Coefficient	.484**	.560**	.601**	.566**	.463**	.435**	.752**	.880**	1.000	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.	
	N	124	124	124	124	124	124	124	124	124	
USE10	Correlation Coefficient	.647**	.452**	.453**	.388**	.349**	.241**	.494**	.440**	.362**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.007	.000	.000	.000	.
	N	124	124	124	124	124	124	124	124	124	124

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX F: NORMALITY

Table 32: Normality Analysis

| | N | | | Std. Error of | | Std. Error of |
	Valid	Missing	Skewness	Skewness	Kurtosis	Kurtosis
	Statistics					
DA1	124	0	-.747	.217	.012	.431
DA2	124	0	-.823	.217	.442	.431
DA3	124	0	-.193	.217	-.369	.431
DA4	124	0	-.298	.217	-.548	.431
DA5	124	0	-.381	.217	-.732	.431
DA6	124	0	-.410	.217	-.406	.431
DA7	124	0	-.997	.217	.623	.431
I1	124	0	.423	.217	-.892	.431
I2	124	0	.259	.217	-1.114	.431
I3	124	0	.171	.217	-1.060	.431
I4	124	0	-.301	.217	-1.053	.431
I5	124	0	-.033	.217	-1.136	.431
I6	124	0	-.121	.217	-1.256	.431
OS1	124	0	.290	.217	-.689	.431
OS2	124	0	-.376	.217	-.904	.431
OS3	124	0	-.709	.217	-.151	.431
OS4	124	0	-.641	.217	.206	.431
IF1	124	0	-.934	.217	1.169	.431
IF2	124	0	-1.241	.217	2.750	.431
IF3	124	0	-.717	.217	.083	.431
IF4	124	0	-1.039	.217	1.269	.431
IF5	124	0	-.468	.217	-.544	.431
IF6	124	0	-1.683	.217	2.782	.431
EF1	124	0	.568	.217	-.143	.431
EF2	124	0	.186	.217	-.394	.431
EF3	124	0	.255	.217	-.532	.431
USE1	124	0	-.205	.217	-1.052	.431
USE2	124	0	.209	.217	-.837	.431
USE3	124	0	.116	.217	-.973	.431
USE4	124	0	.080	.217	-.944	.431
USE5	124	0	.514	.217	.052	.431
USE6	124	0	.213	.217	-.435	.431
USE7	124	0	.134	.217	-.765	.431
USE8	124	0	-.049	.217	-.871	.431
USE9	124	0	-.167	.217	-.723	.431
USE10	124	0	-.286	.217	-.950	.431

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