

**USE OF PERFORMANCE MEASUREMENT INFORMATION IN A
FEDERAL AGENCY-- A COMPARATIVE CASE STUDY ANALYSIS**

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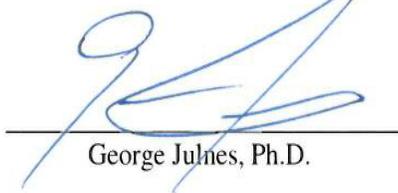
Doctor of Public Administration

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DEDICATION

This dissertation is dedicated to my parents for their unwavering love and support.

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I would like to begin by giving all honor and praise to my Lord and Savior for all of the amazing blessings you have bestowed on me.

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ABSTRACT

Use of Performance Measurement Information in a Federal Agency--A Comparative Case Study Analysis

Julia H. Bryan

The use of performance measurement information has been examined in public administration literature for decades; however, the focus has been state and local government agencies. How performance measurement information is used and what factors support this used at the federal level is not well documented. The lack of research examining how and why performance information is used poses a major knowledge gap for federal programs that are trying to find ways to enhance the use of performance measurement information to improve programmatic efforts, such as use for the purposes of accountability, improvement, understanding and mobilization. Based on this information, the purpose of this research study was to examine how performance measurement information is used at the federal level and the factors that influence the use.

To this end, a comparative case study analysis that consisted of a two-phased, sequential mixed methods approach was conducted. The unit of analysis was two program offices within the U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA)--the Office of Rural Health Policy (ORHP) and the Bureau of Primary Health Care (BPHC). These program offices represented two very diverse programs that have performance measurement systems but diverge in areas such as available resources, organizational culture, and organizational structure.

The first phase of the research consisted of a survey of managers and staff within the HRSA's BPHC and ORHP examining perceptions of use and the factors that influence such use. Semi-structured interviews built upon the survey findings and further explored the emerging patterns from the survey and provided ideas for encouraging the use of performance measurement information within federal agencies. Written documents were also employed to corroborate the survey and interview findings.

The study results appear to confirm previous studies that rational/technocratic factors, organizational complexity and organizational culture are important to the use of performance measurement information. The results also indicate the overall use of performance measurement information and use of this information both instrumentally, for the purposes of accountability and program improvement, and non-instrumentally, for the purposes of understanding and mobilization. Moreover, the results suggest that different types of use are influenced by different factors. Rational/technocratic factors,

for instance, appear to play an influential role in perceived performance measurement use, instrumental use and non-instrumental use. The results also show that rational/technocratic factors, organizational complexity and organizational culture influence perceived performance measurement use. Lastly, perceived instrumental use is guided by rational/technocratic factors and organization complexity where as non-instrumental use appears to be influenced by rational/technocratic factors and organizational culture. The results, however, did not indicate stakeholder involvement as an influential factor for performance measurement use, instrumental use and non-instrumental use. Nevertheless, the interviews suggest that stakeholders are an important part of the performance measurement process, particularly regarding the development of performance measures and providing technical assistance to grantee organizations.

The findings from this study show that performance measurement information is being used at the federal level. The findings also suggest that communicating the value and importance of performance measurement information, continuously re-assessing needs associated with using performance measurement information and creating a culture that encourages and supports the use of performance measurement information are all critical aspects to the actual use of this information. Lastly, the findings indicate the importance of considering the use of performance measurement information from a holistic perspective that is inclusive of instrumental and non-instrumental use in order for organizations to build or enhance their management and decision making processes.

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION.....	1
Background of the Study	1
Problem Statement	5
Professional Significance.....	5
Overview of the Methodology	7
Organization of the Dissertation	8
CHAPTER TWO: LITERATURE REVIEW	10
Why Performance Measurement.....	11
Use of Performance Measurement.....	12
Ways in which Performance Measurement Information is Used	14
Influential Factors Associated with Performance Measurement Use ..	17
Performance Measurement at the Federal Level	20
Budget-based Performance Efforts	21
Results-oriented Performance Efforts	25
Challenges Associated with the Use of Performance Measurement Information	30
Theoretical Framework.....	31
What Constitutes Use?.....	32
Instrumental Use	40
Non-Instrumental Use.....	43
Factors that Influence Use of Performance Measurement Information	45
Organizational Complexity.....	46
Rational/Technocratic Factors	55
Political/Cultural Factors	58
Summary	64
CHAPTER THREE: METHODOLOGY	66
Introduction.....	66
Research Design.....	67
Researcher’s Role	68
Sample Population and Participants.....	69
Bureau of Primary Healthcare	70
Office of Rural Health Policy	71
Survey Instrument.....	73
Distribution of the Surveys	75
Validity and Reliability of Survey Instrument.....	78

Response Rate.....	79
Quantitative Analysis of Survey Data.....	80
Factor Analysis	80
Regression Analysis.....	82
Building Upon the Quantitative Model.....	87
Interviews.....	90
Interview Data Collection Strategies	91
Validity and Reliability of Interview Tool.....	93
Document Review.....	94
Strengths and Limitations of Methodology	94
Risks, Anonymity, and Benefits of the Study.....	97
Summary	98
CHAPTER FOUR: RESULTS AND FINDINGS.....	99
Introduction.....	99
Measurement of Variables	99
Dependent Variables	100
Independent Variables	102
Response Rate and Power Analysis.....	104
Descriptive Analysis	106
Demographic Information.....	107
Instrumental Use of Performance Measurement Information	110
Non-Instrumental Use of Performance Measurement Information	116
Rational and Technocratic Factors.....	126
Stakeholder Involvement	132
Organizational Culture.....	137
Organizational Complexity.....	142
Factor Analysis	148
One Factor Solution for Performance Measurement Use	151
Two Factor Solution for Performance Measurement Use	152
Factor Analysis for Independent Variables.....	153
Cronbach Alpha	157
Model Testing	158
Multiple Regression Analyses	159
Building Upon the Quantitative Data	182
Use of Performance Measurement Information.....	183
Document Review.....	204
Summary	208
CHAPTER FIVE: DISCUSSION.....	210

Review of Findings	210
Limitations of the Study.....	221
Implications of the Study	222
Future Research	223
Conclusion	224
REFERENCES.....	226
APPENDIX A	239
APPENDIX B	241
APPENDIX C	251
APPENDIX D	253

LIST OF TABLES AND FIGURES

TABLES

Table 2.1: Research Questions and Hypotheses	65
Table 4.1: Distribution of Respondents by Program Office	107
Table 4.2: Distribution of the Respondents by Position	108
Table 4.3: Distribution of the Respondents by Position and Program Office.....	108
Table 4.4: Demographic Characteristics of the Survey Responses by Program Office Regarding Length of Time in HRSA	110
Table 4.5: Demographic Characteristics of the Survey Responses by Program Office Regarding Length of Time in Program Office	110
Table 4.6: Frequency Summary of Dependent Variables Measuring Performance Measurement Use	126
Table 4.7: Frequency Distribution of Variables Measuring Rational/Technocratic Factors	127
Table 4.8: Frequency Distribution of Variables Measuring Stakeholder Involvement	133
Table 4.9: Frequency Distribution of Variables Measuring Organizational Culture	138
Table 4.10: Frequency Distribution of Variables Measuring Organizational Complexity	143
Table 4.11: KMO Sampling Adequacy and Barlett’s Test of Sphericity for the Performance Measurement Use	151
Table 4.12: Unrotated Factor Loading for Performance Measurement Use .	151
Table 4.13: Rotated 2-Factor Loadings for Performance Measurement Use	153
Table 4.14: KMO Sampling Adequacy and Barlett’s Test of Sphericity	

for Factors Influencing the Use of Performance Measurement Information	154
Table 4.15: Rotated Factor Loadings for Factors Influencing the Use of Performance Measurement Information	156
Table 4.16: Cronbach Alpha Coefficient Values for the Dependent and Independent Variables	158
Table 4.17: Multiple Regression Model Explaining Performance Measurement Use	162
Table 4.18: Multiple Regression Model Explaining Instrumental Use	163
Table 4.19: Multiple Regression Model Explaining Non-Instrumental Use	166
Table 4.20: Multiple Regression Model Explaining Performance Measurement Use by BPHC	168
Table 4.21: Multiple Regression Model Explaining Instrumental Use by BPHC	169
Table 4.22: Multiple Regression Model Explaining Non-Instrumental Use by BPHC	170
Table 4.23: Multiple Regression Model Explaining Performance Measurement Use by ORHP	171
Table 4.24: Multiple Regression Model Explaining Instrumental Use by ORHP	172
Table 4.25: Multiple Regression Model Explaining Non-Instrumental Use by ORHP	173
Table 4.26: Multiple Regression Model Explaining Performance Measurement Use and Program Office Interaction Effect	175
Table 4.27: Multiple Regression Model Explaining Instrumental Use and Program Office Interaction Effect	176
Table 4.28: Multiple Regression Model Explaining Non-instrumental Use and Program Office Interaction Effect	177
Table 4.29: Summary of Findings	180

Table 4.30: Demographic Information for Interviews by Program Office and Position	182
Table 31: Interview Themes	184
Table 4.32: Interview Response Patterns Related to the Use of Performance Measurement Information	186
Table 4.33: Interview Response Patterns Related to Elements that Encourage the Use of Performance Measurement Information	191
Table 4.34: Interview Response Patterns Related to Factors that Limit or Hinder the Use of Performance Measurement Information	193
Table 4.35: Interview Response Patterns Regarding the Influence of Stakeholder Involvement in the Performance Measurement Process	196
Table 4.36: Interview Response Patterns Related to the Role of Performance Measurement Information	200
Table 4.37: Interview Response Patterns Related to the Influence of Organizational Structure	204
Table 4.38: Synopsis of Document Review Materials, Types of Use, and Themes	206

FIGURES

Figure 4.1: Percent of Instrumental Use by Program Office	113
Figure 4.2: Percent of Instrumental Use by Position	115
Figure 4.3: Percentage of Non-Instrumental Use for Understanding by Program Office	119
Figure 4.4: Percentage of Non-Instrumental Use for Mobilization by Program Office	120
Figure 4.5: Percentage of Non-Instrumental Use for Understanding by Position	122
Figure 4.6: Percentage of Non-Instrumental Use for Mobilization by Position	123

Figure 4.7: Percentage of Differences in Rational/Technocratic Factors by Program Office	129
Figure 4.8: Percentage of Differences in Rational/Technocratic Factors, Enough Staff and Dedicated Team, by Position	130
Figure 4.9: Percentage of Variables Measuring Stakeholder Involvement by Program Office	134
Figure 4.10: Percentage of Variables Measuring Stakeholder Involvement by Position	135
Figure 4.11: Percentage of Variables Measuring Organizational Culture by Program Office	139
Figure 4.12: Percentage of Variables Measuring Organizational Culture by Position	140
Figure 4.13: Percentage of Variables Measuring Organizational Complexity by Program Office	144
Figure 4.14: Percentage of Variables Measuring Organizational Complexity by Position	146

CHAPTER ONE: INTRODUCTION

The practice of performance measurement information within federal programs has increased significantly over the years; however, it appears that this information has not been used as extensively as it is collected, particularly at the federal level (GAO 2008; GAO 2009). Jeffery Zients (2009), the Chief Performance Officer and Deputy Director of the Office of Management and Budget (OMB), contended that performance information is not being used by federal agencies, Congress, or the public. Furthermore, there has been little research on performance measurement information use for decision making and management processes within federal programs (Hatry 2010; GAO 2008; GAO 2009; Kamensky and Morales 2005). The paucity of research on how and why performance measurement is used represents a significant gap in knowledge within federal programs that, if filled, may better equip federal managers to use performance measurement information in a way that best meets their program's needs. Given this background and the time, effort and funds dedicated to data collection for performance measurement, it is important that federal managers answer the following questions: (1) what factors influence the use of performance measurement information and how; (2) under what circumstances is performance measurement information being used; and (3) who is using this information?

Background of the Study

Performance measurement and systems to support it have increased significantly over the years at the federal level in efforts to: (1) assess the impact that grant funds have on federal programs; (2) improve performance; (3) create more accountability; and (4)

assist with decision making processes (Cavalluzzo and Ittner 2003; de Lancer Julnes and Holzer 2001). Additionally, capturing and communicating performance measurement information has evolved into a key focus across all levels of government, including at the federal level where budget and resource decisions are receiving a higher level of analysis during the recent economic challenges (Hall and Handley 2011). The use of performance measurement information within federal agencies has the potential to positively influence the management and performance of federal programs (Ho 2005; Yang and Hseih 2007); however, performance measurement use is a multifaceted concept (de Lancer Julnes 2009, 207). Research, particularly from the field of evaluation, maintains that there are two key uses to consider in the decision making process--instrumental use, which involves data that have a concrete impact on a decision being made, and non-instrumental or conceptual use, which refers to an important but less visible impact on the decision making process (de Lancer Julnes 2009; Patton 2004; Nielsen and Ejler 2008; Weiss 1998). In addition to the different types of use, performance measurement information is used for various purposes such as for program improvement, motivation and mobilization, control and oversight, and for evaluation and understanding (Behn 2003; Cavalluzzo and Ittner 2004; de Lancer Julnes 2009; GAO 2005; Hatry 2010; Heinrich 1999; Kamensky and Morales 2005; and Mullen 2006).

From the federal perspective, the research has shown some level of use of performance measurement information. Newcomer (2007, 340-41), for example, found that federal managers are using performance measurement information to guide program management decisions, set priorities, adjust work processes, and gain better understanding of their programs and improve performance. However, there were wide

variations (between 25% and 65%) among federal agencies regarding use of performance information for human, financial and capital resource allocations (Newcomer 2007, 340-341). In spite of the different uses of performance measurement information, the degree to which federal programs use this information to manage program performance has not shifted significantly. For example, the GAO (2005) observed that, although more performance measurement information is available to managers, the use of that information toward decision and management practices “remained essentially unchanged” (GAO 2005, 1) between 1997 and 2007 (GAO 2009). Specifically, only about 50 percent of federal managers stated using performance measurement information for various management activities (GAO 2008). These concerns indicate a fundamental need to learn more about performance measurement use within federal agencies. Moynihan and Pandey (2010) noted that “without knowledge of why such use occurs, it becomes difficult to establish the conditions for performance management success” (3). Understanding the factors influencing the actual use of performance measurement information will help to address how and why performance measurement information is used. This information is important to know because it will provide valuable knowledge towards identifying tools and processes to strengthen the linkage between performance measurement information and the decision and management practices within federal programs, therefore taking advantage of performance measurement.

Studies have shown that there are several factors that can affect the use of performance measurement information in federal agencies. These factors include, but are not limited to, leadership, systems development, program legislation, decision-making authority, training, multiple program and goal-oriented systems, stakeholder support,

organizational culture, and intergovernmental programs (Berman and Wang 2000; Cavalluzzo and Ittner 2004; Frederickson and Frederickson 2007; de Lancer Julnes 2009; Kravchuk and Schack 1995; Radin 1998; Radin 2000). These factors fall under different perspectives that influence performance measurement use. One set of factors is considered from a rational perspective in which performance measurement information is used for informed management and decision making practices. Another set of factors is viewed from a political perspective which includes stakeholder involvement and organizational culture and has also been shown to be influential in the use of performance measurement information (de Lancer Julnes and Holzer 2001; de Lancer Julnes 2009; Ho 2005; Yang and Hseih 2007).

In addition to these factors, another factor that may have an influence on the use of performance measurement information but has not been explored in depth within a federal program is organizational structure. Federal bureaucracies are well known for having ambiguous and uncertain environments in which program office structures, processes, and activities vary greatly (Radin 2000). In assessing the impact of the Government Performance Results Act (GPRA) Radin (2000) states that GPRA “does not fit easily into the institutional structures, functions, and political realities of the American system” (Radin 2000, 112). Hall (1972) also noted the impact that organizational structure can have on behavior within the organization. Additionally, the structure of an organization can potentially dictate who in the office uses performance measurement information, which may be either managers or program staff. Most studies appear to focus on the use of performance measurement information by managers (Ho 2005; Newcomer 2007). However, excluding program staff in the use of performance

measurement information may not provide a full and accurate assessment of the use of this information within federal agencies (Radin 2000a; Cavalluzzo and Ittner 2004). Then one can expect, in turn, to find that organizational structure will have an influence on the use of performance measurement information, specifically the extent to which it is used and by whom.

Problem Statement

With few studies analyzing the use of performance measurement information within federal programs, particularly with organizational structure as a factor, there was an opportunity to probe further into the federal programs to examine the circumstances in which performance measurement information is used to make decisions and manage programs, to identify what, and how, factors influence performance measurement use and the extent to which performance measurement information is used and who is using this information within the program office. One of the benefits of increased knowledge in these areas is having managers and staff become better informed on how and why performance measurement information is currently being used in their program office. Another benefit of this knowledge is the ability to provide assistance to program offices on identifying new or enhanced ways to support the use of performance measurement information within their management and decision making practices. Hence, the purpose of this study was to examine factors that influence the use of performance measurement information in federal agencies.

Professional Significance

This research study is significant in several ways, as it contributes to the limited body of knowledge regarding the use of performance measurement information within

federal programs and offers a step toward a broader understanding of factors that influence the use of performance measurement information for improved program management as well as decision-making practices. One significant aspect is that it examined organizational complexity, which includes levels of involvement, formulation and specialization, as a factor that influences the use of performance measurement information. Another significant aspect of the study is that it was guided by a performance measurement implementation framework that delves deeper into different kinds of uses. Additionally, the study examined the use of performance measurement information at the program office level, as opposed to the agency level, to provide a closer examination of the complexity of individual program offices and the factors that are influential in making decisions and managing federal programs. Lastly, the study included both managers and staff as participants in the research design in order to gather a broader audience of performance measurement information users. Exploring both instrumental and non-instrumental performance measurement use, as well as including the organizational structure as a factor and program staff in the analysis, went beyond previous studies and made this study uniquely poised to capture the nuances of using performance measurement information in federal programs. Additionally, it provides a new perspective on the scholarship of using performance measurement information. These factors assisted in addressing the research questions: which factors influence performance measurement information and why, under what circumstances is it being used, and who is using it? By addressing these questions, program offices can begin developing or enhancing tools and practices that will link performance measurement information into their management and decision making processes, which is sorely

needed to improve program performance. The intended audience for this study is public administrators, federal program managers and staff, and others interested in how and why performance measurement information is used within federal programs and by whom, with the goal of improving and enhancing the linkages between performance measurement use and management practices.

Overview of the Methodology

The methodology for this study was a comparative case study analysis that consisted of a two-phased, sequential mixed methods approach. As noted previously, the purpose of this comparative case study was to examine the factors that influence the use of performance measurement information in a federal agency. The unit of analysis for this study was two program offices within the U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA)--the Office of Rural Health Policy (ORHP) and the Bureau of Primary Health Care (BPHC). The selected program offices represented two very diverse programs that have performance measurement systems but diverge in areas such as available resources, organizational culture, and organizational structure. Specifically, these differences revealed which key organizational factors affect the use of performance measurement information within federal programs.

The first phase of the research consisted of a web-based and paper-based survey examining factors that influence the use of performance measurement information among federal managers and staff within the HRSA's BPHC and ORHP. This phase applied the performance measurement implementation framework to measure the constructs or variables that served as the basis for the survey. It also included a cover letter that

explained the purpose of the study, associated terms and definitions, and assurances that the survey would be both anonymous and voluntary.

Semi-structured interviews built upon the survey findings and further explored the emerging patterns from the survey as well as ideas for encouraging the use of performance measurement information within federal agencies. The interviews provided insight into the patterns highlighted by the survey data. In addition, the interviews helped to inform recommendations related to use of performance measurement information. The study utilized triangulation with the inclusion of written documents to corroborate the survey and interview findings. Written documents included program funding opportunity announcements and instructions, budget justifications, policy notices, presentations, data-systems-based information, presentations and others which allowed for further analysis. The results of the research were interpreted in relation to the study's research questions and hypotheses and addressed the significance of the results, the potential flaws in the research design, the ability to generalize the results, and implications of the results towards use of performance information at the federal level (Creswell 2009).

Organization of the Dissertation

This dissertation consists of five chapters. Chapter two reviews the literature on performance measurement information, the use of this information for management and decision making practices as well as the factors influencing use of performance measurement information, particularly at the federal level. The chapter concludes with theoretical considerations including performance measurement framework regarding use of performance measurement information. Chapter three presents the research methodology for the study and includes the research design, unit of analysis, and the data

collection and analysis processes. Chapter four provides the results and major findings from the study, and chapter five concludes the study by providing key implications for theory, practice and research for public administration.

CHAPTER TWO: LITERATURE REVIEW

The significance of performance measures as well as the potential benefits associated with performance measurement information within public sector organizations has been well documented in public administration literature. Behn (2003, 583) proclaims that “everyone is measuring performance” and that managers are using performance measurement information to assess their program activities and organizations. Other researchers have noted use of this information for decision making practices with the goals of increased productivity and cost effectiveness (Ho 2005). Furthermore, studies have shown that the integration of performance measures into management practices has been initiated at the state and local government level (Ho, 2005; Ammons and Rivenbark 2008). For example, Ho (2005) found that state and local officials have used performance measurement information for decision making processes such as internal program decisions. Additionally, the author indicated that the integration of performance measurement information into budget and management helped to increase productivity and cost effectiveness of public programs (Ho 2005).

However, it is believed that the link between performance measurement information and management decisions only occurs when measures are required for budgetary processes, strategic planning, and departmental initiatives (Clay and Bass 2002; Poister and Streib 1999). Moreover, there have been debates on the value of this information beyond reporting requirements (Ammons and Rivenbark 2008; Poister and Streib 1999) and whether performance measurement information is used at all to improve management and decision making practices (Ammons and Rivenbark 2008). However, what is less understood is whether the integration of performance measurement

information into the management and decision processes has occurred within the federal government (Ammons and Rivenbark 2008; Ho 2005). Specifically, research on how, why, and by whom performance measurement information is used in decision and management processes at the federal level has yet to be explored in depth. This represents a significant gap in knowledge regarding the factors that influence the actual use of performance measurement information for federal programs, particularly in light of performance measurement requirements such as the Government Performance and Results Act (GPRA).

Why Performance Measurement?

At its simplest form, Cook (1986, 96) noted that public agencies should examine what they are doing and how well they are doing it on a regular and consistent basis. An organization's performance is measured as an important and effective approach towards success or improvement; it also leads to a higher level of accountability on the part of its customers (Berman and Wang 2000). A common definition of performance measurement focuses on the use of indicators to show the extent to which intended services and activities are undertaken and to measure outcomes that are supposed to result from these services and activities as a way to ensure the efficiency that stakeholders expect (Ho 2005; Rossi, Lipsey, and Freeman 2004). Measuring performance depends on leaders examining major components of their organization such as goals and objectives, the resources to support performance measurement, and the influence these measures will have in the organization (Berman and Wang 2000). The literature has shown examples of effective methods that move performance measurement information towards improved public programs as well as challenges associated with using performance measurement

information such as its validity and reliability (Frederickson and Frederickson 2006; Poister and Streib 1999). Frederickson and Frederickson (2006, 15) noted that a “much smaller part of performance measurement literature is based on systematic research or detailed field studies of the actual application of performance measurement to government programs.” As a result of various federal initiatives regarding performance, there has been a drastic increase in the collection of performance measurement information. However, the question of whether using performance measurement data can “deliver its potential benefits to management” (Ho 2005, 219) remains unknown. To understand this question, it is important to examine the use of performance measurement information in public agencies.

Use of Performance Measurement Information

The initial goal of using performance measurement information has been to demonstrate accountability and effectiveness of public programs. Currently the use of performance measurement information is cited throughout public administration literature as a way for public managers to create budgets as well as rationalize budget and resource decisions, communicate to internal and external stakeholders, and conduct strategic planning and program management that leads to improved results and increased productivity (Cavalluzzo and Ittner 2004; Ho 2005; de Lancer Julnes 2009; Newcomer 2007). Unfortunately, with the primary focus on developing and sharing performance measurement information, there has not been much effort on other ways to effectively use this information (Moynihan et al. 2011).

While there is evidence demonstrating that performance measurement information has a positive influence on management and performance within federal programs, the

concept of using this information is complex (de Lancer Julnes 2009, 207). In their study examining the factors that influence the use of performance data at the local and county level, Ammons and Rivenbark (2008) defined the use of performance measurement information as one that requires evidence of an impact on decisions at some level of the organization. From a federal perspective, Kates, Marconi, and Mannle Jr. (2001) stated that the use of performance measurement information should be based in program experience in order for the information to have value and practicality for federal programs, particularly due to the delegation of some management and decision making functions to a third party entity (Kates, Marconi, and Mannle Jr. 2001; Frederickson and Frederickson 2006).

Weiss (1998, 23), from the field of evaluation, maintained that there are several uses to consider in the decision making process. One type of use, instrumental, involves data that have a concrete impact on a decision being made (de Lancer Julnes 2009; Nielsen and Ejler 2008; Patton 2002) and includes the following components: (1) indisputable findings; (2) marginal programmatic changes; and (3) program stability (Weiss 1998). The second type of use, non-instrumental, refers to an important but less visible impact on the decision making process. Non-instrumental use has three categories: (1) conceptual use is when performance measurement information provides a clearer understanding of a program (Weiss, 1998), (2) persuasion is when performance measurement information helps to mobilize support, and (3) enlightenment is when performance measurement information leads to changes in views and actions (de Lancer Julnes 2009, 207). When the use of evaluative information was compared to the use of performance measurement, Nielson and Ejler (2008) found that performance

measurement usage was higher around instrumental use, particularly because actions based on the information could be done quickly and timely by program staff, and lower for non-instrumental or conceptual use. The authors believed that higher instrumental use also resulted in a higher level of organization learning and an established performance data review process that helped to “inform and improve performance” (Nielson and Ejler 2008, 180). Other researchers, however, have noted conceptual use of performance measurement information for program improvement and performance (GAO 2004; Hatry et al. 2003; Newcomer 2007). Moynihan et al. (2011, 149) stated that most researchers only examine one or two ways in which performance measurement information can be used and, as a result, come to different conclusions about the use of this information due to its different causes and effects. The authors recommend conceptualizing and measuring the different types of performance measurement use in a uniform way (Moynihan et al. 2011, 149-150). To better understand the types of uses related to performance measurement information, it is helpful to examine the ways in which it is being used in public organizations.

Ways in which Performance Measurement Information is Used

The definitions of performance measurement use above provide the foundation for considering ways this information can be used for managing and making decisions. Performance measurement information has been linked with supporting a variety of managerial purposes (Behn 2003; de Lancer Julnes 2009; Wholey and Hatry 1992). De Lancer Julnes (2009) groups these purposes into four broad categories: evaluation and understanding, motivation and mobilization, control and oversight, and improvement.

As a tool for evaluation and understanding, performance measurement information allows program offices to see how well they are doing towards addressing a certain problem or issue. One example can be seen in the GAO's (2005) review of the Department of Labor (DOL). The Employee Benefits Security Administration (EBSA), within the DOL, changed its standard operating procedure to address a customer satisfaction performance measure problem in an effort to improve results. EBSA provides assistance to people covered under private retirement, health and welfare plans, and others. Through a customer satisfaction survey, EBSA identified long investigation timeframes for customer inquiries during which information was rarely shared with customers. As a result, EBSA created a new referral procedure in efforts to keep customers better informed about the status of inquiries and to establish reasonable expectations regarding customer contact. Managers are monitoring customer satisfaction to see whether the change in procedure led to improved performance. In addition, DOL identified and provided targeted technical assistance to its employment and training programs in order to improve overall program performance. The information from the technical assistance was subsequently used for the second year project (GAO 2005, 9-10).

Performance measurement information can also serve as a control and oversight tool for managers and staff as a way to control the actions of an individual or an agency. The use of performance measurement information in this capacity is done by tracking and monitoring employees or agencies through several mechanisms such as employee performance agreements, guidelines or requirements, and performance contracting (Behn 2003; de Lancer Julnes 2009; Kamensky and Morales 2005; Heinrich 1999). GPRA

embodies the use of performance measurement information for control and oversight.

Federal agencies are required to track goals and objectives for its programs, and to submit strategic and performance to Congress and others with the intention that federal agencies would increase in accountability and effectiveness (Cavalluzzo and Ittner 2004; Mullen 2006).

Performance measurement information can serve as a tool to motivate and mobilize managers and others invested in the performance of the program. This can be done through providing incentives to help reach program goals and communicating progress of the program measures to both internal and external stakeholders (de Lancer Julnes 2009). The Veteran's Health Association (VHA) provides an example of performance measurement use as a motivating and mobilizing tool in federal agencies. The VHA has used performance measurement information to develop performance agreements and incentives for network directors as a way to identify the director's accountability toward particular goals and to monitor progress. The agency tracks the director's performance through a performance based review process, which links the director's pay and performance ratings directly to the program that he or she oversees. This process has assisted the VHA in defining the directors' goals for which they are held responsible throughout the year (GAO 2005).

Lastly, as an improvement tool, performance measurement information can demonstrate the program's value and help appropriately align resources to improve program performance (de Lancer Julnes 2009). The Department of the Interior, National Park Service (NPS), provides an example of performance measurement information used for improvement. One area in which the NPS management team has used performance

information is for training staff and modifying practices when needed. For example, a management team identified that there was a significant increase in “lost time” due to poison oak infection among staff. Through additional staff training on identifying and avoiding poison oak as well as initiating a practice of changing clothing immediately upon returning from the field, the number of “lost time” days decreased from 48 percent in 1997 to zero in 2002 (Kamensky and Morales 2005).

As illustrated in the examples above, performance measurement information can be used as an effective and valuable resource for monitoring and enhancing performance in federal programs. Unfortunately, based on the 2007 GAO survey, the degree to which federal programs use this information to manage program performance has not shifted significantly. Specifically, only about 50 percent of federal managers state using performance measurement information for various management activities (GAO 2008). Moynihan and Pandey (2010) noted that “without knowledge of why such use occurs, it becomes difficult to establish the conditions for performance management success” (pg. #). Identifying and understanding the factors that influence performance measurement use may help the process of integrating performance measurement information and management practices.

Influential Factors Associated with Performance Measurement Use

According to the GAO (2005), performance measurement information, when applied toward various management decisions, can improve a program and its results. The GAO created a model that identifies various practices that lead to the use of performance measurement information and, ultimately, to improved results. The practices and activities that contribute to use include: (1) leadership commitment; (2) aligning

goals, objectives and measures within the agency; (3) improving the usefulness of performance information; (4) developing capacity to use performance information; and (5) communicating performance information regularly and accurately (GAO 2005, 3). These practices fall within four decision and management areas in which performance measurement information can be used: (1) recognizing and addressing issues, (2) planning and allocating resources, (3) acknowledging and rewarding performance, and (4) communicating best practices (GAO 2005, 3).

In addition to the practices and activities identified by the GAO, there are several factors that have been noted as having an influence on the use of performance measurement information. One set of factors falls within the rational perspective. These factors also are known to influence managerial processes and include areas such as budget planning and decision-making, access to performance measurement information, goal setting and strategic planning (Ammons and Rivenbark, 2008; Clay and Bass 2002; de Lancer Julnes and Holzer 2001; Ho 2005; Poister and Streib 1999). Having available and adequate resources has also been identified as an influencing factor in the use of performance measurement information (Cavalluzzo and Ittner 2004; Newcomer 1997). Resources include having the time and staff to review and analyze the information, and providing appropriate training to ensure correct interpretation of the data. Additionally, organizations also need to allocate costs to developing and maintaining performance measurement systems (Cavalluzzo and Ittner 2004; Newcomer 1997). Due to the expensive nature of collecting data, managers should also be mindful of who will be using performance measurement information while determining the system's capacity (Grizzle 1982).

Another set of factors that influence the use of performance measurement information fall under the political or cultural realm of the organization. These factors include the involvement and support of stakeholders and leadership, attitudes toward use of performance measurement information as well as innovative and risk-taking efforts toward use. Encouraging and supporting the use of performance measurement information requires a change in the culture and environment of the organization. This change begins with the buy-in of organizational leadership and management as well as the value that is placed on the collected performance data (Cavalluzzo and Ittner 2004; de Lancer Julnes 2009; Newcomer 2007). Ho (2005) indicated that without the support for performance measurement information from leadership, managers will lose interest because they do not see any rewards or incentives for their investment of time and energy.

Organizational factors are also influential to the use of performance measurement information. These factors include the size, structure and roles and responsibilities within the organization which impacts the coordination and communication among the various organizational levels. Additionally, working through the bureaucratic fragmentation, policies and procedures within the organization can create challenges for using performance measurement information (Grizzle and Pettijohn 2002; Melkers and Willoughby 1995; Newcomer 2007). Grizzle and Pettijohn (2002, 68) found that bureaucratic structure was a critical factor in the successful use of this information. This factor consisted of two components: (1) organizational fragmentation which impacts coordination efforts and (2) standard operating procedures or budget routines for implementing legislation. The authors concluded that “[d]eveloping an institutional

capacity to use performance measurement information takes time” (Grizzle and Pettijohn 2002, 59).

It is evident through various federal performance initiatives that the government supports the use of performance measurement information in hopes that it will lead to informed programmatic decisions and management. These federal initiatives, as discussed below, have transformed over the years, beginning with a primary focus on accountability and evolving into the use of data not only for accountability and efficiency but also for improvement of program and agency performance.

Performance Measurement at the Federal Level

Historically, federal management reform efforts have tried to change the culture and context within which public managers work to ultimately increase government’s efficiency, effectiveness and accountability. These efforts have adopted strategies such as decentralizing government, downsizing government, cutting red tape, increasing administrative discretion, empowering workers, encouraging entrepreneurial behavior, managing for results, and increased attention to performance measurement to make accountability more transparent (Romzek 2000; Campbell 1993; Gore 1995; GAO 1995; Peters and Savoie 1996). These reforms or initiatives have also attempted to incorporate performance measurement into policies, program management and the budget process (Ho 2005; GAO 1997). Piotrowski and Ansah (2010) capture the essence of the federal reform initiatives stating:

Taxpayers, elected officials, and current and prospective federal government employees all have a vested interest in understanding the level of performance of federal agencies. Knowing how government is performing reinforces or weakens trust in government and in the social contract and ultimately shapes the relationship between the government and the general public. (109)

The past several decades have led to a significant increase in performance measurement and systems that support it in order to: (1) assess the impact grant funds have on federal programs; (2) improve performance; (3) create more accountability; and (4) assist with decision making processes (Cavalluzzo and Ittner 2003; de Lancer Julnes and Holzer 2001). The increase in performance measurement information is a result of several federal initiatives such as the Government Performance and Results Act (GPRA) of 1993, the Government Performance and Results Modernization Act of 2010 and the Program Assessment Ratings Tool (PART) that focused on improving the overall management of federal programs (Cavalluzzo and Ittner, 2004; de Lancer Julnes 2009; GAO 2011; Halachmi 2002; Kravchuk and Schack 1996; Radin 1998). Two specific federal performance efforts--budget-based performance efforts and results-oriented performance efforts--have succeeded in increasing the collection of performance measurement information at the federal level but appear not to have been as successful in getting federal programs to use this information (Cavalluzzo and Ittner 2004; GAO 2005; GAO 2008). The following section will provide a brief overview of performance budgeting and a review of the other efforts in chronological order.

Budget-based Performance Efforts

For several decades, federal initiatives have attempted to link budget decisions with program performance, known as performance budgeting (Posner and Fantone 2007). The performance budgeting efforts have been led primarily by the state governments; the federal government has been slower to embrace this practice (Gilmour 2007). Moynihan (2005) described performance budgeting as a way for federal agencies to obtain support

for program related information. This process is supposed to provide a clearer explanation to those with decision-making authority about the linkages among program performance, resources, and program results. Gilmour (2007) shares two main focus areas for performance budgeting: (1) to provide the best information possible to appropriately allocate resources, and (2) to change the organization in a way that helps to improve goals and results (Gilmour 2007, 128). Melkers and Willoughby (2005) hypothesized that when performance measurement information is considered a routine exercise in the government, there will be increased communication among various departments as well as better preparation to discuss program services, activities and budget allocations. However, efforts aimed at linking performance and budget did not appear to satisfy public officials and the general public (Moynihan 2005). Additionally, Joyce (1999) suggests avoiding the creation of another reporting exercise that can compromise the performance budgeting effort and cautions that one must be cognizant of the complexity in linking federal performance measures and the budget (Joyce 1999, 7).

The first budget-based performance initiative, the Budget and Accounting Procedures Act (BAPA), was created in 1949. BAPA allowed the President to include program activities in the budget submissions to Congress and to openly inform the public on how the federal funds were spent (GAO 1997). This was the first time federal agencies had to supply justifications along with their budget submissions. These justifications were to include performance information as well as a description of the programs and activities connected with each budget request. Rubin and Willoughby (2011, 5) described this as “an early effort to have federal agencies identify the resources necessary to reach their goals....”

In 1965, the Planning, Programming, and Budgeting System (PPBS) followed the BAPA. PPBS expanded the purpose and use of BAPA by creating a decision structure within the federal budget process to examine performance against goals and objectives nationally (Schick 1966; GAO 1997). To accomplish this, PPBS tried to use a rational approach by creating a link between agency needs and required resources. In turn, federal agencies had to explain performance in their budget proposal. This approach provided decision-makers with the ways that federal programs planned to reach their goals and objectives based on associated costs and the program's effectiveness. Deemed unsuccessful by some performance budgeting experts, the PPBS was terminated in 1971 (Rubin and Willoughby 2011, 6).

In 1973, Management by Objectives was introduced and focused on enhancing management at the federal level and creating a linkage between objectives and budget (GAO 1997). This program effort built upon the previous initiatives by holding federal management responsible for meeting agreed upon goals, measures, and results as well as the President's objectives. The Office of Management and Budget (OMB) provided oversight and guidance to program offices and met regularly to discuss progress, challenges, or changes to the established objectives (GAO 1997).

In 1977, the Zero-Based Budgeting (ZBB), the fourth performance budgeting initiative, was created. The purpose of this initiative was to prioritize the budget with results from the programs which were then compared with other agencies to achieve the conceptual association between program results and budget resources (Sherlekarf and Dean 1980; GAO 1997). Conceptually, federal agencies were to start at the beginning of the budget planning process with a zero value for a line item as opposed to starting from

the previous year's budget balance (Rubin and Willoughby 2011, 6). Both ZZB and PPBS attempted to link program results and budget information together. Unfortunately, these efforts did not succeed in changing resource allocations within federal agencies. Joyce (1993) ascertained, however, that lessons could be gained from these efforts. One lesson indicated that these budget systems may go against traditional budget practices and would be more prone to opposition. The second lesson was to ensure the inclusion of staff involved with inputting information into the budget system. Equally important was to work towards reaching mutually agreed upon goals and objectives. The last lesson, based on the lack of use of data, was to realistically consider how performance information will be used and how the system will operate prior to the requirement process (Joyce 1993).

The most recent effort linking performance and budgeting was the creation of the Performance Assessment and Ratings Tool (PART) process by the OMB in 2001. PART, a component of the 2001 President's Management Agenda or PMA, was developed to help enhance program performance and management at the federal level. Specifically, PART provided a way to connect program evaluations to budget needs (Moynihan 2005; GAO 2003). Additionally, PART created more emphasis on goals and measurement at the program level (Metzenbaum 2009). Described by Mullen (2006) as a way "to strengthen the process for assessing the effectiveness of programs by making this process more robust, transparent, and systematic" (80), PART covered four main areas: program purpose, structure, management, and results. PART was developed in collaboration with program offices and OMB and drew upon various sources such as program legislation, the Government Performance and Results Act (GPRA) materials, financial reports, and

program evaluations (Mullen 2006). Gilmour (2007) observes that, though built upon GPRA performance information, there have been challenges to implementing PART. These challenges include agencies and departments working together towards success, communicating accomplishments, developing appropriate measures, and linking performance to outcomes. Performance budgeting reform efforts required federal agencies to seriously consider performance in order to be efficient and effective with funding. These efforts also provided the opportunity for federal agencies to consider associating performance with results or outcomes in addition to budgets.

Results-oriented Performance Efforts

The 1990s provided an era of renewed interest in performance measurement based on the improved program outcomes and with the goal of holding federal agencies accountable to legislatures and the public (Frederickson and Frederickson 2007; Poister and Streib 1999). This renewed interest provided a different approach from the traditional attempt to link performance and budgeting. Poister and Streib (1999, 326) described this timeframe as one marked by taxpayer uprisings, potential privatization of government-supported services and increasing responsibilities to lower levels of government. It also created new ideas related to performance in federal agencies (Poister and Streib 1999).

In addition, this shift was a way to change the behavior of public officials with the assumption that performance measurement information is used towards performance improvement through their program management and resource allocation efforts. Additional assumptions made by policy makers around results-oriented reform included the notion that use of performance measurement information is one dimensional and that simply having this information available will help federal agencies (Moynihan et al.

2011, 149). Furthermore, these reforms have been shaped in ways that only require federal managers and staff to develop and share information without actually using it to improve program performance (Moynihan et al. 2011; Radin 2006). In spite of questioning the use of performance information, federal efforts regarding results-oriented performance which began with the National Performance Review (NPR) in the early 1990s still persists .

In 1993, NPR was developed to change administrative norms through empowering federal staff and making the public their priority. The NPR also initiated the comparison of practices, philosophies, and performance measures among federal agencies, mandating a definition for results-oriented goals and collection of performance measurement information (Kates, Marconi, and Mannle Jr. 2001; NPR n.d.). Specifically, this study, which lasted for six months, was a review of how federal agencies operated and provided suggestions regarding management changes for federal programs creating a shift towards “mission-driven, results oriented budgeting” (Joyce 1993, 6). The study produced a few key recommendations which included an adjustment to the structure and operations in federal agencies by putting customers first, empowering employees and eliminating the red tape and processes that are not needed (Rainey 2003, 408-9). The study also recommended the need for a strategic plan, for agencies to develop performance measures, objectives and results that represent key aspects of their budget and to hold managers accountable for outcomes (Joyce 1993; Rainey 2003). Though considered a controversial reform within the public administration field, Rainey (2003) found that NPR “represented a historic initiative in the pursuit of improved performance

management” (411). The impact of NPR is best reflected in the next results oriented performance effort with the implementation of GPRA.

Continuing efforts toward enhancing accountability, performance, and budget allocations at the federal level included the implementation of the GPRA of 1993 (Gilmer 2006). Public Law 103-62 states that the goal of GPRA is to “improve Federal program effectiveness and public accountability by promoting a new focus on results, service quality, and customer satisfaction” (1993). Cavalluzzo and Ittner (2004) described GPRA as an effort built on “the assumption that mandated reporting of results-oriented, strategic performance indicators can improve governmental efficiency and effectiveness by increasing the accountability of public managers” (245). Additionally, GPRA also focused on doing more with less in a continuous effort to hold federal agencies accountable and improve performance (Osborne and Gaebler 1992). Interestingly, GPRA was different from previous performance measurement efforts in several ways and represents an unfamiliar shift in the paradigm of most federal programs by pairing performance measure outcomes with program activities and budget allocations (Newcomer 1997; Kates, Marconi, and Mannle Jr. 2001). GPRA was the first initiative that was enacted as legislation and not an executive order. It also provided Congress with a built-in role which is not normally found in federal reform efforts. For the first time, agencies were required to have strategic plans, with goals and objectives, and performance plans for tracking progress toward achievement of annual goals and objectives to meet GPRA requirements. The goals included an initiation of program performance reform as well as improvement in areas such as program effectiveness and public accountability, internal management, the public’s confidence, and service delivery

(Mullen 2006; GAO 1997; U.S. Government Printing Office [GPO] 2004). Specifically, the strategic plan for GPRA focused on six elements: (1) the mission of the agency, (2) the Agency's goals and objectives, (3) ways in which the Agency plans to achieve goals and objectives, (4) linkages between long term and annual goals, (5) discovery of external factors that could potentially affect goal achievement, and (6) how the program evaluation will be used to develop and revise goals and objectives and plan for future evaluations (GAO, 2004).

Federal agencies have reported both successes and challenges with meeting GPRA requirements (GAO 2004; Newcomer 2007). One of the successes of GPRA includes an increase in the federal government's ability to develop strategic plans, performance measures and accountability reporting (GAO 2008). Another success has been the slow but increasing inclusion of performance planning into the organizational culture of federal agencies (GAO, 2008, 4). On the other hand, one of the challenges GPRA confronted was that there had been no significant change in use of performance measurement information around budget allocations. Additionally, another challenge has been a decrease in federal managers using performance measurement information for finding new program approaches or work processes which affect the potential to make performance improvements (GAO 2008, 4). These changes may be reflective of what Kates, Marconi, and Mannle Jr. (2001, 146) describe as "behavioral and analytical" challenges that public managers and staff face with GPRA requirements. These challenges involve the shift from traditional methods of tracking staff and program activities to demonstrating programmatic results. In addition, varying "health infrastructures, market dynamics, epidemiology and demographics" make it difficult to

connect federal level activities to effects at the local level (Kates, Marconi and Mannle Jr. 2001, 147). Coupled with federal services that are provided at multiple facilities with diverse funding streams, socioeconomic and cultural elements as well as personal behaviors, it is hard to associate a specific federal program activity with local or client-level outcomes. Kates, Marconi, and Mannle Jr. (2001, 147) described this as “problem of attribution.” Similarly, the concept, “problem of aggregation” (147) is the challenge of relating local or client-level outcomes to larger and purposeful categories (Kates, Marconi and Mannle Jr. 2001). This is significant considering that measuring outcomes or results is done at the program level; however, “the regulatory attention of GPRA is focused on Cabinet-level departments and independent agencies” (Kates, Marconi, and Mannle Jr. 2001, 147). As a result, the purpose or value of GPRA may be questioned by federal managers and staff.

Some of the literature regarding GPRA stated that it failed to adequately link decision making with performance information (Moynihan 2005; Radin 2000). Additionally, there was a general concern that agencies were not setting their performance targets high enough, that the measures were not outcomes-based and that not enough attention was given to the fact that federal agencies were “measuring the performance of third-party implementation” (Frederickson and Frederickson 2006, 38). The passage of the Government Performance and Results Modernization Act of 2010 (GPRMA) attempted to address some of these failures and hoped to move from federal agencies collecting performance data to having them use this information in their decision and management practices.

Griffith and Dechter (2011) noted that GPRMA restructures the previous GPRA process and was designed within a data-driven framework. The mandate for this new act is to establish clear goals, create a plan to reach them, track progress, and hold federal managers accountable (Griffith and Dechter 2011, 2). Based on past research, the GAO (2011) proposed that GPRMA can assist in overcoming challenges in five key areas: (1) having a more coordinated and cross cutting approach to achieving meaningful results, which can help to inform reexamination or restructuring efforts toward efficient service delivery; (2) addressing weak components in management functions in an effort to have better implementation of policies and programs; (3) ensuring performance measurement information is both used and useful in the decision making process by making sure the information is complete, accurate, timely and valid; (4) having committed leadership that will be accountable for results; and (5) working with Congress to identify and address management and performance issues (GAO 2011).

Challenges Associated with the Use of Performance Measurement Information

In spite of federal performance efforts and knowing ways in which performance measurement information can be used, it does not come without challenges. Managers and staff in federal agencies are required to follow legislative mandates, meet competing requirements, work within the constraints of complex, intergovernmental programs, and involve stakeholders, all of which needs to be considered in order to determine what needs to be measured (Cavalluzzo and Ittner 2004; de Lancer Julnes 2009; Newcomer 1997; Radin 1998). In addition, Frederickson and Frederickson (2006) clearly summarize the growth of third party entities (i.e. federal contractors and grantees) within federal agencies and the challenges they pose for the use of performance measurement

information in their book, “Measuring the Performance of the Hollow State.” Described as “the public administration challenge of our time,” the evolution of third party governance has gradually shifted managerial and service delivery responsibilities from federal managers and staff to grantees and contractors (Dubnick and Frederickson 2010, 143). In addition, O’toole and Meier (2004) noted that varying policies and third party arrangements indicated that each agency and federal program may also have distinct accountability agreements in place.

Behn (2003) examines performance measure challenges from the perspective of managers and stated that “[a]ll of the reliable and valid data about performance is of little use to public managers if they lack a clear idea about how to use them or if the data are not appropriate for this particular use” (587). An example of this challenge can be found in Cavalluzzo and Ittner’s (2004) study which suggests that data limitations (e.g. data availability, reliability and associated expenses) affect a manager’s ability to actually use performance measurement information in the decision making process. The authors also found that challenges in creating and understanding performance measures have a negative effect on performance measurement use (Cavalluzzo and Ittner 2004).

Theoretical Framework

The practice of actually using performance measurement information for decision and management practices appears not to have progressed as much as expected. Performance measurement literature provides some ways in which performance measurement information is being used in public agencies and has identified challenges that seem to affect use. However, the slow progression of implementation or actual use leads one to wonder under what circumstances they are being used and by whom. If

researchers, as Moynihan et al. (2011, 149-150) indicated, are only targeting one or two types of performance measurement use and disregarding other forms of use, it may be time to examine use from a broader perspective. This study was approached with a couple of assumptions. One assumption is that the use of performance measurement information is broader than just instrumental use and that non-instrumental use of information also occurs in federal programs. The other assumption is that organizational complexity, rational and technocratic factors and political and cultural factors influence the use of performance measurement information within a federal agency. This section consists of examining what constitutes use of performance measurement information, the purposes for using it and the factors influencing the use of this information for management and decision making practices. Exploring use of performance measurement information from a broader perspective as well as considering factors that influence use within federal programs provides valuable insight to public administrators on ways to incorporate performance measurement information into their organizational practices.

What Constitutes Use?

The underlying purpose of this study was to examine the factors that influence the use of performance measurement information in a federal agency. In addition to these factors, it is also important for one to consider how use is defined, especially when the focus of using performance measurement information is to enhance program management and decision making practices. As previously noted, research studies examining the actual use of performance information, particularly at the federal levels, are minimal and how the information is used remains a mystery (Moynihan and Ingraham 2001). Moreover,

studies regarding the use of performance measurement information have had a rational and direct approach towards decision and management practices. Examples of using information in this capacity include use as a communication tool and having the information accessible (Rinne, Lyytimaki and Kautto 2012). However, other studies have noted the intermittent nature in which this type of use may actually occur (Bauler 2012; Rinne, Lyytimaki and Kautto 2012). Another type of use, non-instrumental use, has been noted in the literature as playing an important role in managing performance. This type of use focuses more on using performance measurement information as a tool for learning and understanding to guide program management (Rinne, Lyytimaki and Kautto 2012; Weiss 1999).

The field of program evaluation has provided valuable insight on information use and provides a broader interpretation of use that includes instrumental and non-instrumental use. Instrumental use is defined as information that has an observable effect on decisions such as programmatic changes and staff training (de Lancer Julnes 2009; Weiss 1999). Weiss (1999, 23-24) explains that instrumental use occurs when information is not contentious, where relatively small changes are needed and when there are no major changes to organizational leadership, funding levels, target population and external support. Non-instrumental use, conversely, includes using data conceptually, persuasively, and politically (Bauler 2012; Rinne, Lyytimaki and Kautto 2012; Weiss 1999). Conceptual use is defined by Weiss (1999) as using information for the purpose of having a greater understanding of the organization for decision making purposes. Persuasive use, sometimes referred to as political use, of information refers to legitimizing or justifying support to uphold a decision or stance on an issue (de Lancer

Julnes 2009; Rinne, Lyytimaki and Kautto 2012). Based on this information, one can assume that both instrumental and non-instrumental use of performance measurement information play essential roles in assisting with management and decision making practices. In addition, it can also be assumed that different types of use are influenced by different factors. Therefore, one can posit:

Hypothesis (H1): Use of performance measurement information consists of both instrumental and non-instrumental use and each type of use is influenced by different factors.

This hypothesis is further supported by the burgeoning literature on organizational learning. Organizational learning represents the organization's ability to learn in order to make improvements and changes. More specifically, it "is a set of activities designed for organizational improvement in processes initiated by the learning organization" (Scott-Ladd and Chan 2004, 98). Srimai, Damasaman and Bangchokdee (2011) furthered the previous definition from the perspective of performance measurement, stating that organizational learning can assist in reinforcing managers and staff "to work, collaborate and share information ...with the aim to achieve...goals" (58). Benefits to organizational learning include organizational improvements and changes related to being more efficient, productive and innovative. However, there are some challenges that should be noted as well. One challenge is depicting achieved outcomes as learning outcomes when these two areas are not linked. This is known as superstitious learning. Presuming or anticipating that activities and processes which worked previously will work for the future has also been identified as a challenge to organizational learning and is called success learning. The last challenge is known as competency traps and represents when

an organization does not utilize available technology to achieve its results (Scott-Ladd and Chan 2004, 97).

Several aspects of learning have been noted as the framework for learning organizations. One aspect is systems thinking which examines various processes and activities as combined efforts to enhance the decision making practices. Personal mastery represents the next aspect of organizational learning and refers to on-going learning opportunities for organizational managers and staff has the capacity through appropriate knowledge and skills. Mental models are the third aspect of organizational learning and signify individual worldly perceptions and beliefs. Similar to mental models is a shared mental model which represents a shared vision or direction by managers and staff of the organization's goals. Lastly, team learning is an aspect that centers on contributions from managers and staff toward its ability to reach its intended results (Scott-Ladd and Chan 2004).

In addition to the framework, there are factors that are indicative of continuous learning within an organization. These factors include organizational culture, organizational strategy, organizational structure and environment. The culture of an organization is representative of shared ideas, assumptions and practices and is linked to organizational actions and decisions as well as its openness to change (Fiol and Lyles 1985). Organizations that are conducive to learning appear to be more likely to use performance measurement information for better understanding of the organizational practices and, in turn, can use this information in the future to make better informed decisions. This represents non-instrumental use of performance measurement information. An organization's strategic position, another factor related to organizational

learning, is based on the organization's flexibility towards learning and the parameter it has for making decisions (Fiol and Lyles 1985). An organization's capacity and available resources also affects the organization's ability to implement its strategy (Berman and Wang 2000). For example, Daft (2001) distinguishes traditional organizations versus learning organizations in which traditionally-based organizations aim for effective and efficient performance and its strategy comes from organizational leadership. This type of organization is normally hierarchical in nature, with a centralized decision making process, and lends itself to instrumental use. Learning organizations, however, work collaboratively with managers and staff to cultivate its strategies, have a decentralized decision making process including a culture that supports involvement, (Daft 2001) and are more representative of non-instrumental use. In addition, shared information, representing one of the purposes of learning organizations, encourages participation from internal and external stakeholders and influences the non-instrumental use of performance measurement information for increased understanding and learning opportunities (Daft 2001; Rinne, Lyytimaki and Kautto 2012). Moreover, unstructured political realms, which are also associated with non-instrumental use, allow for different perspectives to come together for shared understanding, discussion and redesign. As a result, Rinne, Lyytimaki and Kautto's (2012) study, which examined the use and influences of sustainable development indicators, acknowledges the significant role that non-instrumental use has in the performance measurement process. This type of use is conducive to the structure and practices of learning organizations.

The structure of an organization also plays a key part in the latter aspect of organizational learning as well as decision practices. Similarly, the environment is also

influential in learning organizations and the level of environmental complexity could impact whether organizational learning occurs. Mechanistic organizations, for example, are more likely to use previous beliefs in the learning process which makes them efficient but less flexible to new ideas and patterns. Meyer suggests that "formalized and complex structures retard learning but that learning is enhanced by structures that diffuse decision influence" (1982, 533). This, in turn, may influence the organization's use of performance measurement information toward an instrumental perspective in which information is used directly for decision making such as reporting or direct programmatic changes. Organic organizations, on the other hand, appear to have more flexibility related to ideas and associations which indicates that this structure may be more conducive to organizational learning and "reflective action-taking" (805) towards decision making. This may be indicative of non-instrumental use of performance measurement information towards understanding and mobilizing programs (Fiol and Lyles 1985).

There are several reasons why the use of performance measurement information should be examined through both instrumental and non-instrumental perspectives. One reason is that both types of uses are interrelated within organizations. Organizations use performance measurement information across the spectrum of observable and unobservable patterns. Habersam, Piber and Skoog (2012) refer to instrument use as direct effects that influence management practices. Their study examining the use of knowledge balance sheets in Austrian universities indicates that there was only a modest direct effect on university decision making when using this information. Interestingly, indirect effects, or non-instrumental use associated with the knowledge balance sheets, played a much bigger role in the universities' decisions and management practices based

on having a greater understanding of their organizations. In turn, understanding the organization through the use of knowledge balance sheets helped to increase accountability. This example may be indicative of organizational use of performance measurement information in which using the information non-instrumentally through understanding and learning leads to using the information for instrumental purposes such as accountability. Additionally, Newcomer (1997, 337) acknowledged that, in complex organizations, people use the performance measurement data for different purposes and at points in time. For example, the author's study on the effect of program performance assessments on program management in the federal government found that program managers involved in the Federal Performance Project reported using performance information to both improve and understand their programs representing both instrumental and non-instrumental use. Similarly, Bauler (2012) shared that instrumental use "has only a limited potential in multidimensional and multi-scale decision-making situations" (Bauler 2012, 7) suggesting that there is a need for non-instrumental use of performance measurement information. Based on this information, one can assume that, in order to make informed decisions, use of performance measurement information must occur both instrumentally and non-instrumentally.

The lack of recognition in public administration literature regarding the role that non-instrumental use of performance measurement information has in the management and decision making processes is another reason to consider use from both perspectives. This lack of recognition also negates the fact that actual use is occurring within organizations. The few studies that have examined performance measurement use from a broader perspective have found that non-instrumental use occurs as much, if not more,

than instrumental use (Habersam, Piber and Skoog 2012; Rinne, Lyytimaki and Kautto 2012; Franco-Santos, Lucianetti and Bourne 2012). An example in which information is used from a broader stance is appreciative inquiry. The appreciative inquiry approach, which comes from the field of evaluation, relies on a culture of organizational learning and understanding in order to achieve organizational effectiveness (Coghlan, Preskill and Catsambas 2003). Using as its foundation “perceptions and shared understanding” (Coghlan, Preskill and Catsambas 2003, 9), appreciative inquiry approach provides a new perspective toward decision making practices. This approach, in turn, can also be used to cultivate both the instrumental and non-instrumental use of performance measurement information within organizations.

Lastly, an awareness of which factors influence use can only occur by understanding the purposes associated with instrumental and non-instrumental uses of performance measurement information. De Lancer Julnes (2009) explored performance measurement utilization by examining factors that influence the implementation (knowledge converted into action) of performance measurement information. The implementation framework is based on the foundation that, when purposes of use are carried out, knowledge implementation occurs. De Lancer Julnes (2009) suggested a framework that shows four purposes that are linked to the use of performance measurement information including: accountability, improvement, understanding, and mobilization. The purposes related to the use of performance measurement information follow a continuum from instrumental use to non-instrumental use.

Instrumental Use

Instrumental use of performance measurement information is associated with use of information for accountability purposes and program improvement.

Accountability

As demonstrated in previous reform efforts, the ability to increase governmental accountability as well as improve decision making skills remains at the forefront for government agencies (Ittner and Larcker 1998; Cavalluzzo and Ittner 2004). The goal of accountability is to improve service delivery; however, in terms of performance measurement, accountability involves a level of oversight and compliance in which there is accurate program logic for service, adequate goals and objectives, and non-complex services (de Lancer Julnes 2009, 232-33). Seen as a challenge for management, accountability is also considered an answer to government performance but raises questions about who is responsible, particularly where there are multiple levels of leadership (Romzek 2000). Various government leaders hold different levels of organization accountable and these levels, in turn, are used to hold public employees responsible. Federal managers and staff, however, have many opportunities to exercise discretion in the course of their work which may impact the role of accountability (Lipsky 1980; Romzek 2000). Halachmi (2002) looked a step further and linked accountability to performance by asking the question whether performance measures can serve two purposes--better accountability and improving productivity. The author believed that the essence of performance measurement is about the exploration and knowledge gained from experience and that performance measures solely focused on accountability cannot fully evolve into effective and comprehensive performance

information. Similarly, performance measurement itself does not establish causal linkage and may not be appropriate for addressing demands for accountability (de Lancer Julnes 2006). Moreover, Dubnick and Frederickson (2010) considered accountability against the complexities of federal agencies and emphasized that “[t]he strength of agency accountability to program goals is in reverse ratio to the distances actual implementation travels and the layers of third parties through which implementation travels” (151).

In spite of the potential challenges, Cavalluzzo and Ittner (2004) found that greater use of performance information exists when efforts related to performance measurement and accountability are placed together. Mears and Butts (2008) highlighted this further by identifying accountability as a key component of performance measurement and monitoring that helps to answer major questions regarding required services that were offered, the implementation of policies as intended, and the effectiveness of policies. Ways in which accountability has been operationalized in the literature for the purpose of instrumental use of performance measurement information have been as a reporting tool and a communication tool (Cavalluzzo and Ittner 2004; de Lancer Julnes 2009; GAO 2003; Poister and Streib 2005). Given this information, one can assume that having appropriate resources and access to information would influence the use of performance measurement information for this purpose. In addition, the levels of review and approval required for making decisions within an organization would also affect performance measurement use.

Program improvement

In addition to accountability, performance measurement information has also been used for the purpose of program improvements (Behn 2003; Newcomer 2007; de Lancer

Julnes 2009). Holzer and Yang (2004) acknowledge the use of performance measurement information as a tool “to help establish goals and measure results, estimate and justify resource requirements, reallocate resources, develop organization improvement strategies and motivate employees to improve performance” (16) . The authors further noted that there have been efforts toward using performance measurement information for improvement but have had minimal resources to support its use (Holzer and Yang 2007). Behn (2003) explained that in order for organizations to improve, there needs to be the capacity as well as a willingness to incorporate lessons from what has been learned. However, a challenge associated with program and performance improvement is identifying which organizational changes will lead to improvement and determining the best way to implement those changes (Behn 2003). Using performance measurement information for improvement also helps program offices identify the areas in which adjustments and changes are needed. When used for this purpose, improvement is considered an instrumental use of performance measurement information. An example regarding use of performance measurement information for the purpose of program improvement can be found in the Hatry et al. (2003) study on how federal programs use outcomes data. The authors found several case studies noting the use of this information for program improvement and categorized the activities associated with improvement as a corrective action which included items such as identifying problems, developing action items and training materials, and providing technical assistance. Given this information, one can expect that organizational capacities such as adequate funds, staffing, training and information would influence the use of performance measurement information for program improvement.

Non-Instrumental Use

Ways in which performance measurement information is used non-instrumentally are demonstrated through the purposes of understanding and mobilization.

Understanding

Understanding represents a purpose in which performance measurement information may be used non-instrumentally. Performance measurement information used in this capacity provides federal programs an opportunity to learn more about what program activities may or may not be working (Behn 2003; de Lancer Julnes 2009; Weiss 1998). In addition, Weiss (1999) notes that information as a tool for understanding allows program managers and staff to gain new ideas and insights from this information even when they are not able to apply it to their decision making at that time (Weiss 1998, 24). With this knowledge, performance measurement information can help answer what a program does, how it works, and why a program is doing well or not. For example, having a clearer understanding of the program also helps program offices re-align budgets and program resources more appropriately (Behn 2003; de Lancer Julnes 2009). Similarly, creating a positive learning environment helps to encourage understanding through performance measurement information for program improvement. Furthermore, fostering learning within organizations “can help change assumptions and perceptions” as well as “lead to more informed decisions” (de Lancer Julnes 2009, 216). A potential drawback for understanding as a purpose is that having too much performance measurement information may lead to the inability of managers and staff to learn anything from it, known as the Data Rich but Information Poor, or DRIP, syndrome (Behn 2003; Poister and Streib 1999). In spite of the potential drawback, various studies

have reported the benefits of using performance measurement information for creating an organizational culture of learning and understanding which leads to improved program performance (Behn 2003; Carpinetti, Gerolamo and Galdamez 2007; Weiss 1999). The above information indicates that organizational culture may be influential in the use of performance measurement information for the purpose of understanding.

Mobilization

Performance measurement information has also been used from a non-instrumental perspective for the purpose of mobilization. Performance measurement information used for this purpose helps to validate and legitimize support for positions already made in the program (de Lancer Julnes 2009). Behn (2003) noted that performance information can also help contribute to promoting, motivating and celebrating how well a program is doing to both internal and external stakeholders. One of the most commonly cited examples of mobilization as a purpose for performance measurement information is budget justifications. An example of this can be found in the federal agencies. These agencies are required to submit budget justifications that include GPRA performance measures at several points in the year to their respective departments, Office of Management and Budget, and to Congress. Federal agencies use these reports to justify program funding each year. In addition to budget justifications, Beyer and Tryce (1982, 600) refer to use for the purposes of mobilization as symbolic and state that program managers and staff may not even realize that they are using performance measurement information to justify or validate a decision instead of making a decision. The authors also note ethical concerns related to use for the purpose of mobilization. One ethical concern was that researchers assisting with the performance measurement process

may become tools to help managers validate programmatic decisions. The other ethical concern related to users of performance information, who may distort research results to support programmatic decisions (Beyer and Tryce 1982, 601). In spite of the concerns, using performance measurement information for mobilizing actions and decisions can garner support for current or proposed program activities (de Lancer Julnes 2009).

As noted above, instrumental use reflects visible and concrete uses of performance measurement information for program management such as redistributing funding and staff resources. This type of use is attributed to the purposes of accountability and program improvement. Non-instrumental uses, on the other hand, are associated with indirect, less obvious ways in which performance measurement information is used in organizations such as for learning, understanding and rationalizing program management and decision-making processes (de Lancer Julnes 2009; Weiss 1998). Therefore, valuable insights can be gained by examining the use of performance measurement information from the perspectives of instrumental and non-instrumental use as well as assessing the factors that influence these types of use.

Factors that Influence Use of Performance Measurement Information

In addition to the types of use of performance measurement information, there are several factors that influence performance measurement use. Research regarding performance measurement use models has included influencing factors such as leadership, organizational culture, political and rational factors. Building upon the performance measurement information framework developed by de Lancer Julnes (2009), the factors examined were organizational complexity, rational/technocratic factors, and political/cultural factors.

Organizational Complexity

Organizations and their structure represent the inner workings of processes, rules, communication, and power distribution (Burns and Stalker, 1961; Courtright, Fairhurst and Rogers 1989; Hall 1972; Schmink 2001). Hall (1972) also notes that the structure of an organization guides the influences of people who work within the structure. The original structure of an organization was rational, linear, and hierarchical in nature, known as a classic bureaucratic framework. Currently organizational structure consists of both traditional and non-traditional approaches to management and decision making in organizations. Traditional approaches to organizational structure examine the relationship among organizational components. Non-traditional approaches, on the other hand, bring together visible and non-visible organizational components as a complete unit (McMillan 2002). McMillan (2002) pointed out that the purpose of an organization is in jeopardy if its structure is not aligned with the organization's purpose.

In addition to the approaches, organizational structure involves a variety of dimensions and degrees that reflect the intricate and sometimes complex nature in which organizations manage and make decisions. There are several dimensions of organizational structure which Daft (2001) describes within two categories: structural dimensions and contextual dimensions. Structural dimensions relate to the internal aspects of the organization. One internal aspect, formulation, pertains to the use of written rules and procedures within the organization (Daft 2001; Frederickson 1986). These documents include standard operating procedures, regulations, and manuals (Daft 2001). Another aspect of structural dimension is specialization which is the extent to which organizational tasks for performance measurement are divided within the program

office (Courtright, Fairhurst and Rogers 1989; Daft 2001; Daft and Lengel 1986; Hoque and James 2000; Radin 1998; Schminck 2001). Hierarchy of authority represents a third aspect of structural dimension and relates to the span of control among staff and their supervisor (Daft 2001). Centralization, the fourth aspect, is the degree to which the right to make decisions and evaluate activities is concentrated (Frederickson 1986). Lastly, professionalism reflects the level of education and training among employees (Daft 2001).

Contextual dimensions involve aspects of the whole organization and include both internal and external aspects of an organization. Size is one aspect of contextual dimension that reflects the number of people working in the organization and has been associated with the procedures and controls that are in place within the organization, the hierarchical nature of the organization, and the centralization (or decentralization) of decision making and workflow (Hoque and James 2000; Hall 1972). Another aspect of this dimension is the environment which represents facets that are outside of the organization such as citizens and elected officials. A third aspect of contextual dimension is organizational technology which relates to the various systems, tools and techniques used to produce products and services (Daft 2001, 18). Building on the dimensions within organizational structure, Schminck (2001) describes two varying degrees of structure--mechanistic organizations and organic organizations. Most, if not all, of the organizational structure dimensions noted previously help to shape organic and mechanistic organizations (Tung 1979). Burns and Stalker (1961) described these types of organizations as being the “two polar extremities” of how organizations form and

function in response to their environment. In addition, they are both representative of a “‘rational’ form of organization” (209).

Mechanistic organizations represent a large, procedurally-based bureaucracy in which the ability to make decisions is centralized and staff have little authority in the process (Courtright, Fairhurst, and Rogers 1989). Burns and Stalker (1961, 209) characterized these organizations as stable, hierarchical and authoritative structures that come together under one position in which the relationships and specialized tasks of other positions help the organizations function (209). Russell and Russell (1992) described these organizations as centralized where information travels up through the organizational levels before being approved, noting that the impact of a formalized practice limited innovate ideas and the availability of resources. When examining performance measurement use, Moynihan (2009, 593) found that managers and staff tend to react passively to using performance measurement information due to the hierarchical nature within the organizations. In addition, the incentives and penalties for not using this information are low. Sharfritz and Ott (1999) found, however, that hierarchical or mechanistic organizations are efficient, creative structures that rationalize productivity and improve morale (Sharfritz and Ott 1999, 245). Similarly, Tung (1979) states that the decision making process in mechanistic organizations tends to be routine due to the accessibility of information, standardized rules and procedures and having a stable environment.

Organic organizations, in contrast, are usually smaller in size, have a decentralized, dispersed, approach to decision making, and allow for more flexibility and employee involvement (Courtright, Fairhurst and Rogers 1989). Under a decentralized

structure, Russell and Russell (1992) find that managers and staff have more independence and power over resources. Additionally, high levels of uncertainty with equally high demands for information appear to work better in an organic organization (Russell and Russell 1992). Likewise, Burns and Stalker (1961) find that organic organizations work best in changing environments and are identified as having a network control structure, with stratified positions based on experience, as opposed to the autonomous control structure and horizontal communication flow. Moreover, Halachmi (2005) states that organic organizations have the ability to enhance productivity and that their structure allows for innovation, change and risk-taking. Based on this information, it appears that the culture of an organization directly relates to the decision-making practices in organic organizations. In addition, one can assume that the decentralized structure may affect the organization's use of performance measurement information based on its approach to decision-making. Federal agencies are grounded in bureaucratic structures where information is sent to various levels, based on its hierarchical structure, in order for decisions to be made. Given this structure, rational, linear decision-making practices may occur more often in mechanistic organizations than organic organizations. The approaches, dimensions and degrees of organizational structure that have been discussed indicate the varying levels of complexity within organizations. Both internal and external environments impact the complexity of an organization. Dooley (1999) describes organizational complexity and environment in the following way:

Organizational complexity is considered a response to complexity within the internal or external environment. The internal environment consists of the processes and technologies that constitute the core operations of the organization. The external environment includes customers, markets, suppliers, competitors, and institutions that shape what the organization must respond to. The complexity of the internal and

external environment can be described along three dimensions: its differentiation or variety, its dynamic properties, and the complexity of its underlying causal mechanisms. (7)

Considering the various ways in which organizations are structured in order to achieve their goals, there are also various levels of complexity that can occur internally. Glenn and Malott (2004) believe that organizations deal with complexity by spending a lot of time in meetings and making transitory decisions. More often, complexity is an organization's response, through its structure, for addressing internal or external environmental factors (Dooley 2002, 7).

Organizational complexity involves several factors including the number of levels, divisions, and activities within the organization (Daft 2002; Hoque and James 2000). Dooley (2002, 2) digs a little deeper and describes organizational complexity "as the amount of differentiation that exists within different elements constituting the organization." Anderson (1999, 216) and Galbraith (1982) assert that organization theory and organizational design consider complexity as a structural variable that attempts to align with environmental and technological complexity through three elements--vertical complexity which reflects the number of levels within an organization, horizontal complexity which is the number of departments and specializations within the organization and spatial complexity which reflects the number of geographic locations of the organization. In addition to organizational complexity within an internal environment, Glenn and Malott (2004) found that when there are changes in the external environment, adjustments are sometimes needed within the organization; similarly, when there are changes in the organization, there may be an impact to the environment. For example, the authors refer to the impact a federal regulation change to assist the public in making

healthier choices had within federal agencies. This regulation required the United States Food and Drug Administration and Department of Agriculture to make major adjustments within their structures and processes (i.e. packaging and labeling, quality control activities and others) in order to standardize nutritional labels on packaged foods (Glenn and Malott 2004). Unfortunately, Dooley (2002) notes that there are times when increased organizational complexity can have negative consequences. These consequences include omitting information, making errors and assumptions as well as minimal incentive to use or learn from performance measurement information.

There is clear evidence in the literature regarding various perspectives of organizational complexity; however, less is known about the influence organizational complexity may have on the use of performance measurement information. There are three consistent factors in the literature associated with organizational complexity and performance measurement information: levels of involvement, formulation and specializations. The levels of involvement, also considered centralization (Ashmos et al. 1996), are the extent to which other people, levels, or divisions are involved in the decision making process for performance measures (Courtright, Fairhurst, and Rogers 1989; Daft 2001; Daft and Lengel 1986; Hoque and James 2000; Radin 1998; Schmick 2001). Glenn and Malott (2004) found that the level of complexity increases when a greater number of people are involved in the decision making process; likewise, smaller organizations with a smaller number of staff are considered less complex. The authors also discuss the challenges associated with increasing management levels within an organization. These challenges include a disconnection among other levels within the organization and decisions made without regard to its implications with other parts of the

organization, both of which can impact the overall success of the organization (Glenn and Malott 2004). Despite the challenges, performance measurement literature indicates that increased input and involvement in the process of performance measurement from both internal and external stakeholders ensures the information's validity and utility for managing programs. As a result, one can assume that greater involvement among multiple levels of an organization would lead to both an integrated and increased use of performance measurement information for program improvement. Another aspect of organizational complexity is formulation. Formulation reflects the extent to which processes and procedures for performance measures are in place for decision making (Courtright, Fairhurst, and Rogers 1989; Daft 2001; Daft and Lengel 1986; Hoque and James 2000; Radin 1998; Schmick 2001). These documents include manuals, position descriptions and standard operating procedures and are usually measured by counting the number of pages for each document (Daft 2001). Russell and Russell (1992) state that not having formulation provides an opportunity for innovative practices within organizations. The traditional approach to organizational complexity, however, suggests that organizations with a higher number of written procedures and processes are more complexity than organizations with little to no written procedures. The lack of written documentation may also have an effect on the organization in which performance measurement information is collected but rarely used. De Lancer Julnes (2009), Hall and Handley (2011) and others identify the importance of training in the use of performance measurement information as well as the accessibility of this information for program management. Written processes and procedures serve as a training and resource tool for both program managers and staff and can be suggestive of instrumental use. Therefore,

one can expect that having written processes and procedures on ways to enhance program efficiency and effectiveness would lead to increased use of performance measurement information. Specializations represent the third aspect of organizational complexity and it considers the extent to which organizational tasks for performance measurement are divided within the program office (Courtright, Fairhurst, and Rogers 1989; Daft 2001; Daft and Lengel 1986; Hoque and James 2000; Radin 1998; Schmicke 2001). Mintzberg (1980) define specialization in more detail, stating the following:

[T]he number of tasks and the breadth of each in a given position (horizontal job specialization) and the incumbent's control over these tasks (vertical job specialization). Highly specialized jobs in both horizontal and vertical senses usually fall into the category called unskilled, those specialized horizontally but "enlarged" vertically are usually referred to as professional. (325)

Organizations with high levels of specialization indicate that an employee is responsible for a few tasks. In contrast, if levels of specialization are low, an employee is responsible for multiple tasks within the organization (Daft 2001, 18). A key aspect of organizational tasks also includes required approval from other parts of the organization. Brewer and Selden (2000) and others find that, in public agencies, specialization has a strong effect on its performance, particularly when staff are a part of the decision making processes. Furthermore, Moynihan and Pandey (2008) also note that an employee's role and experience affects his or her use of performance measurement information. Unlike having a larger pool of tasks and responsibilities, higher levels of specialization within an organization allow a division, team or employee to develop a level of expertise regarding a particular program area such as performance measurement. In turn, this information can be shared within the organization to expand and enhance the use of performance

measurement information for managing and decision making practices. As a result, one may postulate that increased specializations within organizations lead to the use of performance measurement information. The Health Resources and Services Administration's (HRSA) Bureau of Primary Health Care (BPHC) and the Office of Rural Health Policy (ORHP) exhibit the characteristics of mechanistic and organic organizations due to their varying size, complexity and formulation. ORHP is a small office and, until recently, had a flat organizational structure in which there were three managers. Today the organizational structure consists of the leadership team, a policy research team, and the three divisions. In addition, ORHP manages 20 different grant programs and the number of people in the office is 44. Due to the size, complexity and formulation of the office, ORHP reflects an organic organization in which there is flexibility in an ever-changing environment. The BPHC, on the other hand, has an ever-growing organizational structure that includes nine divisions, four branches and three offices; the number of people in the office is 282. BPHC manages one large and complex program, the community health center program, and mirrors a mechanistic organization with specific policies and regulations in place in order to function effectively (HRSA n.d.). As a result of these differences, a comparative case study of these two program offices will help to provide a clear review of whether organizational complexity plays a role in how and why performance measurement information is used. In addition, the organizational complexity within the program office may also determine who is using the performance measurement information. For example, unlike mechanistic organizations which are predicated by formal, centralized processes, organic organizations rely on program staff as well as managers to make program management decisions. By

identifying who is using performance measurement information and under what purposes it is used, the program office can maximize this information within their program management practices and address any challenges. The program office can also reallocate resources where necessary to better utilize performance measurement information.

Building upon the information provided, one can hypothesize that:

H2: The greater the organizational complexity, the greater the use of performance measurement information.

Rational/Technocratic Factors

Rational/technocratic factors provide the perspective in which actions and decisions are made in a rational manner and that all issues are technical in nature, therefore, influencing the use of performance measurement information (de Lancer Julnes 2009; de Lancer Julnes and Holzer 2001). Cook (1986) stated further that “rational agency decision making is needed for good agency performance” (61). De Lancer Julnes (2009) noted the conditions for the use of performance measurement information under the rational/technocratic model:

...the use of information will depend on whether certain conditions, such as experts in charge, managerial control, systematic standardization, and work fragmentation and mechanism (the principles of scientific management), are present. (60)

Additionally, Daft (2001) describes the rational approach from an individual decision making perspective that provides a systematic way to logically assess and make clear and rational organizational decisions. Key factors that are considered as having an influence on the use of performance information include budget, staffing, training and information. Dedicating resources such as appropriate budget allocations, flexible staff

and sufficient training on performance measures and evaluations have been shown to have significance and a positive impact on its use (Cavalluzo and Ittner 2004; de Lancer Julnes 2009; GAO 2005; Ho 2005; Moynihan and Pandey 2010; Newcomer 2007). The GAO (2005) also encourages the use of performance measurement information to assess budget concerns with performance data and reallocate resources where needed.

Furthermore, Melkers and Willoughby (2005) note the various forms in which resources are possible. These forms include volunteer staff, additional time and employee flexibility.

Studies have indicated the lack of analytical capacity needed for using performance measurement information in government agencies (Berman and Wang 2000; Yang and Hseih 2007). As a result, training and accessible performance information help to increase managers' and staff's knowledge about performance measures, to identify potential ways in which performance measurement information may be used, and to develop corrective action plans, where appropriate (Kamensky and Morales 2005; Yang and Hseih 2007). Research has shown the importance of training towards improving the relationship between performance measurement use and enhanced management and decision making practices within the organization which, in turn, opens up the opportunity for managers and staff to be innovative as well as to develop increased confidence (Cavalluzo and Ittner 2004; de Lancer Julnes 2009). In their study examining the implementation of federal performance measures at the local level, Hall and Handley (2011) conclude that "training and technical assistance can benefit not only perceived program impact, but administrator satisfaction, which very likely has a bearing on the performance measurement program's ultimate buy-in and success" (463). In addition,

performance measurement literature implies that having data that is available and accessible leads to increased use of this information for program improvement and efficiency (Ammons and Riverbank 2008; de Lancer Julnes and Holzer 2001; and Moynihan and Pandey 2010).

Rational/technocratic factors can be seen in governmental programs as influencing the use of performance measurement information. One example comes from Broom (1995) who reviewed performance measurement efforts in five states--Texas, Oregon, Minnesota, Virginia, and Florida--in terms of need, approach, and results. One state in particular, Texas, created an integrated process that incorporated strategic planning, performance measures, and the budget. This process helped the state reduce duplication of efforts and utilize its strategic plan to clearly link budget and resource allocations to activities within its program goals. It has also helped the state to establish priorities and performance measures (Broom 1995). The Small Business Administration (SBA) is another example in which performance information was used to reallocate resources and better meet the priorities within its organization. A review of costs and performance data identified an SBA community partnership program that utilized \$11 million in resources. Upon further review, it was identified that similar resources were more publicly available than when the program started. As a result, SBA decided to end its partnership (GAO 2005). These examples indicate the use of performance measurement information instrumentally to better utilize programmatic resources.

As indicated above, resources such as budgeting, staffing, training and accessibility play a critical role in the use of performance measurement information. It

also represents the basis for management and decision making practices within organizations. As such, one can expect to find that:

H3: Rational/technocratic factors are positively related with the use of performance measurement information.

Political/Cultural Factors

Traditionally politics has been used as a way to educate the public and improve culture (March and Olsen 1983). Support from the political realm helps organizations get resources, authority, leadership and administrative stability that are critical to successful public management (Yang and Hsieh 2007, 863). According to de Lancer Julnes (2009), the political and cultural factors also play a major role in the use of performance measurement information. These factors deal with the beliefs and values as well as the interests of those within and outside of the program office including stakeholders and organizational culture. Rainey (2003) and Yang and Hsieh (2007) emphasized the fact that political power is dynamic and has an influence on organizations that is usually unclear, multidimensional and complex. This deprives public managers of their ability to do their jobs, creating two differing types of power in bureaucracy: one in which bureaucrats are considered “independent and influential,” and a second where they are seen as ineffective (Rainey 2003, 100). Unfortunately, political powers also lead to political complexities that organizations must address. Factors associated with public policy are complex in nature and federal agencies tend to learn from private organizations on the most effective ways to implement the policy. The use of third party organizations and shared power with other organizations to carry out government activities also creates an additional level of complexity, particularly around management and accountability

(Frederickson and Frederickson, 2006; Rainey 2003, 120-22). In spite of its complexity, political factors, particularly stakeholder involvement, are a critical component to the success of public programs. Organizations that have a culture that is open to change, risk taking and rewarding managers and staff are more likely to create an environment which encourages stakeholder involvement for enhancing program performance. Carpinetti, Gerolamo and Galdamez (2007) acknowledge the key role stakeholders have in performance measurement as well as their role in helping organizations improve their performance measurement processes. The authors also emphasize the importance of having an organizational culture grounded in continuous innovation in order to improve programs. Moreover, organizations that practice continuous innovations, in turn, are then more likely to use performance measurement information as a way to foster organizational learning (Carpinetti, Gerolamo and Galdamez 2007) which is representative of non-instrumental use. Based on this information above, one can posit:

H4: Political/cultural factors are positively related with the use of performance measurement information.

Stakeholder involvement

Both Newcomer (2007) and Radin (2000) note that the political realities associated with federal agencies influence their use of performance measurement information. Yang and Pandey (2009) expand on this topic further stating that it is reasonable to expect that organizational culture, including “attitudes, beliefs and decision making” (336), are influenced by their active political surroundings and segmented political systems. Given the effects, a call for more research studying how political

environments affect the behavior and operations of public agencies has also been suggested by Whicker, Strickland, and Olshfski (1993).

Use of performance measurement information by multiple stakeholders may occur for various reasons and at various times (Newcomer 2007, 337). In addition the influence and involvement of external stakeholders such as elected officials, the public, and unions play an important role in the use of performance measurement information. Organizations use performance measurement information to garner support from stakeholders on various activities, programs or issues. This information is also used by organizations legitimize the value or effort of program activities (de Lancer Julnes 2009; Dull 2006; Ho 2006; Rainey 2003; Yang and Hseih 2007). Additionally, external stakeholders can use performance information to advocate for or drive political or regulatory changes (Moynihan 2009). Unfortunately, there is a disinclination on the part of managers and staff in public agencies to request stakeholder feedback in the performance measurement process as a way to rationalize, instead of inform, decisions that are representative of non-instrumental use. There is also the potential for public agencies and their stakeholders to rely more on performance information than to seek each other's contribution towards program performance (Moynihan and Pandey 2010). Despite this concern, having stakeholders acknowledge and concur on program goals and performance measurements as well as clarity on how performance measurement information will be used is important to a program's success (Newcomer 2007).

An example demonstrating the influence of stakeholders on the use of performance measurement information can be found in a case study by Moynihan (2009). The study, conducted at the Vermont Department of Corrections, examines how

performance measurement information was used to successfully advocate for changes in correction policies within the state. Through using the information as an advocacy tool, the leadership in the department also obtained buy-in and support from external stakeholders, opening the opportunity for organizational learning as well as changes in policy (Moynihan 2009, 595).

Another study by Ho (2005) examines the perceived value of performance measurement for Midwest mayors and hypothesizes that stakeholder involvement changed the political context and had a strong influence on the implementation of performance measurement information as well as decision making processes. Though the study results showed that few mayors included stakeholders in the performance measurement process, the author noted that minimal involvement of stakeholders limited the successful use of performance measurement information (Ho 2005). Based on these studies as well as others, it appears that stakeholder involvement adds political credibility to the performance measurement process. In addition, use of performance measurement information can serve as a tool for both organizations and stakeholders that will lead to better program decisions and avoid potential conflicts (de Lancer Julnes 2009; Ho 2006; Grizzle and Pettijohn 2002). Based on the above information, one can posit:

Sub-hypothesis H4-a: Organizations that involve stakeholders in the performance measurement process are more likely to use performance measurement information.

Organizational Culture

In addition to stakeholder involvement, organizational culture is also important to the use of performance measurement information. Schein (1996, 229) described

organizational culture as “shared norms, values and assumptions” and as an important component in understanding how organizations operate. The author further explained that there are three levels of organizational culture. The first level is artifacts and represents the most visible form of these levels due to the organization’s surroundings which include physical space, technology and other observable patterns of behavior (Schein 1985, 434-35). The second level reflects values and increased awareness within the organization. The last level, basic assumptions, represents the underlying values and practices that are at the subconscious phase (Schein 1985). In addition to Schein’s levels of organizational culture, there are key components that are important to the culture of public entities. These components include the importance of opinions by managers and staff, encouraging teamwork and furthering public interest concerns (Brewer and Selden 2000; Osborne and Gaebler 1992).

According to de Lancer Julnes (2009), organizational culture plays a significant part in the change process and is a result of the attitudes and perceptions of managers and staff. Considered to “shape the way organizations react to innovation and change” (de Lancer Julnes 2009, 69), organizational culture can open up the opportunity for rewarding innovative practices towards the use of performance measurement information. Moynihan (2005, 2009) warns, however, that organizations can either support or discourage the use of performance measurement based on its cultures or practices. Additionally Newcomer (2007) and Ingraham, Joyce, and Donahue (2003) express existing challenges, such as leadership support and adequate resources, that organizations face when adjusting their culture to encourage the use of performance measurement information for informed decision making.

The factors that have been most identified with organizational culture and the use of performance measurement information include risk-taking and perceived attitudes of managers and staff as well as rewards for innovations (de Lancer Julnes and Holzer 2001; Newcomer 2007). Studies have found that cultures centered around its mission encouraged opportunities for managers and staff to be creative and spontaneous within their organizations (Pandey and Moynihan 2006; Yang and Pandey 2008). This implies the willingness of organizations to be innovative and take risks in an effort to improve programs through the non-instrumental use of performance measurement information. In their research to enhance the use of performance information by federal agencies, the GAO (2005) identifies recognizing and rewarding managers, staff and grant recipients as a way to encourage the use of performance measurement information. By using performance measurement information to reward others, accountability is emphasized and incentives toward improved managing and decision making practices are developed (GAO 2005).

An example that illustrates organizational culture fostering the use of performance measurement information is the employee performance agreements by the Department of Veteran Affairs' Veteran Health Administration (VHA) (Kamensky and Morales 2005; GAO 2005). The agreements served as a motivational tool to encourage managers and staff to focus on key goals and targets by providing assistance in rewarding and recognizing managers and staff based on performance outcome data. The VHA also used this incentive as a way to hold network directors accountable for meeting goals and monitoring progress (Kamensky and Morales 2005). By developing the incentive program, the VHA created a culture that encouraged the regular use of performance

measurement information. Based on the literature's positive association of performance measurement information and organizational culture, one can assume the following:

H4-b: Organizations that encourage innovation and have in place rewards are more likely to use performance measurement information.

Summary

This chapter provided an overview of the literature on the use of performance measurement information, particularly regarding ways in which performance measurement information is used, challenges associated with performance measurement use and factors influencing performance measurement use. The theoretical framework for this study explored the use of performance measurement information from both instrumental (an observable way in which performance measurement information is used for decision making) and non-instrumental (a non-observable way in which performance measurement information is used for decision making) perspectives. In addition, rational/technocratic factors, political/cultural factors and organizational complexity were included as influential factors of performance measurement use at the federal level. Examining the use of performance measurement information through the theoretical framework provided a better understanding between performance measurement use and management practices within federal programs.

Table 2.1: Research Questions and Hypotheses

Research Questions	
1)	What factors influence the use of performance measurement information and how?
2)	Under what circumstances is performance measurement information being used?
3)	Who is using performance measurement information?
Hypotheses	
H1	Use of performance measurement information consists of both instrumental and non-instrumental use and each type of use is influenced by different factors.
H2	The greater the organizational complexity, the greater the use of performance measurement information.
H3	Rational/technocratic factors are positively related with the use of performance measurement information.
H4	Political/cultural factors are positively related with the use of performance measurement information.
H4-a	Organizations that involve stakeholders in the performance measurement process are more likely to use performance measurement information.
H4-b	Organizations that encourage innovation and have in place rewards are more likely to use performance measurement information.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this chapter is to discuss the research methodology that guided the data collection and analysis in the study. As previously stated, this research study examined factors that influence the use of performance measurement information within a federal agency. By exploring the use of performance measurement information within a federal agency through multiple methods, there was an opportunity to gather substantive information that would begin to help answer how and why performance measurement information is used as well as who is using the information. In addition, the following methodology may help federal managers and staff, public administration students and professionals, and others consider opportunities that would bridge the gap between performance measurement information and its use toward management and decision practices.

The approach to the methodology for this study consists of a survey followed by semi-structured interviews and document review; all of which created the data triangulation to support reliable research data. The chapter begins with the overall research design of the study as well as the role of the researcher. It then presents an explanation of the survey method including the sample population and participants, the survey tool instrument, the distribution of the surveys, the response rate, and the strengths and weaknesses associated with using this survey. This section of the chapter also provides a discussion of the quantitative data analyses techniques used including factor analysis, Cronbach alpha reliability test and multiple regression analysis.

The chapter then discusses the mixed methods approach of the study which included follow up, semi-structured interviews and document review. Using this approach allowed the researcher to garner greater awareness of performance measurement use. This chapter concludes with examining remaining methodological concerns.

Research Design

The research design for this study was a multiple or comparative mixed methods case study design and was selected to assist in advancing the understanding of use of performance measurement information at the federal level. Case studies represent one of the ways in which social science research is conducted. Yin (2009, 18) defines case studies in two parts:

- Case study is an empirical inquiry that looks at a current phenomenon thoroughly and within its real-life context especially when the margins between phenomenon and context are not clearly seen.
- The case study inquiry manages scenarios in which there will be many more variables of interest than data points. As one result, the case study relies on several sources of evidence, with data needing to converge in a triangulation. Another result of the case study is that it benefits from prior theories to guide data collection and analysis.

By using a case study design, one is able to advance the understanding of the use of performance measurement information in a federal agency. Yin (2009) expresses several concerns with the case study design. These concerns include lack of thoroughness, minimal basis for scientific generalization, and lengthy, unreadable case

study reports. Despite the concerns, the author found that case study designs provide important information when an organized course of action is in place (Yin 2009).

There are four ways to design a case study. The first type is a single case or holistic design which utilizes a single unit of analysis. The second type is a single case or embedded design which involves multiple units of analyses within one case study. Multiple-case holistic design is the third type of design and includes multiple case studies with individual units of analyses. The last type of design is multiple-case embedded designs involves multiple case studies that involve two or more units of analyses within each case study (Yin 2009, 46-47). Yin (2009) notes the debate regarding single versus multiple case studies and encourages the use of at least two cases in order for the study's results to have a greater impact. The type of case study design used for this study was the multiple-case holistic design and examined the use of performance measurement information within two federal program offices--HRSA's Bureau of Primary Health and Office of Rural Health Policy.

Researcher's Role

Researchers' experiences, biases, values and background are significant factors in the research design and analysis and they must have an understanding of the theoretical or political issues surrounding their study as analytical judgments are needed throughout the data collection process (Yin 2009, 71). This researcher's perceptions regarding the use of performance information in program performance at the federal level is based on personal experiences as a federal employee within the HRSA. The researcher believed that the organizational complexity plays a significant role in how and why performance measurement information is used as well as who uses this information. This belief is

based on the researcher's experience in using performance measurement information in both program offices and the effect organizational structure has played in the process for managing and making programmatic decisions.

The researcher worked for three and a half years as a public health analyst within the BPHC. As part of the program staff, the researcher is familiar with the program legislation as well as the general processes within the program office. The researcher currently works as a grants program coordinator within ORHP and is also familiar with the various programs processes within that office. The position of grants program coordinator entails providing leadership and coordination in regards to the grants processes for management and staff. The researcher's knowledge and experience in both program offices assisted in the design and analysis of the research. Through piloting of the survey and interview questions as well as employing suggested validity and reliability techniques as described by Creswell (2009) and Yin (2009), the level of bias is expected to be greatly reduced.

Sample Population and Participants

The unit of analysis for this project was program offices within the U.S. Department of Health and Human Services (HHS) Health Resources and Services Administration (HRSA). Tung (1979) explains that utilizing units and offices within organizations rather than the organization itself as the unit of analysis helps to gain a better picture of organizational effectiveness due to the variability within large and complex organizations. For this reason, two offices were observed--the Office of Rural Health Policy and the Bureau of Primary Health Care. These programs represent two of the seven program offices within HRSA that distribute grant funding in efforts to increase

access and quality care to underserved communities. The contrast of the two program offices, as described below, provided insight on factors influencing the use of performance measurement information at the federal level.

Bureau of Primary Health Care

The Bureau of Primary Health Care (BPHC) administers one large and complex grant program--the community health center program--and provides direct services to the community. The Uniform Data System (UDS) in BPHC has a long, well established history and represents a collaborative effort among federal staff, grantees and experts within the field. This system tracks data on areas such as patient demographics, services provided, staffing, clinical indicators, utilization rates, costs, and revenues (HRSA n.d.). Collected and reported at the grantee, state, and national levels, the UDS data has helped to support annual budget requests as well as justify national community health center initiatives.

BPHC has a large organizational structure that consists of three offices, nine divisions and four program branches. The program managers and staff for BPHC include public health analysts, project officers, branch chiefs, division directors, and office leadership and total 282 people; it is one of the largest program offices in the agency. Other aspects of the structure include a hierarchical, centralized process with standardized rules and procedures in place. BPHC's complexity can be seen through the number of divisions, offices, and branches it supports all having a specialized focus on an aspect of the community health center program. As a result, BPHC's managers and staff may use performance measurement information in various ways. The size of the program office represents a mechanistic organization in which staff may have little authority in the

decision making process. This may be seen in BPHC where multiple levels of approval are required in order to process various documents which may influence the extent to which performance measurement information is used and how it is used. Embedded into its culture, BPHC provides continuous learning and training for managers and staff in all areas including performance measurement information. Additionally, BPHC develops new and innovative processes (e.g. data collection and program funding opportunity announcements) to meet increasing demands from stakeholders and legislations. For example, BPHC has developed a performance dashboard that will provide program managers with a quick snapshot of key performance measurement information that can be incorporated into their management practices. Based on these key aspects, BPHC was selected to serve as a case study.

Office of Rural Health Policy

The second program office, the Office of Rural Health Policy (ORHP) represents one of the smallest offices within HRSA with grant funding authority and administers over 20 different grant programs. Created in 1987, ORHP functions include advising the Secretary of Health and Human Services (HHS) on rural health issues, administering grant programs, and conducting rural health research. ORHP currently administers a variety of different grant programs including programs that provide both direct and indirect services to the community, as well as grant programs that support research centers. In terms of organizational structure, ORHP is less complex than BPHC, consisting of three divisions and two teams which include project officers, public health analysts, program coordinators, and division directors and office leadership totaling 44 people. ORHP is representative of an organic organization that has a more decentralized

structure and increased flexibility, allowing for more employee involvement in the decision making process (Schminke 2001). Despite being a small office in size and structure, ORHP is required to meet the Agency's administrative requests and reporting requirements. Additionally, as the only federal office focused on rural health within HHS, program managers and staff are often required to provide information and/or participate on interagency committees.

In 2008, ORHP implemented its Performance Improvement Measurement System (PIMS) to begin the process of capturing and assessing program performance trends. Depending on the program, PIMS measures attempts to capture demographic, clinical, and utilization information on an annual basis. In addition to the new performance system, the 2010 and 2011 President's Budget Justification introduced a Rural Health Care Initiative in which one of the key items to address was building an evidenced-based practice among its programs. As ORHP leadership and staff begin the process of reviewing the measures collected and building evidence-based practice, they are also in the process of identifying and determining ways to use the information, and finding ways the information is most useful towards improving program performance.

The significant contrasts among organizational complexity--levels of involvement, formulation and specialization--within BPHC and ORHP warrant further analysis regarding the use of performance measurement information. BPHC has a complex organizational structure with multiple divisions and branches. In contrast, ORHP only has three divisions which coordinate directly with program office leadership. When examining organizational capacity and resources, BPHC is able to have specialized expertise within each level of the program office and a more central approach towards the

management and decision processes. On the other hand, ORHP's organizational capacity is much smaller and has limited resources. Due to its structure, the role of ORHP's managers and staff are delegated differently from BPHC. ORHP has program coordinators (non-supervisory) who manage federal programs and make certain programmatic decisions regarding the program, which include the use of performance measurement information.

Survey Instrument

Survey research, according to Babbie (2007), is the best method in the social science field to gather information about a population that is too large to be observed directly (203-4). Surveys are commonly used in public administration as a tool for public administrators to examine program effectiveness as well as managerial issues in an organization (Yang and Miller 2009, 241). Survey research is defined by Miskel and Sandin (1981, 2) as a structured way to collect information from a particular group or population and assessing a particular set of responses. Furthermore, the authors' note that survey research explains and predicts relationships of "variables focused on facts, opinions, attitudes and behaviors" (Miskel and Sandin 1981, 2). Reasons to conduct survey research includes: (1) describing, exploring or explaining a group or population (Babbie 2007); illustrating quantitatively some aspects of the population that is being studied; (3) gathering data from people in an organized fashion with a pre-determined set of questions that can be used for analysis; and (4) collecting data from a sample of a population being studied, with the goal of generalizing the information for that population (Pinsonneault and Kraemer 1991). Based on the purpose and reasons noted, survey research was the most appropriate method for this study.

As mentioned, the purpose of this study was to examine the use of performance measurement information as well as factors that influence use in a federal agency. Cross sectional surveys were the best tool to examine performance measurement use at a fixed point in time. It also served as a way to reach the entire population that was studied. Several advantages to using surveys include having real-world observations, having a representative sample that can provide information that is generalizable to the population that is studied, and gathering a lot of information in a relatively short amount of time and for minimal costs. In addition to the advantages, there are also noted disadvantages to conducting surveys. These disadvantages include possibly neglecting valuable information if relevant theories or issues are not considered, marginal details from the survey results for the topic that is examined and challenges toward obtaining a high response rate (Kelley, Clark, Brown and Sitzia 2003). This study addressed disadvantages of cross sectional surveys by using a mixed quantitative and qualitative methods approach to maximize the benefits of both methods.

The survey for this cross-sectional survey was self-administered. The survey instrument consisted of 28 questions and was based on constructs of use, rational/technocratic factors, political/cultural factors and organizational complexity factors. More specifically, the survey instrument consisted of 6 sections: performance measurement use, organizational capacity, stakeholder involvement, organizational behavior, organizational characteristics, and demographic information. The eight questions associated with performance measurement use were concerning how performance measurement information was used for different purposes within the program office and consisted of a 4-point Likert scale ranging from “Great” to “No

Extent.” The next set of questions was regarding organizational capacity and focused on the program office’s capacity to use performance measurement information. These 5 questions were based on a 5-point Likert scale and ranged from “Strongly Agree” to “Don’t Know.” The third set of questions related to external stakeholder involvement and performance measurement information. The 3 questions for stakeholder involvement utilized a 5-point Likert scale and ranged from “Great Extent” to “Don’t Know.” Similarly, organizational behavior also consisted of three questions using a 5-point Likert scale. These questions focused on the program office’s behavior regarding the use of performance measurement information. The last set of questions using a 5-point Likert scale, organizational characteristics, were concerning the organizational structure and arrangements of the program office. Four questions used the Likert scale and ranged from “Great Extent” to Don’t Know.” The final set of survey questions were regarding demographic information. The first two questions were dichotomous; the choices for the first question, Program Office, were “Bureau of Primary Health Care” or “Office of Rural Health Policy,” and the section question, Position, were either “Management/supervisory position” or “Staff/non-supervisory position.” The last two questions utilized multiple choices and pertained to the respondent’s length of time in HRSA and the length of time in their program office.

Distribution of the Surveys

There has been an increase in the use of online or web-based surveys over the past few years. Several noted advantages to online surveys include low or no associated costs and the ability to be done relatively quickly. Disadvantages to online surveys include possible technical problems and lack of control over responses (Yang and Miller 2008).

In addition, the response rates for online surveys tend to be lower than other modes (Dillan et al. 2009; Millar and Dillan 2011). A mixed mode survey design incorporating both an online survey and an identical paper-based survey was determined to be the best option to reach the population that was studied. In addition, this design helped to address potential drawbacks associated with online surveys.

The survey instrument was pilot tested by five participants from BPHC and ORHP in January 2012. In addition, several program experts within HRSA reviewed the survey tool and provided feedback. Based on their responses, the survey questions and format were refined to provide brief descriptions or definitions for each section within the study to provide more clarity. In addition, the pilot participants suggested utilizing a mix-mode survey for participants, incorporating both online and paper-based surveys, instead of the proposed single, online survey, mode. The use of mixed mode surveys has become an increasingly common practice among researchers and offers participants a choice in the type of survey they would like to complete. Mixed mode surveys also provide the researcher an opportunity to choose more than one mode for the study in order to potentially increase in the response rate and decrease in non-response errors. Millar and Dillan (2011), on the other hand, finds that researchers are divided between the benefits of using one mode versus using multiple modes to improve the response rate. For example, having different responses to the same question or questions from a mixed mode survey have been noted as a potential shortcoming (Dillman et al. 2009). This study, however, used an online and a paper-based mixed mode survey with the exact same questions. These adjustments were made to the survey method based on the pilot

study in an effort to encourage participation and increase the response rate among managers and staff in both program offices.

Once revisions were made to the survey instrument, the application for the University of Baltimore's Institutional Review Board (IRB) review of protocol was submitted. The IRB designated the research proposal as exempted and concluded that the protocol for this research study posed minimal risk and discomfort to participants.

The self-administered survey was distributed to all program office managers and staff within BPHC and ORHP totaling 326 people. A cover letter accompanied the survey that explained the purpose of the study, the link to the survey, associated terms and definitions, and assurances that the survey was both anonymous and voluntary. Additionally, the letter stated that the survey was not connected to any HRSA-related activities and would only be used for academic purposes. To build consistency among the online survey and the paper-based survey, the required answer feature from the online survey tool was removed to maintain the voluntary nature of the survey and encourage participation. Also, removing this feature from the online survey aligned it with the paper-based surveys in which participants had the option of not responding to a particular question. Another concern arose from with the removal of this feature. There was the possibility that, by using only one survey link, participants would not identify which program office they work in, which would create a challenge during the analysis portion of the research. As a result, an additional survey link was created with the exact same survey- one for BPHC and one for ORHP. For the paper-based surveys, BPHC received the white version and ORHP received the color green version.

The survey was distributed via email on March 1, 2012 and was available for approximately eight weeks through May 1, 2012. Reminder emails, including the survey link, were sent to both program offices after the second and fourth weeks. In addition to sending email correspondence, the researcher attended five division meetings within BPHC and one program office meeting within ORHP to provide an overview of the study and distribute the paper-based surveys. Each presentation was approximately 10-15 minutes in length and also took place between March 1, 2012 and May 1, 2012. Whenever possible, the researcher requested to present at the end of the meeting to maintain a captive audience and have paper-based surveys completed and collected before the meeting adjourned. The researcher used Ultimate Survey, a survey tool supported by the University of Baltimore, for the data collection and used Statistical Packages for Social Sciences (SPSS) version 16 software to conduct the descriptive and inferential analyses for the survey.

Validity and Reliability of Survey Instrument

Assuring the validity and reliability of the survey tool was an important aspect of the study. Face validity refers to the ensuring that the study measured what it intended to measure. Potential threats to the validity of this study involved participant selection, changes to understanding of the variables, and process changes in the study (Yang and Miller 2008; Creswell 2009). The study minimized these threats to the validity by creating the survey questions based on the theoretical framework formed from the literature review. The questions were also validated by program experts as well as through a pilot study which included managers and staff within the two program offices. In addition, the survey was administered the exact same way to both program offices by

providing the option of completing the survey online or via paper. The online survey had separate web links to accurately identify participants by program office; similarly, the paper-based surveys were also distributed equally during the presentations but each program office had a different color. Presentations conducted by the researcher to each program office followed the same format and clearly emphasized the voluntary nature of the study. Lastly, all managers and staff from each program office were provided an opportunity to complete the survey within an 8-week timeframe to eliminate threats related to selection biases and maturation.

Response Rate

As noted previously, survey response rates are challenging. Millar and Dillman (2011) note low responses for online surveys; however, coupled with other modes, the rate of responses may increase. In addition to using multiple modes, there are other survey elements that may be influential to the response rate. These elements include the length of the survey, participant notification before or after to the survey, the survey design, the research affiliation, and payment (Sheehan 2011).

In effort to achieve the highest response rate, several elements were incorporated into the survey design. Pre-notification emails were sent to participants with the survey link through the listservs of each program office explaining the voluntary nature of the study, documenting Institutional Review Board approval, identifying the study as an academic activity with no affiliation to HRSA activities and providing how the survey results would be used and maintained. The reminder email was re-sent to the program offices between two and four times over the course of two months. Additionally, the researcher attended several division and office meetings to verbally explain the purpose

of the study and encourage participation in the study. Lastly, the survey was available via a mixed mode approach. The approach involved completing the online survey or a paper based survey.

After the two months that the survey was available, the total number of survey responses received was 116 out of a possible 326. At the program office level, the BPHC response rate was 31.9 percent, or 90 out of 282 managers and staff, and the ORHP response rate was 59 percent, or 26 out of 44 managers and staff.

Quantitative Analysis of Survey Data

The first analysis conducted was descriptive in nature and examined means, frequency distributions and standard deviations of the study's variables on the use of performance measurement information and the factors that influence use of this information. The analysis examined all survey results, results by program office as well as results by position within the program office. This analysis also provided an opportunity to answer the three research questions for this study and to conduct a comparative analysis between the two program offices.

Factor analysis

A factor analysis was conducted to validate the variables and scales represented by constructs. As noted in earlier in this chapter, constructs represent theoretical concepts that cannot be directly observed as identified in this survey (de Lancer Julnes 2009). Pallant (2007) describes factor analysis as a way "to reduce a large number of related variables to a more manageable number, prior to using them in other analyses such as multiple regression or multivariate analysis of variance" (179). Factor analysis is used for three purposes: (1) to understand the structure of variables; (2) to develop a

questionnaire to measure the underlying variable; and (3) to reduce the data to a manageable size while keeping as much of the original information as possible. In addition, factor analysis is popular in the social sciences field due to researchers' efforts to measure variables that cannot be directly measured (Field 2009, 628).

The main approaches to this type of analysis are exploratory factor analysis and confirmatory factor analysis. Exploratory factor analysis is usually done in the early portion of research to examine the interrelationships of the variables. The other approach, confirmatory factor analysis, is more complex and is used when there is a theory regarding factor structure for a set of variables. It also confirms that the theory describes observed interrelationships of the variables (Field 2009). Some authors advise that factor analysis requires a large sample size, with sample sizes over 300 being acceptable, to generalize its results. Conversely, others have found that smaller sample sizes are acceptable if the results demonstrate high loading variables, generally above .80 (Pallant 2007, 181). Though the study had a low response rate, exploratory factor analysis provided valuable information regarding the use of performance measurement information.

Another data reduction technique, principle components analysis, is similar to factor analysis in its efforts to identify the underlying dimensions of a data set. Unlike factor analysis, principle components analysis looks to see whether the data has a linear component and how variables contribute to it (Field 2009, 638). Exploratory factor analysis was used in this study to examine underlying structures or factors supporting the use of performance measurement information. More specifically, it was used to explore the underlying constructs of both the dependent and independent variables and used to

examine these relationships within the regression analysis. For example, examining the dependent variable, performance measurement use, by forcing factors instead of using the eigenvalue of over 1.0 was used in addition to using the eigenvalue to assess whether there was a more telling report about differentiating constructs that make up performance measurement use. Similarly, an exploratory factor analysis was conducted on all independent variables to assess the number of factors determined as well as the items that loaded to each factor. Conducting factor analyses also produced factor scores as continuous variables for the dependent and independent factors which were used for multiple regression analyses. The factor score also helps to address potential concerns regarding multicollinearity in which variables are highly correlated to one another by having the highly correlated variables load accordingly through factor analysis (Field 2009). To assure that the constructs in the factor analyses were reliable, a Cronbach alpha coefficient test was conducted on each of the constructs identified through factor analyses. The scale used to assess the values can be influenced by the number of variables as well as the types of samples that are tested. Also, special consideration is needed regarding the wording of the questions. The recommended values for Cronbach alpha tests range between .7 and .8 (Field 2009; Pallant 2009). Once favorable values are achieved, further analyses can occur.

Regression Analysis

Once the scales were assessed for validity and reliability, a methods of least squares standard multiple linear regression analysis was conducted. Using the method of least squares is a common technique for identifying the best fit of the information (Field 2009). The multiple linear regression analysis examined the relationship between the

dependent and independent variables noted earlier in this chapter. The analyses also helped to address the study's hypotheses and predicted the influence that rational/technocratic factors, political/cultural factors, and organizational complexity factors (independent or predictor variables) have on the overall use, instrumental use and non-instrumental use, of performance measurement information (dependent or outcome variable) (de Lancer Julnes 2009; Field 2009). In addition, demographic information such as position, program office, years worked at HRSA and years worked within the program office were incorporated into the model. Multiple regression analysis was chosen over simple regression analysis based on the rationale that, in performance measurement and other program improvement efforts, there are usually multiple variables involved to explain the outcome variable. Pedhazur and Schmelkin (1991) encourage studies to research multiple effects of independent variables as opposed to individual ones.

In conducting multiple regression analysis, it is important to note that only continuous variables can be used for the dependent or outcome variable in multiple regression analysis. Either continuous or dichotomous variables can be used for the independent or predictor variables. Field (2009, 222) notes the importance of sample sizes in regression analyses and recommends 10-15 cases for each independent or predictor variable in the model.

The standard equation for multiple regression analysis is:

$$y = a + b_1X_1 + b_2X_2 + \dots + b_nX_k$$

The Y equals the outcome or dependent variable for this study. The a is the intercept of the model. The b_0 and b_x represent the parameters of the model and X_1 symbolizes the independent or predictor variable (Field 2009).

Multiple regression analysis allows the researcher to determine the way in which the independent or predictor variables are entered into the model. Standard regression analysis includes all predictor or independent variables into the model at the same time. Hierarchical regression analysis incorporates a selection process for which predictor or independent variables are entered into the model. The last type of regression analysis, stepwise, involves predictor or independent variables that are entered into the model based on a math computation (Field 2009, 209-12). Several areas of consideration are needed when using regression analysis. These considerations include having a sufficient sample size for making generalizations as well as eliminating issues of multicollinearity, singularity and outliers. As mentioned previously, multicollinearity refers to independent variables that have a high correlation to one another, usually .9 or higher. Singularity, on the other hand, refers to an independent variable that is linked with multiple variables. Lastly, outliers are scores that are extremely high or low (Field 2009). Field (2009) also provides other assumptions to consider when conducting multiple regression analysis such as using quantitative or categorical variables, ensuring that there are no variables included that are external to the regression model, making sure that there are no independent or normal distribution errors and that linearity is achieved. By addressing these assumptions, the model can be used appropriately to the target population (Field 2009, 220-21).

The standard regression analysis was chosen as the most appropriate analysis for testing the hypotheses of this study. The first three models examined the relationship of the dependent variables, performance measurement use, instrumental use and non-instrumental use, with the independent and control variables. These models were also

used to examine performance measurement use at the program level. The final models (models 4-6 below) include program office as the interaction or moderating variable to see whether there was a positive or negative effect in the other variables within the model. Witte and Witte (2007) state that “when two factors are combined, something happens that represents more than a mere composite of their separate effects” (390). The following base models were designed to address the study’s hypotheses:

Model 1: y (performance measurement use) = $a + b_1$ (organizational complexity) + b_2 (rational/technocratic) + b_3 (organizational culture) + b_4 (stakeholder involvement) + b_5 (BPHC- Program Office) + b_6 (Management- Position) + b_7 (time in Program Office)

Model 2: y (instrumental use) = $a + b_1$ (organizational complexity) + b_2 (rational/technocratic) + b_3 (organizational culture) + b_4 (stakeholder involvement) + b_5 (BPHC- Program Office) + b_6 (Management- Position) + b_7 (time in Program Office)

Model 3: y (non-instrumental use) = $a + b_1$ (organizational complexity) + b_2 (rational/technocratic) + b_3 (organizational culture) + b_4 (stakeholder involvement) + b_5 (BPHC- Program Office) + b_6 (Management- Position) + b_7 (time in Program Office)

Model 4: y (performance measurement use) = $a + b_1$ (organizational complexity) + b_2 (rational/technocratic) + b_3 (organizational culture) + b_4 (stakeholder involvement) + b_5 (BPHC- Program Office) + b_6 (Management- Position) + b_7 (time in Program

Office) + b7 (ProgramOfficeComplexity) + b11
 (ProgramOfficeRational) + b12 (ProgramOfficeCulture) + b13
 (ProgramOfficeStakeholder)

Model 5: y (instrumental use) = $a + b1$ (organizational complexity) + $b2$
 (rational/technocratic) + $b3$ (organizational culture) + $b4$
 (stakeholder involvement) + $b5$ (BPHC- Program Office) + $b6$
 (Management- Position) + $b7$ (time in Program Office) + $b7$
 (ProgramOfficeComplexity) + $b11$ (ProgramOfficeRational) + $b12$
 (ProgramOfficeCulture) + $b13$ (ProgramOfficeStakeholder)

Model 6: y (non-instrumental use) = $a + b1$ (organizational complexity) + $b2$
 (rational/technocratic) + $b3$ (organizational culture) + $b4$
 (stakeholder involvement) + $b5$ (BPHC- Program Office) + $b6$
 (Management- Position) + $b7$ (time in Program Office) + $b7$
 (ProgramOfficeComplexity) + $b11$ (ProgramOfficeRational) + $b12$
 (ProgramOfficeCulture) + $b13$ (ProgramOfficeStakeholder)

This analysis was supported by the results of the exploratory factor analysis on the dependent and independent variables which helped to identify underlying structures or constructs. It also minimized potential concerns regarding multicollinearity. The factor analyses created continuous variables via factors scores that were used for multiple regression analyses. Two of the demographic variables, program office and position, were recoded from 1 and 2 to 0 and 1 for use in the multiple regression analyses. In addition, dummy variables were created with the remaining demographic variables in order to convert the variables categorical to dichotomous variables in order to be used for

multiple regression analyses. Once the adjustments were made, the analyses were conducted.

Building Upon the Quantitative Model

Within the case study design, a mixed methods approach was chosen to obtain a deeper level of information that could not be obtained by conducting this study under a single quantitative or qualitative approach. Patton (2002) considers the mixed methods approach as one which combines the best of qualitative and quantitative approaches and creates a more objective research study. Mixed methods research has been defined as a type of research in which the researcher blends quantitative and qualitative research techniques, approaches, and philosophies into a one study. This type of research is considered the "third wave" or third research movement, providing a sound and pragmatic option to research the inquiry logic of induction which examines and detects of pattern) deduction which tests hypotheses and theories, and abduction which depends on finding and utilizing the top group of explanations for interpreting results (de Waal 2001).

There are several strengths associated with using mixed method design. One of the strengths related to this design is the ability to use words, pictures, and narrative for additional meaning or explanation to numbers. Similarly, using numbers helps to accurately assess words, pictures, and narrative. The ability of the researcher to use multiple approaches to respond to research questions without restriction or constraints based on the researchers' choices as well as provide stronger evidence for a conclusion through convergence and corroboration of findings is another strength associated with a mixed method design. Additional strengths include increased generalizability and

eliciting insights and understanding that may be overlooked when using only one method as well as create more thorough evidence to inform theory and practice (Johnson and Onwuegbuzie 2004, 21)

In addition to the strengths related to mixed method research, there are also noted weaknesses. These weaknesses include difficulty in learning multiple methods and understanding how to combine and validate the approaches accurately. Additionally, time and associated expenses also serve as a deterrent for conducting mixed methods. Lastly, researchers are still exploring details related to the mixed method approach such as the interpretation of opposing results and mixing of paradigms (Johnson and Onwuegbuzie 2004, 21).

Overall, a mixed methods approach allows researchers to study multifaceted research questions and hypotheses intently by collecting more information from the multiple research methods conducted for that particular study than by any single method (Yin 2009). This is particularly true in public administration. Yang and Miller (2008) explained that the field of public administration involves multiple paradigms that could benefit from using a mixed methods approach. By engaging in this approach, new and assorted interpretations may be identified for the same phenomenon. Ultimately, using a mixed methods approach will enhance the credibility of the research and will lead to a more insightful analysis (Yang and Miller 2008).

In order to constructing a mixed-method design, the researcher must make two primary decisions: (a) whether one wants to operate largely within one dominant paradigm or not, and (b) whether one wants to conduct the phases concurrently or sequentially. There are three main strategies that are used on mixed method approach.

The sequential explanatory strategy gathers quantitative data and analysis first then uses qualitative data to build upon the quantitative results. The next strategy, the sequential exploratory strategy, is similar to the first noted strategy; however, qualitative data analysis is conducted in the initial phase and it is followed by quantitative data. The final strategy for a mixed method approach is the sequential transformative strategy which incorporates either of the two previous strategies; however, the study is guided by its theoretical lens (Creswell 2009, 211-13). This study utilized a mixed methods approach involving a sequential explanatory strategy which consisted of the collection and analysis of the quantitative information, using a cross-sectional, self-administered survey tool, in the first part of the study. The qualitative information, in the form of semi-structured interviews and document review, was then collected and analyzed in the second part of the study, and used to enlighten the quantitative results (Creswell 2009).

As previously noted, validation for mixed methods approach is completed by triangulation. Denzin (1978) defines triangulation as “the combination of methodologies in the study of the same phenomenon” (291). The author outlined the following four types of triangulation: (1) data triangulation which uses of a variety of sources in a study; (2) investigator triangulation which involves multiple researchers; (3) theory triangulation involving several different perspectives and theories to interpret the study results; and (4) methodological triangulation which uses multiple methods to study a research problem (Denzin 1978; Johnson, Onwuegbuzie and Turner 2007, 114).

Triangulation can be advantageous for several reasons. It provides overall strength to the multiple method design and enriches the explanation of the research problem. It also stimulates new and innovative methods as well as provides the researcher an opportunity

to uncover unique or unknown aspects of the phenomenon as well as integrate theories. Lastly, triangulation may also be used to examine opposing theories (Jick 1979, 608-9; Johnson, Onwuegbuzie and Turner 2007). For these reasons, document reviews were conducted to corroborate the findings of the study's surveys and interviews. In addition to the triangulation of the study data, other strategies were deployed to ensure validity of this mixed methods approach. The approaches included clarification of researcher bias under the section "Researcher's Role," checking for accuracy of various parts of the research analysis with several study participants including follow-up interviews and providing opposing perspectives identified in the collection and analysis of the data to increase the validity and credibility of the results (Creswell 2009, 191-2).

Interviews

The interview process that followed the survey helped to decipher and clarify the survey findings including outlying or unanticipated survey results. According to Yin (2009), interviews are an important component of case study research. The interview analysis involved collecting the raw data from the 20 managers and staff from BPHC and ORHP who were interviewed via telephone or face to face, organizing and preparing the data for analysis, reviewing all of the information and coding it appropriately, identifying themes and descriptive information, and interpreting the meanings behind the themes and descriptions.

The interview protocol included semi-structured questions to ensure consistency in the questions that each participant was asked. The interview questions asked about the use of performance measurement information, areas in which performance measurement information could be used more effectively, and the elements or factors that influenced

and hindered the use of performance measurement information. In addition, other questions inquired about ways that external stakeholders influence the use of performance measurement information, the role that it played in job activities, the usefulness of the information towards making recommendations and decisions, suggestions on ways to make performance measurement information more useful and valuable, and the impact organizational structure has on the use of performance measurement information. The interview protocol can be found in Appendix C.

Interview Data Collection Strategies

The interview component of the data collection process served as a follow-up to the survey results to gather more detailed information on the use of performance measurement information and factors that influence use. The interviews provided insight into the patterns highlighted by the survey data. In addition, the interviews helped to inform recommendations related to use of performance measurement information. The protocol for the interviews consisted of the following format as identified by Creswell (2009, 183): a heading that includes the date, place and interviewee, standard procedures for the interviewer to maintain consistency, space between the questions to record responses, and a thank you statement for the interviewee's participation and time. Written notation and digital voice recording (when permitted) served as the recording mechanism for the interviews. In addition, descriptive coding based on the research questions and theoretical framework was used to identify emerging themes.

A convenience and purposeful sample was used to identify potential interview participation. Convenience sampling involves selecting participants that are easy to reach with the least amount of time and cost incurred by the researcher (Marshall 1996).

Because this sampling technique alone has the potential to provide poor information and lack credibility, purposeful sampling was also used to actively pick a broad range of participants that would help to answer the research questions for this study and suggest other potential interview participants (Marshall 1996). Email notification was sent to select managers and staff requesting their participation. Additionally, participants were invited to participate in the interviews via word of mouth. A total of 20 participants, both managers and staff, were interviewed for this study. There were 11 participants were from ORHP and nine participants were from BPHC. To maximize flexibility and solicit participation, interviews were conducted either face to face or by telephone. The semi-structured interviews of BPHC and ORHP staff took place between September 2012 and January 2013. The interviewer began each interview by documenting the name of the participant, date of the interview, associated program office and position of the interviewee. The interviewer thanked the interviewee for participating in the follow up interview component of the research study and noted that the information from the interview would help to support the survey results and would only be used by the researcher. The participants were then asked whether the interview could be recorded for transcription purposes only and was used accordingly. The interviewer recorded interviews, when permitted, using an iPhone application titled SuperNote for face to face interviews and Google Voice for telephone interviews. The interview consisted of seven semi-structured questions pertaining to the use of performance information in the interviewee's program office. The length of the interviews with each program manager or staff member lasted approximately 30-60 minutes. The responses were then transcribed

and coded according to the purposes of performance measurement use as well as the factors influencing use of performance measurement information.

Validity and Reliability of Interview Tool

Reviewing the validity and reliability of this case study was critical to gaining meaningful information that can be inferred and shared with public administrators. Creswell (2009) states that qualitative validity refers to the researcher's review of accuracy of the results based on using certain procedures and strategies such as triangulation of information, member checking, and peer debriefing. Qualitative reliability refers to the researcher's consistency in the research approach through the development of protocols and procedures and documenting as many aspects of the process as possible (Creswell 2009). This research study ensured both validity and reliability by minimizing errors and biases through the creation of a case study protocol to log, monitor and review the multiple sources that were to be collected and analyzed (Yin 2009). The study made use of triangulation and used written documents to corroborate the survey and interview findings. Written documents included: (1) program funding opportunity announcements and instructions; (2) Congressional budget justifications; policy notices; (3) data-systems-based information; presentations; and (4) others to allow for further analysis. Using this multiple case study methodology provided in-depth data and analysis of how federal managers and staff within the two HRSA program offices use performance measurement information. Other validity and reliability procedures were also utilized such as bias clarification and presentation of negative or discrepant information to strengthen the findings and analysis.

Document Review

In addition to the interviews, a review of publicly available documents from BPHC and ORHP was conducted to support the findings from both the survey data and interview data. This additional review of data created a data triangulation for this study to help strengthen construct validity and is viewed as an added strength within case studies (Yin 2009). This review assessed documents and reports for descriptive data as well as themes to support the analysis of this study. The following documents were reviewed from BPHC: (1) 2013 Congressional Budget Justification; (2) 2013 Annual Performance Plan (3) 2013 Service Area Competition Funding Opportunity Announcement; (4) Program Assistance Letter- Uniform Data System Changes for 2012; (5) 2011 Report to Congress; (6) Program Assistance Letter- Background and Purpose of Performance Measure Implementation for Health Center Grantees (2008) Program Assistance Letter- Background and Purpose of Performance Measure Implementation for Health Center Grantees (2008); and (7) BPHC website. The following documents were reviewed for the ORHP: (1) 2013 Congressional Budget Justification; (2) 2013 Annual Performance Report; (3) Rural Health Network Development Planning Funding Opportunity Announcement; and (4) ORHP 2010 Annual Report. Similar to the interview process, the document review involved examining, coding and identifying emerging themes and descriptive information for interpretation and analysis of performance measurement use within BPHC and ORHP.

Strengths and Limitations of Methodology

There are strengths and limitations associated with all data collection methods. Survey design has been noted by Yang and Miller (2008) to be “a reliable method of data

collection” (251). The purpose of using a survey was to gain a better understanding of how program managers and staff within BPHC and ORHP use performance measurement information. In particular, survey qualities such as accuracy, generalizability, and convenience, helped to quantify data around a certain issue or interest area. Additional strengths associated with surveys include the capacity to exclude interview biases, to provide convenience to survey participants, to reduce and/or eliminate the amount of time dedicated to entering or cleaning the data by the researcher, to administer the survey at the minimal or no cost, and the ability to quickly distribute the survey and receive responses. Conversely, a major limitation to online surveys has also been noted. This limitation includes the inability to obtain the same amount of survey responses as mailed surveys. In response to this limitation, researchers have suggested reaching out to participants with reminders and cover letters to increase the response rate, as well as using a mixed mode survey technique in which the online survey method is paired with other methods. Selmi and Jankowski (2006) and others note examples of these methods such as face to face interaction (such as attending meetings and interviews) and offering participants monetary or non-monetary incentives. Based on this information, both online surveys and paper-based surveys were distributed to each program office. By using a mixed mode survey technique, the response rate for this study was improved.

Assumptions that the information collected from the survey will be accurately reflected through self-reporting also represent a limitation to surveys. To address this limitation, a cover letter accompanied the survey that explained the purpose of the study and defined the terms used within the survey to encourage participation and receipt of reliable information. Surveys also do not provide researchers with an opportunity to gain

a deeper understanding of the respondent's beliefs and values through this method alone, and it does not lend themselves to studying multifaceted associations (Marshall and Rossman 2006). This may be due to the cross-sectional nature of the survey tool which allows the researcher to capture important information, but does not allow the researcher to go back to the participants to gather further data or obtain clarity regarding the responses. To address this potential concern, the study utilized a mixed methods approach in order to take a more comprehensive look at use of performance measurement information at the federal level.

In addition to the survey, there are also strengths and limitations to consider when using interviews. Conducting interviews--whether face to face, by telephone, or via focus groups--are advantageous when direct observations cannot occur and there are opportunities to gather supporting historical information (Creswell 2009, 179). Strengths associated with interviews include gaining a generous amount of information quickly, the ability to immediately obtain clarification regarding responses, and the opportunity to get more in-depth responses to questions. Limitations or weaknesses in using interviews as a data collection tool include cooperation by interviewees, lack of experience with conducting interviews by the researcher, the time involved in collecting the data, and the quality of the data can be questionable. The interview component of the research methodology helped to support and clarified the survey findings. The interviews were conducted on a voluntary basis, similar to the survey process, to provide flexibility to the participants. In addition, the interviews were conducted face-to-face or via telephone.

As stated earlier, in addition to the survey and interview tools, documents were also reviewed to corroborate the findings. Document collection provides an opportunity

for the researcher to get written language from the study participants that provides insightful information; it is also unobtrusive and more convenient to the researcher. Some of the disadvantages or limitations of using this tool include the fact that the documents may not be publicly available, the documents may require transcribing of the data, and there is potential for inaccuracy of the information being used (Creswell 2009, 180).

Risks, Anonymity, and Benefits of the Study

This research study involved minimal risk to respondents. To diminish issues regarding confidentiality and anonymity, the researcher gathered anonymous data from the survey participants so that personally identifying information was not collected. In addition, the data from both the survey and interviews was documented in separate codebooks and the results from the study were only shared in an aggregate format (Creswell 2009; O'Sullivan; Rassel, and Berner 2008). This research did not involve the potential discomfiture or harassment to human subjects beyond the levels encountered in daily life. Respondents received a cover letter, via e-mail, that clearly and succinctly explained the purpose of the research study, the research methods used, the voluntary nature of participation, and assurances that responses would remain anonymous and confidential. O'Sullivan, Rassel, and Berner (2008) maintain that "the relationship between the researcher and the potential subject may cloud the subject's judgment" (253) when the subject or participant is considering their involvement in the study. This can compromise the voluntary nature of the study. To minimize concerns, the researcher provided a clear understanding to participants, through careful wording of the letters and study methods, about the value and appreciation of the information they can provide to

the study. Additionally, the letters reiterated the voluntary nature of the study and the participant's ability to withdrawal from the study at any time.

Summary

In summary, this chapter delineated the methods used for this study through the techniques of surveys, interviews and document review. By conducting a mixed methods case study analysis and triangulating the data from these techniques, the study assisted and strengthened efforts to provide recommendations that support and encourage the use of performance measurement information at the federal level. Understanding the factors that influence the use of performance measurement information may help public administrators and scholars, including federal managers and staff, determine ways to enhance the linkage between performance measurement use and management practices in federal agencies.

CHAPTER 4: RESULTS AND FINDINGS

Introduction

This chapter provides the results and findings for the descriptive and statistical analyses from the survey data as well as from the interview data and document review. The first portion of the chapter provides a detailed description of the variables used in this study. Additionally, the results of the Post Hoc power analysis are discussed regarding the statistical power of the survey to make generalizations about the population studied. From there, the results from the descriptive analysis are shared as well as the findings for both the dependent and independent variables. The results of this analysis were examined by survey responses overall, program office and position. The second portion of the chapter presents the results of the factor analyses which helped determine the underlying structures for the dependent and independent variables. The Cronbach alpha test was conducted following the factor analyses to examine the reliability of the survey scales. This portion of the chapter concludes with the results and findings of the multiple regression analyses. The third and final section of this chapter provides the findings and themes that emerged from the semi-structured interviews and document review.

Measurement of Variables

This study applied the literature review and performance measurement implementation framework to identify the variables or constructs that served as the basis for the survey. Pedhazur and Schmelkin (1991) describe constructs as “theoretical constructions, abstractions, aimed at organizing and making sense of our environment” (52). The following information describes the variables that make up the four construct

factors--performance measurement use, rational/technocratic, political/cultural, and organizational complexity--as well as the survey questions associated with each of these variables. Appendix D, located at the end of the chapter, provides a summary of each variable, its definition, corresponding interview questions and the values or responses for each variable.

Dependent Variables

Performance measurement information is used in organizations for several purposes: accountability, improvement, understanding and mobilization (de Lancer Julnes 2009). Each of the dependent variables was assessed on a 4-point Likert scale ranging from “Great Extent” to “No Extent” and the associated questions were concerning how performance measurement information is used for different purposes within the program office. As outlined on the theoretical framework, there are two types of performance measurement use--instrumental use and non-instrumental use.

Instrumental use is a direct and visible way in which performance measurement information is used for management and decision making practices within organizations. From the literature review, performance measurement use for the purposes of accountability and program improvement are representative of instrumental use. Accountability is well noted as one of the key determinants of performance measurement in public agencies for monitoring and improving program performance (Cavalluzzo and Ittner 2004; Ittner and Larcker 1998). In addition, reporting and communicating performance measurement information have been commonly cited in the literature for the purposes of holding program offices accountable (Cavalluzzo and Ittner 2004; de Lancer Julnes 2009; GAO 2003; Poister and Streib 2005). As a result, accountability was

operationalized as a reporting requirement or a communication tool for program performance.

Program improvement is defined as changes or adjustments to the program in order to improve and enhance performance (de Lancer Julnes 2009; Newcomer 2007). Behn (2003) identified improving performance as one of the eight essential ways to use performance measurement information and acknowledged that there is no one way to represent program improvement since it involves many factors such as organizational structure, resources and capacity and governing limitations. Program improvement was operationalized as using performance measurement information to develop new and/or alter existing programs and processes that will improve and enhance performance.

Non-instrumental use is an indirect way in which performance measurement is used to gain a better understanding of the program and to gain new ideas and perspectives for management and decision making processes (Weiss 1999). Two ways in which this type of use occurs is using performance measurement information for the purposes of understanding and mobilization. Performance measurement use for the purposes of understanding is described as gaining a better understanding of the program and creating learning opportunities (Newcomer 2007; Weiss 1998). For this study, understanding was operationalized to assess whether performance measurement information is used to provide a higher level of understanding, learn more about program accomplishments and challenges and foster a positive learning environment.

Mobilization of performance measurement information is defined as validating and legitimizing positions already held in the program office (Beyer and Tryce 1982; de Lancer Julnes 2009; Weiss 1998). Mobilization was operationalized through using

performance measurement information to help legitimize actions and decisions as well as support program-wide budget recommendations and decisions.

Independent Variables

The independent variables in this study exhibit factors that influence the use of performance measurement information in federal programs and help to address the hypotheses identified earlier in the chapter. The variables fall into three categories of factors: factors within organizational structure, rational/technocratic factors, and political/cultural factors.

Organizational complexity

The organizational complexity factor included the following variables--levels of involvement, processes and procedures, and specializations (Daft and Lengel 1986; Radin 1998). Levels of involvement represented the extent to which other people, levels, or divisions are involved in the decision making process for performance measures. Processes and procedures referred to the extent to which written processes and procedures for performance measures are in place for decision making. Lastly, specializations indicated the extent to which organizational tasks for performance measurement are divided within the program office. Each variable used a 5-point Likert scale ranging from "Great Extent" to "Don't Know" to assess the extent to which the statements were met within the respondents' program office. These variables were associated with the research questions #1 and #3--What factors influence the use of performance measurement information and how and who is using performance measurement information?

Rational and technocratic factors

The rational/technical factors represents another set of variables in the study that are focused on organizational capacity and include having an adequate budget, sufficient staffing, enough training on performance measurement information, and ample access to performance measurement information. The variable budget examined the extent to which performance measurement information was used to inform budget allocations within the program office. Staffing assessed whether the program office was sufficiently staffed to address performance measurement information. The next variable, training, looked at the frequency in which managers and staff were trained to use performance measurement information. Lastly, information looked at the extent to which performance measurement information was shared and accessible. The questions for each variable were assessed on a 5-point Likert scale ranging from “Strongly Agree” to “Don’t Know” and associated with the research questions #1--What factors influence the use of performance measurement information and how?

Political and cultural factors

The last set of factors are the political/cultural factors and involve external stakeholders, innovation and receptiveness of performance measurement information, and rewards and incentives for using this information regarding performance measurement information (de Lancer Julnes 2009; de Lancer Julnes and Holzer 2001; Ho 2005; Melkers and Willoughby 2005; Moynihan and Panday 2010). The variables associated with stakeholder involvement examined the extent stakeholders are interested in and support performance measurement information. Risk-taking and attitudes, the second variable, looked at the innovative practices and receptiveness of performance

measurement information by managers and staff. The last variable, rewards, assessed the extent to which performance measurement information is encouraged and/or rewarded. These questions used a 5-point Likert scale ranging from “Great Extent” to Don’t Know” and are linked to Research question #1--What factors influence the use of performance measurement information and how?

Control variables

The last set of questions solicited demographic information to gather general information regarding the survey respondents. The control variables included the respondent’s program office, position, length of time at HRSA and length of time in program office. The response choices for program office were either (1) BPHC or (2) ORHP. The response choices for position were either (1) management/supervisory or (2) staff/non-supervisory. The response choices for both the length of time worked in HRSA and the length of time worked in their current position included the following: (1) less than 2 years; (2) 2-5 years; (3) 6-9 years; and (4) over 10 years.

Response Rate and Power Analysis

Survey response rates are always a challenge. They are calculated based on the percent of the sample population who answered the survey. Response rates for surveys, based on the type of data collection used, has a wide range. This is even truer in public administration where response rates can be low due to multiple requests from a variety of organizations (Yang and Miller 2008). Nevertheless, Yang and Miller (2008) argue that there are areas in which low response rates are “acceptable and can make important contributions” to the study and even be more accurate than surveys with higher response rates (250-1). The total number of survey respondents was 116 out of 326 indicating an

initial response rate of 35.6 percent. By program office, the BPHC response rate was 31.9 percent (90 out of 282 respondents) and the ORHP response rate was 59.1 percent (26 out of 44 respondents). More specifically, in BPHC, 28 of the respondents (9.9 percent) were managers, 60 of the respondents (21.2 percent) were program staff and two respondents (.7 percent) did not answer this question. In ORHP, five respondents (11.4 percent) were managers, 20 respondents (45.5 percent) were program staff and one respondent (2.3 percent) did not answer this question. Though not a high response rate, it was on par with the typical response rates for online and paper-based surveys. In addition, this survey was supported by 20 semi-structured interviews to managers and staff in BPHC and ORHP which helped to strengthen and validate the survey results.

A power analysis was conducted to determine whether the sample size of this study affected its statistical power. Power is based on components involved in testing significance such as effect size, alpha size, standard deviation and one or two-tail statistical tests. The statistical power range is from 0 to 1 in which a higher percentage (i.e. closer to 1) strengthens the power. The standard target for assessing statistical power is .80, or 80 percent. Research has indicated that when the sample size is larger, the statistical power is stronger (Prajapati, Dunne and Armstrong 2010). However, Pedhazur and Schmelkin (1991, 338-341), note that sample size determinations and statistical tests are not normally found in social behavioral research due to low sample sizes. Based on the effect of power on social behavioral sciences, it can also be assumed that this effect also applies to social science research. To determine the power, a t-test examining two different means among two groups was used. Since the power analysis took place after data collection, a Post Hoc power analysis was conducted using G*Power software. By

using the Post Hoc power analysis, the alpha size and effect size were provided. The alpha size was .05 and the effect size was .5. The total number of survey responses (116) were entered (90 responses for BPHC and 26 responses for ORHP). The result of the power analysis was .72, or 72 percent. The result indicates that the strength of the power analysis is slightly below the recommended 80 percent and, therefore, cannot fully reject the null hypothesis which conveys that the sample size for this study had no effect on its statistical power. However, the power does indicate that the sample size for this study was close to indicating statistical significance. Not achieving statistical power is a limitation to this study; nevertheless, the data that was collected and analyzed for this research study provided valuable insight on the use of performance measurement information in federal agencies and can be used to assist future studies. In addition, the study complemented the survey findings with semi-structured interviews and written documents to explore emerging patterns and propose strategies that encourage the use of performance measurement information within federal agencies.

Descriptive Analysis

A descriptive statistical analysis was conducted and the results are reflective of the data's frequencies, means and standard deviations. The survey results indicated that 116 out of a possible 326 managers and staff (35.6 percent) from both program offices responded to the survey. At the program level, 90 out of 282 people (31.9 percent) completed the survey in BPHC and 26 people out of 44 people (59.1 percent) completed the survey in ORHP. The descriptive analysis provides the survey results regarding

performance measurement use and the factors that influence use from three perspectives: the overall responses, responses by program office and responses by position.

Demographic information

The survey's demographic questions pertained to the respondent's program office, position, length of time at HRSA, and length of time in their current program office.

There were 116 (35.6 percent) managers and staff from BPHC and ORHP who responded to the survey, either online or paper-based; however, two survey responses are missing data (one from each program office). As a result, the two missing cases were removed from the pool of survey responses which left a total of 114, or 34.9 percent, survey respondents for descriptive analysis, as shown in Table 4.1. Specifically, there were 89 respondents (78.1 percent) for the Bureau of Primary Health Care (BPHC) and 25 respondents (21.9 percent) for the Office of Rural Health Policy (ORHP).

Table 4.1: Distribution of Respondents by Program Office

Program Office	Frequency	Percent
BPHC	89	78.1
ORHP	25	21.9
Total	114	100

Table 4.2 is reflective of the participants' position in their program office at the time of the survey. The choices available to the participants were either management/supervisory or staff/non-supervisory. As anticipated, the majority of the survey respondents held a staff/non-supervisory position within their program office (80 or 70.2 percent). Additionally, there were 33 respondents (28.9 percent) who held a management or supervisory position. The results also identified one missing value for this question which brought the total number of responses to 113. The position

distribution helped to provide some indication of who is using performance measurement information within the two program offices and ways in which the information is being used.

Table 4.2: Distribution of the Respondents by Position

Position	Frequency	Percent
Management/Supervisory	33	28.9
Staff/Non-supervisory	80	70.2
Total	113	99.1
Missing	1	.9
Total	114	100

Table 4.3 provides a further depiction of managers and staff in the program offices. Of the 89 BPHC respondents, 28, or 31.5 percent, were in a management/supervisory position and 60, or 67.4 percent, were in a staff/non-supervisory position. There was one respondent who did not indicate their position in the program office. ORHP responses indicated that there were five (20 percent) respondents in a management/supervisory position and 20 (80 percent) that were in the staff/non-supervisory position within the program office.

Table 4.3: Distribution of the Respondents by Position and Program Office

Program Office		Frequency	Percent
BPHC	Management/Supervisory	28	31.5
	Staff/Non-Supervisory	60	67.4
	Total	88	98.9
	Missing	1	1.1
	Total	89	100.0
ORHP	Management/Supervisory	5	20.0
	Staff/Non-Supervisory	20	80.0
	Total	25	100.0

In addition to identifying their program office and position, participants were asked about their length of time in their program office and within HRSA. Table 4.4 represents the respondent's length of time in HRSA by program office. The results depict that BPHC and ORHP respondents were almost evenly split between working at HRSA either six or more years or less than five years. Most BPHC respondents (31 or 34.8 percent) indicated that they have worked in HRSA for over 10 years. In addition, a majority of ORHP respondents have worked in HRSA between six and nine years (10 or 40 percent). On the other hand, 43 BPHC respondents, or 48.3 percent, denoted that they have worked in HRSA for less than five years. Similarly, 10 ORHP respondents, or 40 percent, stated they have worked in HRSA for less than five years. Lastly, five missing responses were found as noted in Table 4.4.

Surprisingly, the results showed that most of the respondents have been in their program office for less than five years (93 respondents, or 81.6 percent). Table 4.5 provides the respondent's length of time in their program office at the time of the study by program office. There were 70 (78.6 percent) BPHC respondents that indicated working in their program office for less than five years.

Similarly, ORHP 23 (92 percent) respondents also responded that they have worked in their program office for less than five years. Similar to the length of time at HRSA, there were 5 missing values for the length of time in their program office, as indicated on Table 4.5.

Table 4.4: Demographic Characteristics of the Survey Responses by Program Office Regarding Length of Time in HRSA

Program Office	Years	Frequency	Percent
BPHC			
	< 2years	18	20.2
	3-5 years	25	28.1
	6-9 years	10	11.2
	>10 years	31	34.8
	Total	84	94.4
	Missing	5	5.6
	Total	89	100.0
ORHP			
	< 2years	4	16.0
	3-5 years	6	24.0
	6-9 years	10	40.0
	>10 years	5	20.0
	Total	25	100.0

Table 4.5: Demographic Characteristics of the Survey Responses by Program Office Regarding Length of Time in Program Office

Length of time in Program Office	Frequency	Percent
BPHC		
< 2years	40	44.9
3-5 years	30	33.7
6-9 years	6	6.7
>10 years	8	9.0
Total	84	94.4
Missing	5	5.6
Total	89	100.0
ORHP		
< 2years	8	32.0
3-5 years	15	60.0
6-9 years	1	4.0
>10 years	1	4.0
Total	25	100.0

Instrumental Use of Performance Measurement Information

As previously stated, the literature suggests that instrumental use occurs for the purposes of accountability and program improvement. These purposes were

operationalized by the following variables: communication tool and reporting requirement for accountability and changing or adjusting programs for program improvement. As displayed in Table 4.6, the descriptive analysis results regarding performance measurement use indicated that 98 survey respondents, or 86 percent, found that use as a communication tool occurred at either a great (52 respondents, or 45.6 percent) or considerable extent (46 respondents, or 59.6 percent). There were 16 (14 percent) respondents who reported use as a communication tool to a limited extent. Similarly, 108 (94.7 percent) respondents considered use as a reporting requirement to a great (68 respondents, or 59.6 percent) or considerable (40 respondents, or 35.1 percent) extent with only 6 (5.3 percent) respondents indicating the use of performance measurement information as a reporting requirement to a limited (5 respondents, or 4.4 percent) or no (1 respondent, or .9 percent) extent. Lastly, program improvement as a tool for use of performance measurement information occurred at the highest response category, considerable extent, representing 59 respondents (51.8 percent). Great extent was the second highest response category regarding the use of performance measurement information for program improvement with 38 (33.3 percent) respondents. Lastly, 17 or 15 percent of respondents stated that performance measurement use for this purpose occurred to a limited (15 respondents, or 13.2 percent) or no (2 respondents, or 1.8 percent) extent.

Instrumental use of performance measurement information by program office

Examining instrumental use by program office provided additional insight on performance measurement use at the federal level. As can be observed in Figure 4.1, the responses varied by program office regarding use as a communication tool but were

similar regarding use as a reporting requirement tool and performance improvement tool. In regards to communication tool, 84 (94 percent) BPHC respondents indicated use for this purpose to a great (48 respondents, or 53.9 percent) or considerable (36 respondents, or 40.4 percent) extent. For ORHP, there were high responses in both the considerable extent and limited extent for use as a communication tool. Ten (40 percent) ORHP respondents found that they used performance measurement information as a communication tool to a considerable extent. Similarly, 11 (44 percent) respondents indicated use for this purpose to a limited extent. Perceived use of performance measurement information as a reporting requirement elicited responses at the highest categories, great or considerable extent, and can also be found on Figure 4.1. There were 87 (97.8 percent) BPHC respondents who indicated use for this purpose to a great (5 respondents, or 61.8 percent) or considerable (32 respondents, or 6 percent) extent. However, two (2.2 percent) respondents stated that use as a reporting requirement occurred at a limited extent. Likewise, 21 (84 percent) ORHP respondents perceived that performance measurement information was used for this purpose to a great (13 respondents, or 52 percent) or considerable (8 respondents, or 32 percent) extent. Four (16 percent) respondents indicated that use occurred to a limited (3 respondents, or 12 percent) or no (1 respondent, or 4 percent) extent for reporting requirements. Responses related to perceived performance measurement use for program improvement were similar to use as a reporting requirement for both program offices. There were 80 (89.9 percent) BPHC respondents who reported using performance measurement information for the purposes of program improvement to a great (31 respondents, or 34.8 percent) or considerable (49 respondents, or 55.1 percent) extent. Nine (10.1 percent) respondents

did not agree and reported that use occurred for this purpose to a limited or no extent. In addition, 17 (68 percent) ORHP respondents indicated that perceived use of performance measurement information for program improvement occurred to a great or considerable extent. Figure 4.1 also shows that eight, or 32 percent, of ORHP staff found that use for program improvement occurred to a limited or no extent. As Figure 4.1 clearly shows, both program offices strongly associate use of performance measurement information for communicating, reporting and improvement, all of which are indicative of instrumental use.

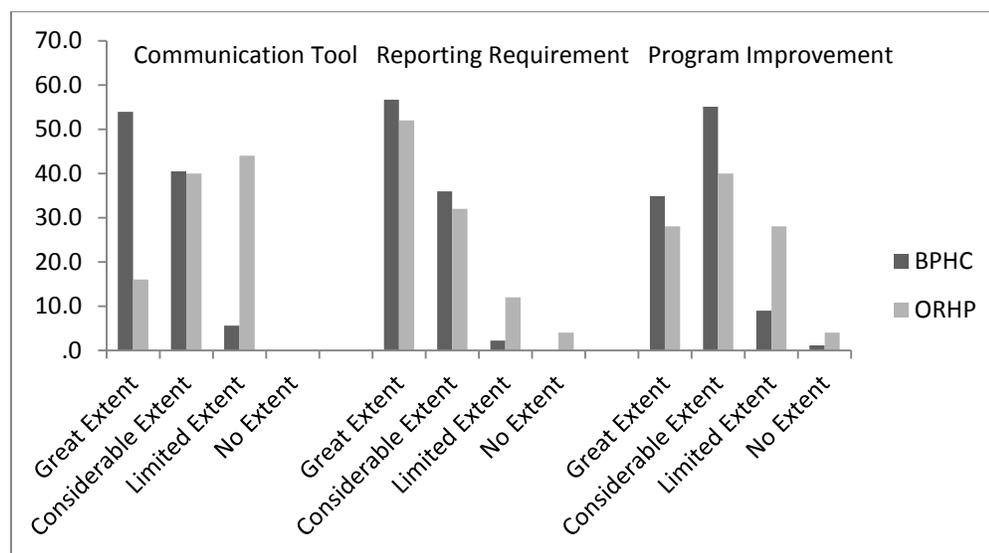


Figure 4.1: Percentage of Instrumental Use by Program Office

Instrumental use of performance measurement information by position

In addition to analyzing performance measurement use by program office, the descriptive data was also analyzed by position. Both managers and staff reported that perceived use of performance measurement information in these three ways occurred at either a great or considerable extent. As depicted in Figure 4.2, which represents instrumental use by position, 30 (90 percent) out of 33 managers indicated that use of

performance measurement information as a communication tool occurred to a great (13 respondents, or 39.4 percent) or considerable (28 respondents, or 35 percent) extent. The remaining three respondents (9.1 percent) stated that use for this purpose occurred to a limited extent. Comparatively, 67, or 83.8 percent, staff members also responded that use for this purpose happened to a great (39 respondents, or 48.8 percent) or considerable (28 respondents, or 35 percent) extent. When asked about using performance measurement information for reporting requirements, 31 managers (93.9 percent) replied that use occurred to a great (23 respondents, or 69.7 percent) or considerable (8 respondents, or 24.2 percent) extent. Two (6.1 percent) managers, conversely, indicated that this type of use only happened to a limited extent. Comparably, there were 76 staff members (95.1 percent) overall who reported using performance measurement information as a reporting requirement to a great (45 respondents, or 56.3 percent) or considerable (31 respondents, or 38.8 percent) extent while four staff members (5.1 percent) reported using it in this capacity to a limited (3 or 3.8 percent) or no (2 or 1.3 percent) extent. Program improvement represents the third type of instrumental use. As seen in Figure 4.2, both managers and staff reported using performance measurement information to improve their programs. There were 27 managers (81.8 percent) who reported using performance data in this way to a great extent (11 respondents, or 33.3 percent) or considerable extent (16 respondents, or 48.5 percent). There were six managers, or 18.2 percent, who stated using performance measurement information for this purpose to a limited extent. Similarly, 69 staff members (86.3 percent) indicated using information for program improvement to a great (27 respondents, or 33.8 percent) or considerable (42 respondents, or 52.5 percent) extent.

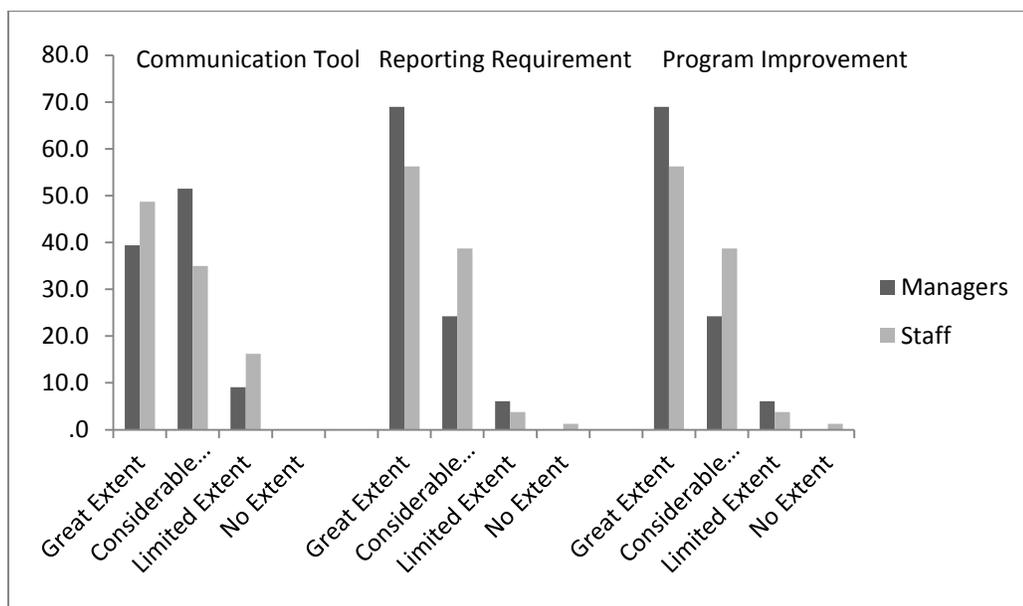


Figure 4.2: Percentage of Instrumental Use by Position

Instrumental use by position and program office

At the program level 27 BPHC managers (96.4 percent) noted perceived use occurred as a reporting requirement to a great (13 respondents, or 46.4 percent) or considerable (14 respondents, or 50 percent) extent and only one manager (3.6 percent) stated that that use for this purpose occurred to a limited extent. Similar to BPHC managers, 56 BPHC staff members (93.3 percent) also perceived performance measurement use as a communication tool to a great (35 respondents, or 58.3 percent) or considerable (21 respondents, or 35 percent) extent. However, 4 BPHC staff members (6.7 percent) stated that use for this purpose occurred to a limited extent. Three ORHP managers (60 percent) reported using performance measurement information as a communication tool to a considerable extent. However, two ORHP managers, or 40 percent, indicated that use as a communication tool occurred to a limited extent. There were 11 ORHP staff members (55 percent) who perceived that performance measurement

use for the purpose of a communication tool occurred to a great (4 respondents, or 20 percent) or considerable (7 respondents, or 35 percent) extent. However, nine staff members (45 percent) stated that this type of use occurred to a limited extent. BPHC (27 respondents, or 96.4 percent) and ORHP managers (four and 80 percent) also indicated use of performance measurement information for the purpose of reporting requirements to a great or considerable extent. Staff for these program offices agreed with their managers; 59 BPHC staff members, or 98.3 percent, and 17 ORHP staff members, or 85 percent, responded in the same manner.

Examining program improvement at the programmatic level provided some additional insight on how performance measurement information is used. In BPHC, 24 managers (85.7 percent) and 55 staff members (91.7 percent) reported using this information for program improvements to either a great or considerable extent. Similarly, three ORHP managers, or 60 percent, and 14 ORHP staff members, or 70 percent, used performance measurement information for program improvements or considerable extent.

As this section clearly shows through examining instrumental use overall, by program office and by position, there is a strong perception that instrumental use of performance measurement information occurs for the purposes of communication information, reporting information, and program improvement. The next section of the descriptive analysis will examine non-instrumental use of performance measurement information.

Non-instrumental Use of Performance Measurement Information

Using performance measurement information for the purposes of greater understanding and mobilization is considered non-instrumental use. Non-instrumental use

is the unobserved, less obvious ways in which organizations use performance measurement information to make decisions and manage programs as well as performance. The ways in which this information is used non-instrumentally were operationalized by the following variables: higher level of understanding, learning program accomplishments and challenges, fostering a positive learning environment, legitimizing actions and decisions and program-wide budget recommendations and decisions.

Table 4.6 provides the frequency distribution of all of both instrumental and non-instrumental use variables. Performance measurement use for the purpose of understanding involved three variables--higher level of understanding, learning about program accomplishments and challenges, and fostering a positive learning environment. There were 88 respondents (77.2 percent) who perceived that the use of performance measurement information as a tool for a higher level of understanding occurred at either a great extent or considerable extent; however, 25 respondents (22 percent) indicated that use for that purpose occurred to a limited or no extent. Similarly, 85 respondents (74.6 percent) reported using performance measurement information as a tool for learning about program accomplishments and challenges to a great or considerable extent but results also indicate that 29 respondents (25.4 percent) stated that use for this purpose happened to a limited or no extent. When asked about the extent to which performance measurement information is used to foster a positive learning environment, there was more variation in the responses. There were 69 respondents (60.5 percent) who perceived using information for this purpose to a great (19 respondents, or 16.7 percent) or considerable (50 respondents, or 44 percent) extent. On the other hand, 45 respondents

(39.5 percent) stated that using information to foster learning occurred to a limited (37 respondents, or 35 percent) or no (8 respondents, or 7 percent) extent.

Mobilization variables, legitimizing actions and decisions and program-wide recommendations and decisions, that are associated with the use of performance measurement information were examined next. A high number of respondents (88, or 77.2 percent) perceived using performance measurement information to legitimize actions and decisions to a great (42 respondents, or 36.8 percent) or considerable (46 respondents, or 40.4 percent) extent although 26, or 22.8 percent, of respondents stated that use occurred for this purpose to a limited (23 respondents, or 20.2 percent) or no (3 respondents, or 2.6 percent) extent. Lastly, about 66 percent of the respondents (75 out of 114) indicated that performance measurement information is used to a great (33 respondents, or 28.9 percent) or considerable (42 respondents, or 36.8 percent) extent for program-wide budget recommendations and decisions while 37 (32.5 percent) used it to a limited (29 respondents, or 25.4 percent) or no (eight respondents, or 7 percent) extent.

Non-instrumental use of performance measurement information by program office

A further review of the descriptive analysis occurred at the program level as seen in Figure 4.3. In assessing the non-instrumental use of understanding, approximately 86 percent of BPHC respondents (76 out of 114) stated that the use of performance measurement information as a tool for higher levels of understanding was to a great extent (37 respondents, or 41.6 percent) or considerable extent (39 respondents, or 43.8 percent); however, 48 percent of ORHP respondents (12 out of 25) stated that it was used for this purpose to a limited extent. When asked whether performance measurement information was used as a tool for learning about program accomplishments and

challenges, 42, or 47.2 percent, of BPHC respondents reported use for this purpose to a great extent and 30, or 33.7 percent, reported it to a considerable extent; however, ORHP respondents appeared to be split between considerable extent (eight respondents, or 32 percent) and limited extent (eight respondents, or 32 percent). Use of performance measurement information as a tool to foster a positive learning environment was found to occur in BPHC to a considerable extent (43 respondents, or 48.3 percent) and in ORHP to a limited extent (11 respondents, or 44 percent).

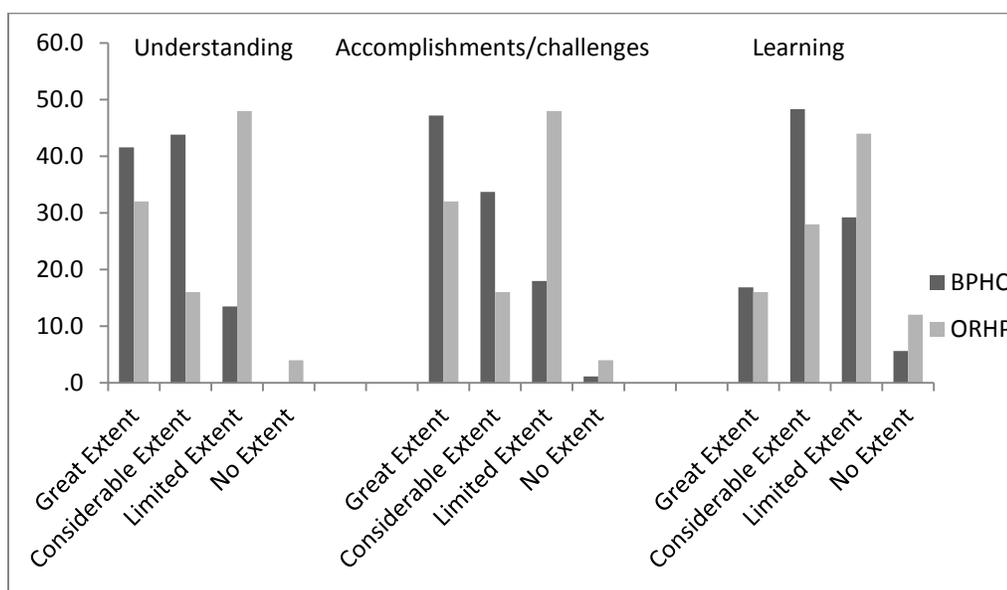


Figure 4.3: Percentage of Non-Instrumental Use for Understanding by Program Office

An assessment of performance measurement use towards mobilization indicated that 84.3 percent of BPHC respondents (75 out of 114) who stated that legitimizing actions occur to a great (37 respondents, or 41.6 percent) or considerable (38 respondents, or 42.7 percent) extent; however, 40 percent of ORHP respondents (10 out of 25) perceived use to occur in this capacity to a limited extent. Lastly, 64 (71.9 percent) BPHC respondents reported that the use of performance measurement information for program-

wide budget recommendations and decisions occurred to a great (29 respondents, or 32.6 percent) or considerable (35 respondents, or 39.3 percent) extent; however, 10 ORHP respondents (40 percent) reported use for this purpose to a limited extent. A visual depiction of this information is provided in Figure 4.4. The differences observed in survey responses for using performance measurement information for the purposes of understanding and mobilization may be reflective of the program office culture and its openness to new ideas and practices.

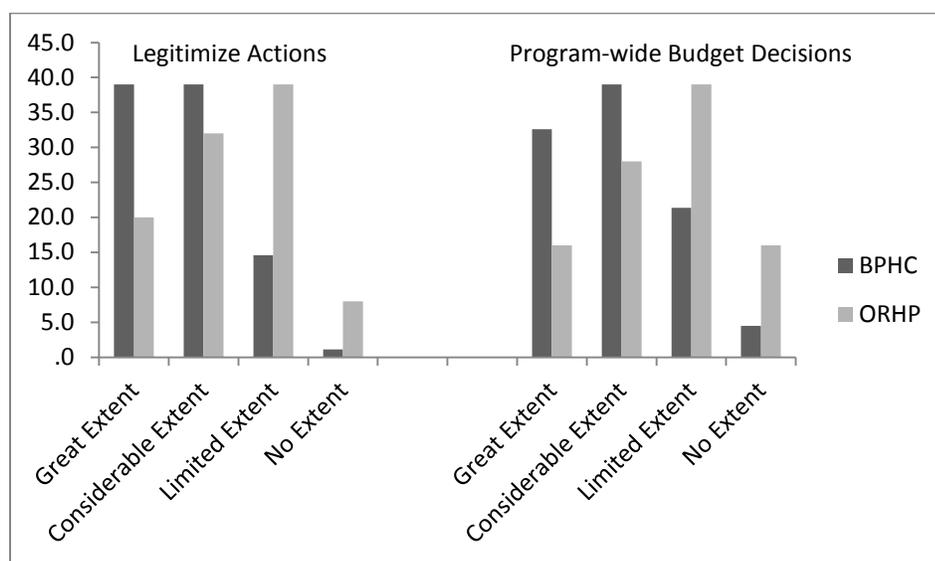


Figure 4.4: Percentage of Non-Instrumental Use for Mobilization by Program Office
Non-instrumental use of performance measurement information by position

The next review on non-instrumental use involved examining use by position. Figure 4.5 shows the percentage of non-instrumental use for variables associated with performance measurement use for the purpose of understanding by position. These variables include perceived use of performance measurement information to gain a greater understanding of their program, to learn about program accomplishments and challenges, and to foster a positive learning environment. Twenty-eight (84.8 percent)

managers indicated using performance measurement information to gain a greater understanding of their program to a great extent (14 respondents, or 42.4 percent) or considerable extent (14 respondents, or 42.4 percent). Similar results can be found for program staff but the results also indicate that approximately 24 percent of program staff believe that this type of use only happened to a limited extent. Fifteen, or 45 percent, of managers reported use of performance measurement information to learn program accomplishments and challenges to a great extent; eight managers (24.7 percent) reported it to a considerable extent and nine managers (27.3 percent) stated that it was used to a limited extent. Program staff reported the following regarding the perceptions of the extent to which performance measurement information is used to learn program accomplishments and challenges in their program office: 32 program staff (40 percent) reported it at a great extent, 29 (36.3 percent) reported it at a considerable extent and 15 (18.8 percent) program staff reported it at a limited extent. Lastly, when asked about using performance measurement information to foster a positive learning environment, the perceptions of both managers and staff were divided between considerable and limited extent. Thirteen (39.4 percent) managers stated use for this purpose to a considerable extent and 14 (42.4 percent) stated use to a limited extent. Similarly, 37 program staff members (46.3 percent) reported using performance measurement information to a considerable extent and 22 (27.5 percent) used it to a limited extent.

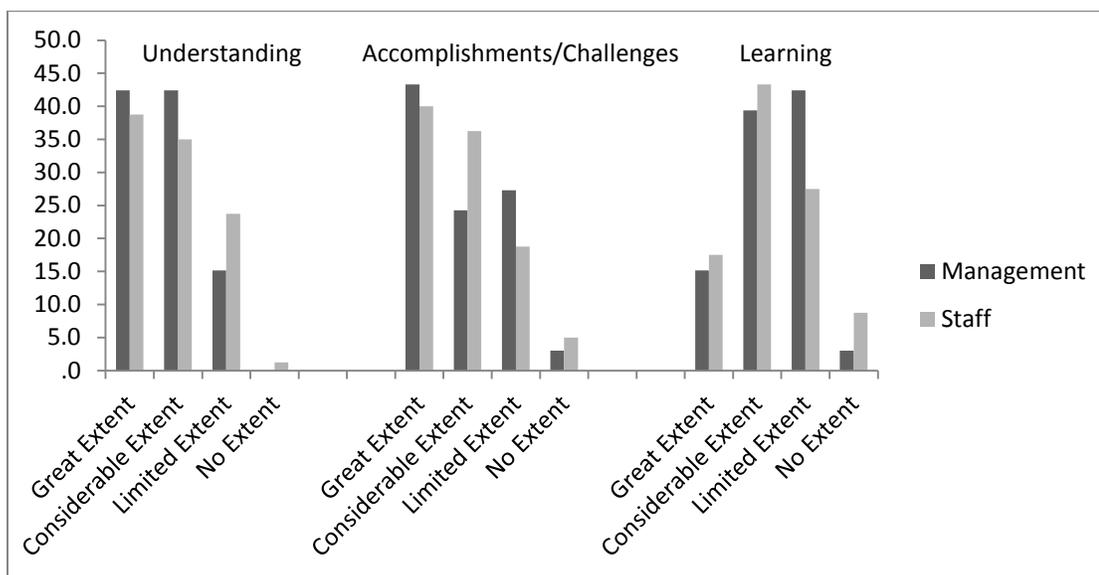


Figure 4.5: Percentage of Non-Instrumental Use for Understanding by Position

Similarly, Figure 4.6 displays the percentage of non-instrumental use for variables associated with performance measurement use for the purpose of mobilization by position. The variables for mobilization included use of performance measurement information to legitimize actions or decisions and for program-wide budget decisions. Ten managers (39.4 percent) indicated using performance measurement information for the purposes of legitimizing action or decisions at a great extent and 12 managers (36.4 percent) specified use for this purpose at a considerable extent. Similarly, 29 program staff (36.3 percent) stated use for this purpose at a great extent and 22 program staff indicated it at a considerable extent. There were managers and staff, however, who found that use happened at limited extent (24 percent and 18.8 percent respectively).

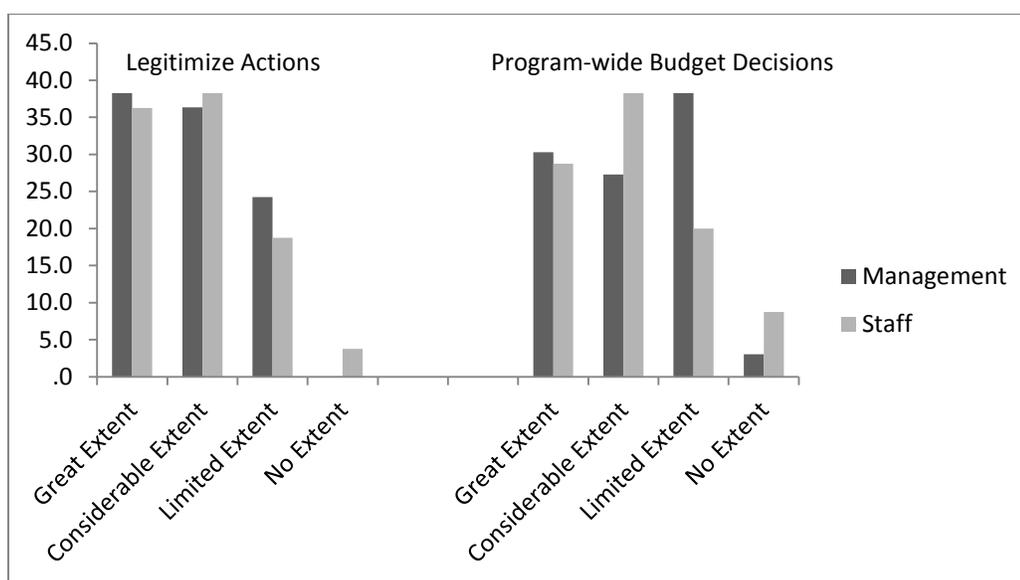


Figure 4.6: Percentage of Non-Instrumental Use for Mobilization by Position

Non-instrumental use of performance measurement information by position and program office

At the program level, most BPHC managers and staff believed that performance measurement information was used at a great or considerable extent. Specifically, 25 BPHC managers (89.3 percent) and 50 BPHC staff members (83.3 percent) indicated that performance measurement information was used at a great or considerable extent. In contrast, responses from ORHP managers and staff were split. Only 10 ORHP managers (40 percent) perceived that performance measurement information was used to a great extent to achieve higher level of understanding while two managers found use for this purpose to be at a limited extent (40 percent). However, 10 ORHP staff members (50 percent) found use for a higher level of understanding only occurred to a limited extent. Similarly, both BPHC managers and staff reported use for the purpose of learning about program accomplishments and challenges to a great extent or considerable extent. Fifteen

BPHC managers (53.6 percent) responded that perceived use of performance measurement information for this purpose happened to a great extent and 50 BPHC staff members (approximately 83 percent) stated that information was used for learning program accomplishments and challenges to both a great and considerable extent. Four ORHP managers, on the other hand, were divided on this question. Two managers (40 percent) responded that it occurred to a considerable extent and the other two managers (also 40 percent) responded that use in this manner happened to a limited extent. Similar to the managers, ORHP staff was divided between using performance measurement information to learn about program accomplishments and challenges to a considerable extent (6 respondents, or 30 percent) and limited extent (6 respondents, or 30 percent). BPHC managers stated that using performance measurement information for fostering a positive learning environment was equally used to a considerable extent (11 respondents, or 39.3 percent) as well as limited extent (11 respondents, or 39.3 percent). Thirty-two BPHC staff members (53.3 percent) stated performance measurement information was used for this purpose to a considerable extent. Three, or 60 percent, of ORHP managers reported a limited use of performance measurement information for this purpose. Likewise, eight ORHP staff members (40 percent) also agreed that there was limited use for fostering a positive learning environment. Perceived use of performance measurement information towards legitimizing actions and decisions were considered to be to a great extent for BPHC managers (12, or 42.9 percent) and to both a great and considerable extent for BPHC staff (51 respondents, or 85 percent). Three, or 60 percent, of ORHP managers, on the other hand, reported that use for legitimizing actions or decisions occurred to a limited extent. Fourteen ORHP staff members (70 percent) responded that

performance measurement use occurred to both a considerable and limited extent. Lastly, when asked about use of performance measurement information for program-wide budget recommendations and decisions, BPHC managers reported this use to a limited extent (12 or 42.9 percent). However, 27, or 45 percent of BPHC staff members, believed performance measurement information was used for this purpose to a considerable extent. ORHP managers reported use to both a great extent (two respondents, or 40 percent) and considerable extent (two respondents, or 40 percent) for this purpose, though nine ORHP staff member (45 percent) indicated that performance measurement use for program-wide budget recommendations and decisions occurred at a limited extent.

Overall, there were distinct variations in perceptions by both program office and position regarding non-instrumental use. The responses may be indicative of the available resources such as managers and staff with performance measurement expertise or having adequate training and access to using the information for the purposes of understanding, learning and mobilization. In addition, program offices with a culture that is open, innovative and rewarding may support non-instrumental use of performance measurement information. Table 4.6 provides a frequency summary of the study's dependent variables measuring both instrumental and non-instrumental use of performance measurement information.

Table 4.6: Frequency Summary of Dependent Variables Measuring Performance Measurement Use

Variable	Great or Considerable Extent	Limited or No Extent	Total
<u>Instrumental Use</u>			
Communication Tool	98 (85.9%)	16 (14%)	114
Required Reporting	108 (94.7%)	6 (5.3%)	114
Program Improvement	96 (85.1%)	17 (15%)	114
<u>Non-Instrumental Use</u>			
Understanding	88 (77.2%)	25 (22%)	113
Program Accomplishments	85 (74.6%)	29 (25.4%)	114
Positive Learning Environment	69 (60.5%)	45 (39.5%)	114
Legitimize Actions and Decisions	88 (77.2%)	26 (22.8%)	114
Program-wide Budget Recommendations	75 (65.8%)	37 (32.5%)	112

Rational and Technocratic Factors

Rational and technocratic factors represent an organization's capacity to use performance measurement information. Organizational capacity within a program office refers to having adequate funds, staff, training and access to performance measurement information. According to studies examining performance measurement use, rational/technocratic factors are suggested to be influential to instrumental uses such as accountability and program improvement. Respondents were asked to gauge on a 5-point Likert scale from "Strongly Agree" to "Don't Know" the extent to which they agreed with statements concerning their program office's capacity to use performance measurement information. As shown in Table 4.7, survey respondents agreed or strongly

agreed with, these statements on organizational capacity. Specifically, 67 respondents (58.8 percent) agreed that their program office had enough funds to support performance measurement use and 55 (48.2 percent) agreed that their program office had enough staff with knowledge and expertise on performance measures. Similarly, 62 respondents (54.4 percent) agreed that their program office provided enough training on performance measurement to do their jobs effectively. The strongest percentage of agreement pertained to the statement regarding sufficient access to performance measurement information. Approximately 62 percent of the respondents (71 out of 114) agreed that their program office provides sufficient access to performance measurement information in order for them to do their jobs.

Table 4.7: Frequency Distribution of Variables Measuring Rational/Technocratic Factors

Variable	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Total
Enough funds	15 (13.2 %)	67 (58.8 %)	13 (11.4 %)	1 (0.9 %)	18 (15.8 %)	114
Enough Staff	12 (10.5%)	55 (48.2%)	27 (23.7%)	10 (8.8%)	9 (7.9%)	113
Team/Division dedicated	30 (26.3%)	48 (42.1%)	14 (12.3%)	16 (14%)	6 (5.3%)	114
Training	14 (12.3%)	62 (54.4%)	25 (21.9%)	8 (7%)	5 (4.4%)	114
Sufficient Access to information	19 (16.7%)	71 (62.3%)	16 (14%)	3 (2.6%)	5 (4.4%)	114

Rational/technocratic factors by program office

When reviewed from the program office perspective, both program offices' respondents agreed with the statement that their office had enough funds to support and sustain performance measurement information (50 respondents, or 56.2 percent in BPHC, and 17 respondents, or 68 percent, in ORHP). However, when asked about having

enough staff with knowledge and expertise on performance measurement, 56.2 percent of BPHC respondents stated that they agreed and 40 percent of ORHP respondents stated they disagreed. Similarly, 45 BPHC respondents (50.6 percent) agreed that their program office has a team or division dedicated to reviewing performance measurement information where 12 ORHP respondents (48 percent) stated that they strongly disagreed. Differences were also noted between the two program offices when asked about having enough training on performance measurement information to do their job. Fifty-six BPHC respondents (62.9 percent) indicated agreement that they have enough training on performance measurement information to do their job and 14 ORHP respondents (56 percent) either disagreed (28 percent) or strongly disagreed (28 percent). Lastly, respondents from both program offices agreed that their office provides sufficient access to performance measurement information to do their job (approximately 67 percent for BPHC and 44 percent for ORHP). Figure 4.7 represents the differences found between the two program offices regarding the following the variables associated with rational/technocratic factors: (1) having enough staff with knowledge and expertise on performance measures, (2) having a team or division dedicated to reviewing performance measurement information, and (3) having enough training to do their job.

Rational/technocratic factors by position

Rational/technocratic factors are examined even further at the position level. There were 28 managers (84.8 percent) that agreed with the statement that their program office had enough funds to support and sustain performance measurement information.

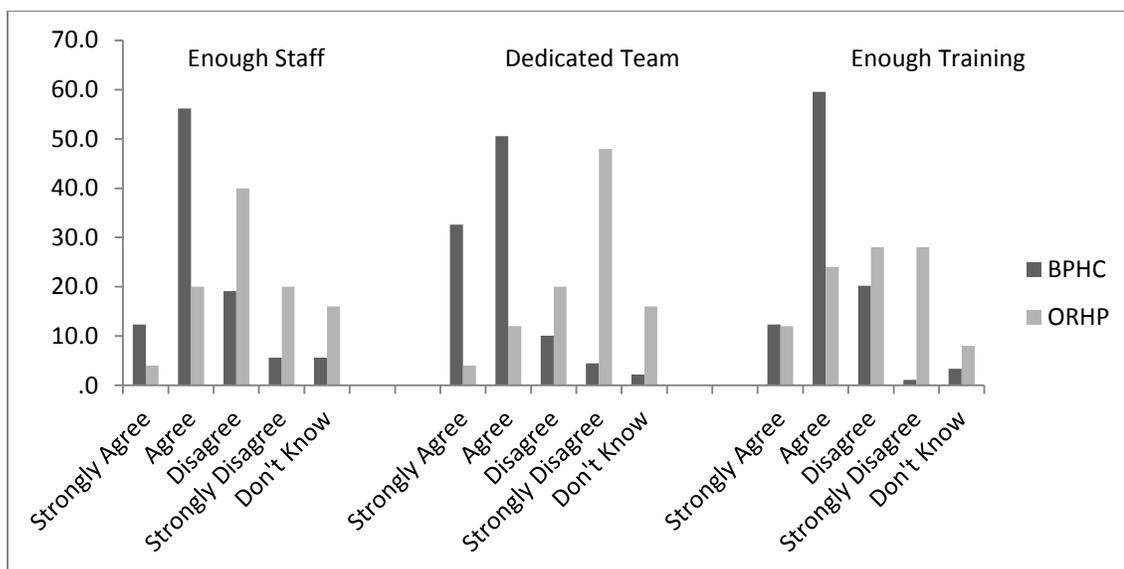


Figure 4.7: Percentage of Differences in Rational/Technocratic Factors by Program Office

Program staff also agreed with this statement (39 respondents, or 48.8 percent) or strongly agreed (13 respondents, or 16.3 percent). Similarly, both managers (54.5 percent) and staff (45 percent) agreed with the statement their program office has enough staff with knowledge and expertise on performance measurement as well as having a dedicated team or division dedicated to reviewing performance measurement information (managers: 48.5 percent; and program staff: 38.8 percent). In addition, there were several managers (30.3 percent) and staff (25 percent) strongly agreed with the statement. Lastly, 75.8 percent of managers and 57.2 percent of program staff agreed that they had sufficient access to performance measurement information. Figure 4.8 displays the responses reported by position regarding having enough staff as well as a dedicated team or division.

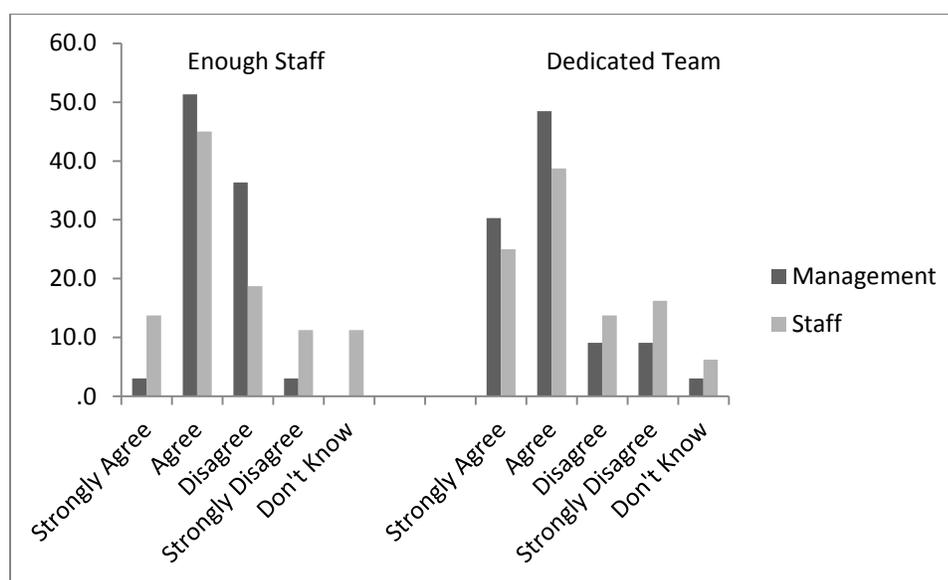


Figure 4.8: Percentage of Differences in Rational/Technocratic Factors, Enough Staff and Dedicated Team, by Position

Rational/technocratic factors by position and program office

An additional analysis was conducted by position and program office. Twenty-three BPHC managers (82.1 percent) and 27 BPHC program staff (45 percent) agreed with the statement that their program office has enough funds to support performance measurement information. Similarly, 5 ORHP managers (100 percent) and 12 ORHP program staff (60 percent) also agreed that their program office has enough funds to support performance measurement information. When asked whether their program office had enough staff with knowledge and expertise on performance measurement, 17 BPHC managers (60.7 percent) and 32 BPHC program staff (53.3 percent) agreed with this statement. However, 4 ORHP managers (80 percent) and 6 ORHP program staff (30 percent) disagreed with the statement that their program office had enough staff with knowledge and expertise on performance measurement. Moreover, BPHC and ORHP

responses differed when asked whether the program office had a team or division dedicated to reviewing performance measurement information. Fifty-three percent of BPHC managers and 48.3 percent of staff members agreed with this statement, but 60 percent of ORHP managers and 45 percent of ORHP staff members strongly disagreed. Respondents were then asked whether there was enough training on performance measurement information to do their job. Though 17 BPHC managers and 39 BPHC staff members agreed that they received enough training (60.7 percent and 65 percent respectively), ORHP managers and staff were divided on this question. An equal number of ORHP managers both agreed (2 or 40 percent) and disagreed (2 or 40 percent) that there was enough training to do their job. ORHP staff members, however, were divided. Five ORHP staff members agreed with the statement and 10 ORHP staff members (50 percent) disagreed or strongly disagreed with the statement. The last variable focused on whether the program office provided sufficient access to performance measurement information in order to do their job. Twenty-two BPHC managers (78.6 percent) and 38 BPHC staff members (63.3 percent) responded that they agreed that there was sufficient access. Similarly, three ORHP managers (60 percent) and eight ORHP program staff (40 percent) also agreed with this statement.

The descriptive results for rational/technocratic factors indicate different perceptions by program office in regards to having enough staff, a dedicated team or division that works on performance measures and training to be able to effectively use performance measurement information for decision and management practices. These factors have been noted in the literature as having an influential effect on performance measurement use. The results suggest that in order for program offices to use

performance measurement information to enhance program management, considerations need to be made to assess whether there is the capacity to use this information effectively.

Stakeholder Involvement

External stakeholders play a key role in the performance measurement process. Stakeholders refer to external partners that have an interest or are invested in improving performance within the program office. The survey included questions to assess the level of stakeholder involvement regarding performance measurement development, programmatic changes and the extent stakeholders hold the program office accountable (depicted in Table 4.8). There were 36 percent of respondents (41 out of 114) who reported that external stakeholders assist in developing performance measures for their program office to a considerable extent but there were also 25.4 percent (29 out of 114) that indicated that this occurred to a limited extent. Similarly, 39.5 percent of the respondents (45 out of 114) stated that external stakeholders help support programmatic changes in their program office to a considerable extent; however, almost 30 percent (34 out of 114) responded that this happened to a limited extent. Interestingly, approximately 50 percent of respondents (58 out of 114) indicated that external stakeholders hold their office accountable for program improvements and 25.4 percent (29 out of 114) stated that this occurred at a limited extent.

Stakeholder involvement by program office

As noted previously, the performance measurement literature argues that stakeholder involvement is influential in the use of performance measurement information by public organizations. As a result, it was also important to look at stakeholder involvement from the program office level.

Table 4.8: Frequency Distribution of Variables Measuring Stakeholder Involvement

Variable	Great and Considerable Extent	Limited and No Extent	Don't Know	Total
Developing performance measures	50 (43.9%)	39 (34.2%)	25 (21.9%)	114
Support program changes	53 (46.5%)	38 (33.3%)	23 (20.2%)	114
Hold office accountable	58 (50.9%)	37 (32.5%)	19 (16.7%)	114

Seen in Figure 4.9, when respondents were asked whether external stakeholders assist in developing performance measures for their program office, 33 BPHC respondents (37.1 percent) reported that this activity occurred to a considerable extent. ORHP respondents, however, were divided regarding this question. Eight, or 32 percent of ORHP respondents, reported that stakeholders assisted in developing performance measures to a considerable extent while another eight respondents (32 percent) indicated that this occurrence to a limited extent. When asked whether external stakeholders help support programmatic changes, 41.6 percent of BPHC respondents stated that stakeholders help to support programmatic changes to a considerable extent but 36 percent of ORHP respondents described it as occurring less, only to a limited extent. Lastly, 56.2 percent of BPHC respondents (50 out of 114) considered whether external stakeholders held their office accountable for program improvements at either a great (28.1 percent) or considerable (28.1 percent) extent. Forty percent of ORHP respondents, on the other hand, reported that this occurred to a limited extent.

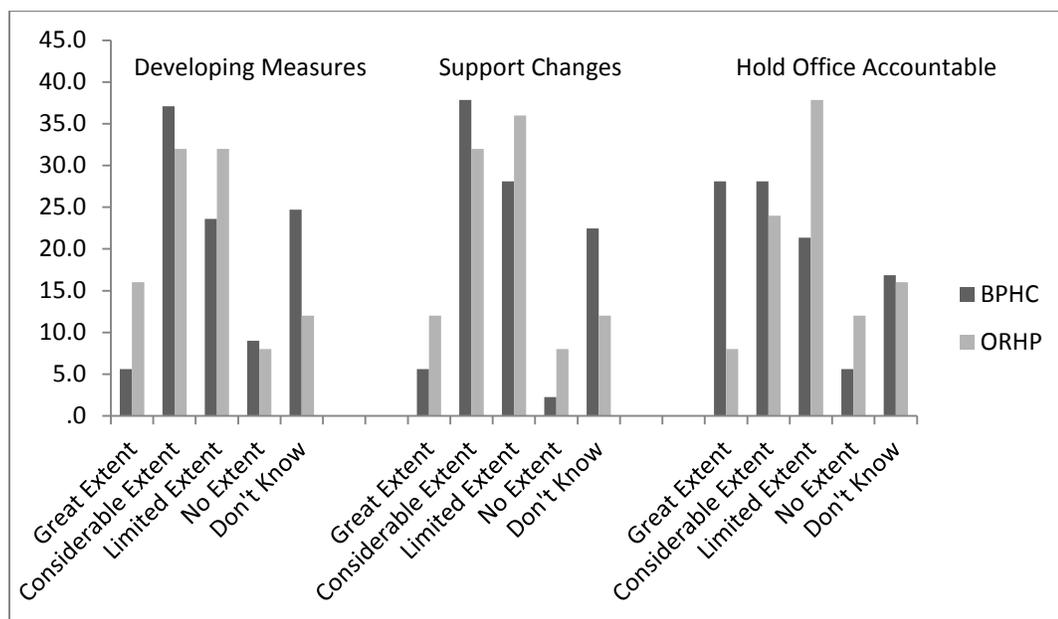


Figure 4.9: Percentage of Variables Measuring Stakeholder Involvement by Program Office

Stakeholder involvement by position

Stakeholder involvement in the use of performance measurement information was also viewed by the position of survey respondents (shown in Figure 4.10). Most of the managers reported that stakeholders assist with developing performance measures to a considerable extent (39.4 percent). Program staff, on the other hand, indicated that stakeholder assistance with performance measurement development occurred at either a considerable extent (35 percent) or limited extent (28.8 percent). Both managers and staff were divided on whether external stakeholders support programmatic changes. Seventeen managers (51.5 percent) stated that this occurred to a considerable extent but 10 managers (30.3 percent) also indicated that this occurred to a limited extent. Similarly, 28 program staff members (35 percent) found that stakeholders supported programmatic changes to a considerable extent; however, 24 program staff members (30 percent) also

believed that this occurred to a limited extent. The third question inquired whether external stakeholders hold their program office accountable based on performance measurement information. As seen in figure 4.10, the responses for managers and staff ranged from great extent to limited extent. Regarding managers' responses, 11 (33.3 percent) indicated that this occurred to a great extent, 11 (33.3 percent) stated that it occurred to a considerable extent and 7 (21.2 percent) responded that it occurred to a limited extent. Likewise, 16 program staff members (20 percent) indicated that stakeholders hold their program office accountable to a great extent, 20 (25 percent) stated that it occurred to a considerable extent and 22 (27.5 percent) responded that it occurred to a limited extent.

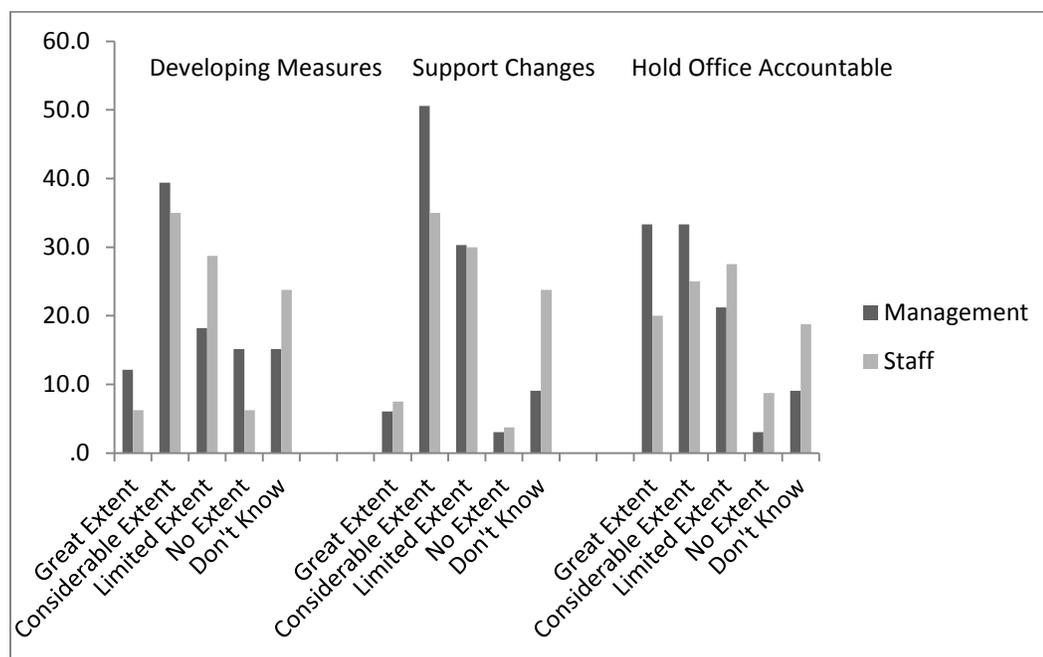


Figure 4.10: Percentage of Variables Measuring Stakeholder Involvement by Position

Stakeholder involvement by position and program office

When stakeholder involvement was examined at both the position and program office level, both BPHC managers and staff reported stakeholder involvement for developing performance measures occurred to a considerable extent (35.7 percent and 38.3 percent respectively). Three out of five ORHP managers stated that this involvement with stakeholders also occurred to a considerable extent (60 percent) but seven out of 20 ORHP staff members reported that occurred to a limited extent (35 percent). When asked to what extent do external stakeholders help support programmatic changes in your program office, BPHC managers and staff stated this activity occurred to a considerable extent (50 percent and 38.3 percent respectively). ORHP managers also stated that stakeholder support of programmatic changes happened to a considerable extent (60 percent); however, staff stated it occurred to a limited extent (40 percent). The final question assessed the extent external stakeholders hold their office accountable for programmatic improvements. BPHC managers responded that this action occurred to a great (32 percent) and considerable (35.7 percent) extent. Similarly, BPHC staff reported it to a great (26.7 percent) and considerable (25 percent) extent. ORHP managers stated that stakeholders hold their office accountable to both great and limited extent (40 percent each); however, ORHP staff stated that this happened to a limited extent (40 percent).

Overall, slightly more respondents perceived that stakeholder were involved to a great or considerable extent for developing performance measures, supporting programmatic changes and holding the program office accountable and there were no major differences in responses by program office and position with two exceptions. In

ORHP there was a clear indication that stakeholders hold their office accountable for program improvements. Also, BPHC managers indicated that stakeholders support programmatic changes.

Organizational Culture

Organizational culture, for the purposes of this study, referred to practices, ideas and strategies regarding performance measurement information. Studies have shown that the culture of an organization is an influential factor to using performance measurement information, particularly non-instrumental use, for decision-making practices through creating an environment of learning and understanding. The survey questions pertaining to organizational culture asked questions related to the program office's practices, ideas and strategies regarding performance measurement information; responses are displayed in Table 4.9. When respondents were asked whether their program office was open to innovative practices for performance measurement, 50 respondents (43.9 percent) stated that these practices occurred to a considerable extent. Respondents, however, were split regarding perceptions on the extent to which their program office rewarded managers on ideas and strategies to use performance measurement information. Twenty-five respondents (25.4 percent) stated that rewarding managers occurred to a considerable extent and 43 respondents (37.7 percent) stated that this occurred to a limited or no extent. Lastly, 55 respondents (48.3 percent) stated that their program office rewards staff on ideas and strategies to use performance measurement information to a limited or no extent.

Table 4.9: Frequency Distribution of Variables Measuring Organizational Culture

Variable	Great Extent	Considerable Extent	Limited Extent	No Extent	Don't Know	Total
Innovative Practices	26 (22.8%)	50 (43.9%)	24 (21.1%)	3 (2.6%)	9 (7.9%)	112
Reward Managers	12 (10.5%)	29 (25.4%)	33 (28.9%)	10 (8.8%)	28 (24.6%)	112
Reward Staff	10 (8.8%)	26 (22.8%)	41 (36%)	14 (12.3%)	21 (18.4%)	112

Organizational culture by program office

To understand more about organizational culture, a review of the findings were conducted at the program office level (shown in Figure 4.11). Forty-one BPHC respondents (46.1 percent) stated that their program office was open to innovative practices for performance measurement to a considerable extent. On the other hand, nine ORHP respondents (36 percent) stated that innovative practices occurred in their program office to a considerable extent and 10 ORHP respondents (40 percent) indicated that it occurred to a limited extent. Both program offices were divided when asked to what extent their program office reward managers on ideas and strategies to use performance measurement information. Twenty-four BPHC respondents (27 percent) believed that this occurred at a considerable extent and 28 BPHC respondents (31.5 percent) indicated that this occurred to a limited extent. Similarly, in ORHP, five respondents (20 percent) noted that this occurred to a considerable rate and another five respondents (20 percent) stated that this occurred to a limited extent. When the question referred to rewarding staff as opposed to managers, 35 BPHC respondents (39.3 percent) stated that this occurred to a limited extent. Within ORHP, 12 ORHP respondents (48 percent) indicated that this occurred at either a limited extent or no extent.



Figure 4.11: Percentage of Variables Measuring Organizational Culture by Program Office

Organizational culture by position

Organizational culture was further assessed at the position level and results are displayed in Figure 4.12. Eighteen managers and 32 program staff indicated that innovative practices occurred in their program offices to a considerable extent (54.5 percent and 40 percent respectively). However, the responses were more divided regarding whether managers were rewarded for ideas and strategies related to performance measurement information. There were 10 managers (30.3 percent) who believed that this occurred to a considerable extent but 12 managers (36.4 percent) stated that it occurred to a limited extent. Likewise, 19 program staff (23.8 percent) indicated that rewarding managers occurred to a considerable extent and 21 program staff (26.3 percent) stated that it occurred to a limited extent. Interestingly, 16 managers (48.5 percent) reported rewarding program staff on ideas and strategies related to performance

measurement information happened on a limited basis. There were, however, 20 program staff (25 percent) that stated it occurred to a considerable extent or 25 program staff (31.3 percent) indicated it occurred to a limited extent.



Figure 4.12: Percentage of Variables Measuring Organizational Culture by Position

Organizational culture by position and program office

When organizational culture was assessed by both position and program office, 15 BPHC managers and 26 BPHC staff believed that their program office was open to innovative practices to a considerable extent (53.6 percent and 43.3 percent respectively). In ORHP, three managers (60 percent) found that this occurred to a considerable extent and eight program staff (40 percent) believed it occurred to a limited extent. When asked whether their program office reward managers on ideas and strategies to use performance measurement information, 10 BPHC managers and 18 BPHC staff reported that this action occurred to a limited extent (35.7 percent and 30 percent respectively); however, 15 BPHC staff (25 percent) also stated that it occurred to a considerable extent. Two

ORHP managers (40 percent) reported that rewarding managers on ideas and strategies to use performance measurement information occurred to a limited extent. ORHP program staff, however, were divided on this question. There were three ORHP staff members (15 percent) that indicated that this occurred to a great extent, four ORHP staff members (20 percent) that stated that it occurred to a considerable extent and three ORHP staff members (15 percent) that stated that it occurred to a limited extent. In addition, eight ORHP staff members (40 percent) reported that they did not know whether rewarding managers occurred within their office. The last question in this section asked whether the program office reward staff on ideas and strategies to use performance measurement information: 14 BPHC managers and 21 BPHC staff stated that this was done to a limited extent (50 percent and 35 percent respectively). Most ORHP managers reported this to be to a limited extent or no extent (two managers or 40 percent each). In comparison, ORHP staff members indicated that this occurred to a considerable extent or no extent (four ORHP staff members or 20 percent each). In addition, six ORHP staff members (30 percent) reported that they did not know whether rewards were made to staff on ideas and strategies for performance measurement information.

The descriptive results regarding organizational culture seem to indicate that there is some level of innovative practices occurring within the two program offices for program improvement, more so in BPHC than ORHP. The results also suggest that rewarding staff and managers on ideas and strategies may not occur or, if so, this information is not shared within the program office. As noted by GAO (2005), when managers and staff are recognized and rewarded for activities related to the performance measurement process, the more likely they will be encouraged to use this information.

Organizational Complexity

Organizational complexity represents the next set of independent variables included in this study. The survey attempted to assess the characteristics of the program office as they relate to organizational structure and arrangements. In this study, organizational characteristics referred to arrangements and structure within an organization such as branches/divisions, processes/procedures, and tasks that may influence the use of performance measurement information. Table 4.10 displays the responses for the following statements. In terms of the decision making process within the program office, about 37 percent of respondents (42 out of 112) stated that making decisions in their program office involved review and approval of performance measurement information from managers and staff within other teams, branches or division to a considerable extent. When asked about the written processes and procedures that guide the management and decision making processes in their program, 47.4 percent of respondents (54 out of 113) stated that it occurred to a considerable extent. Similarly, 40.4 percent of respondents (46 out of 111) stated that organizational tasks, related to performance measurement, are divided among teams, branches or divisions in their program office to a considerable extent. Interestingly, 32.5 percent of the respondents reported that required approval for performance measurement use in their position by their team, branch or division director occurred to a limited extent. Lastly, 43 percent of respondents (37 out of 111) stated that formal meetings for a specific project best describe their program level decision making processes in their program office.

Organizational complexity by program office

Clearer distinctions can be seen when examining organizational complexity at the program level. As shown in Figure 4.13, there were 38 BPHC respondents (42.7 percent) that reported that their decision process regarding performance measurement involves the review and approval from managers and staff in other parts of the program office to a considerable extent.

Table 4.10: Frequency Distribution of Variables Measuring Organizational Complexity

Variable	Great Extent	Considerable Extent	Limited Extent	No Extent	Don't Know	Total
Review and Approval	22 (19.3%)	42 (36.8%)	34 (29.8%)	3 (2.6%)	11 (9.6%)	112
Processes and Procedures	25 (21.9%)	54 (47.4%)	22 (19.3%)	5 (4.4%)	7 (6.1%)	113
Organizational Tasks	16 (14%)	46 (40.4%)	31 (27.2%)	7 (6.1%)	11 (9.6%)	111
Position Requires Approval	19 (16.7%)	31 (27.2%)	37 (32.5%)	18 (15.8%)	6 (5.3%)	112

On the other hand, 11 ORHP respondents (44 percent) stated that this type of review and approval occurred to a limited extent. Both program offices indicated that written processes and procedures guide the management and decision-making process within their offices to a considerable extent (43 BPHC respondents, or 48.3 percent and 11 ORHP respondents, or 44 percent). Likewise, both program offices reported that the division of organizational tasks related to performance measurement occurred in their program offices to a considerable extent (37 BPHC respondents or 41.6 percent and nine ORHP respondents or 36 percent). Another survey question assessed whether using performance measurement information required approval from their team, branch or

division director. Thirty BPHC respondents (33.7 percent) stated that required approval occurred in their program office to a limited extent and 10 ORHP respondents (40 percent) indicated that this occurred to a considerable extent. The last question in this section pertained to the program office’s decision making process in which a majority of BPHC respondents reported that the process occurs as either a “formal decision making committee with regularly scheduled meetings and agenda” (33 respondents, or 37.1 percent) or as “formal meetings for a specific project” (35 respondents, or 39.1 percent). In ORHP, 14 respondents (56 percent) stated that the process occurs as “formal meetings for a specific project.”

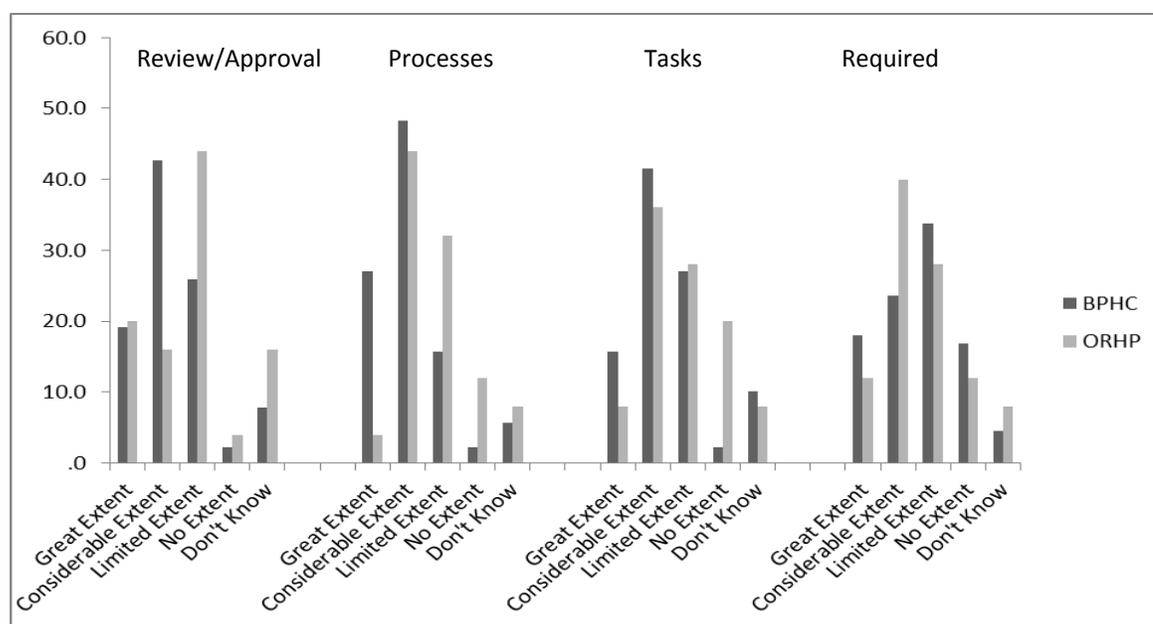


Figure 4.13: Percentage of Variables Measuring Organizational Complexity by Program Office

Organizational complexity by position

Similar to the other dependent and independent variables, organizational complexity was examined further at the position level and the results are shown in Figure

4.14. There were 17 managers (51.5 percent) who indicated that decisions are made using a review and approval process to a great extent (8 managers, or 24.3 percent) or considerable (9 managers, or 27.3 percent) extent. In addition, 13 managers (39.4 percent) stated that this type of review process only occurred to a limited extent. Forty-six (57.5 percent) program staff reported that the review and approval process took place in this manner to a great extent (17.5 percent) or considerable extent (40 percent). However, only 21 (26.3 percent) staff members found that this occurred to a limited extent. Approximately a third of the managers (22, or 66.7 percent) and over half of program staff members (56, or 70 percent) responded that written processes and procedures helped to guide management and decision practices in their program office to a great or considerable extent. Responses were more divided when asked about the distribution of organizational tasks within the program office. Eighteen managers (54.5 percent) stated that tasks related to performance measures were divided between a great extent (6, or 18.2 percent) and considerable extent (12, or 36.4 percent). However, 1 respondent (33.3 percent) indicated that this activity occurred to a limited extent. Roughly half of the program staff (55 percent), on the other hand, found that division of organizational tasks occurred to a great extent (10, or 12.5 percent) or considerable extent (34, or 42.5 percent). When asked about whether their position required approval, most of the managers reported that their position required approval on a limited basis (11, or 33.3 percent) or not at all (8, or 24.2 percent). Program staff, on the other hand, were divided between considerable extent (24, or 30 percent) and limited extent (26, or 32.5 percent). The last question pertained to the decision making processes and both managers and staff

indicated that there was either a formal decision making committee or formal meetings in place.

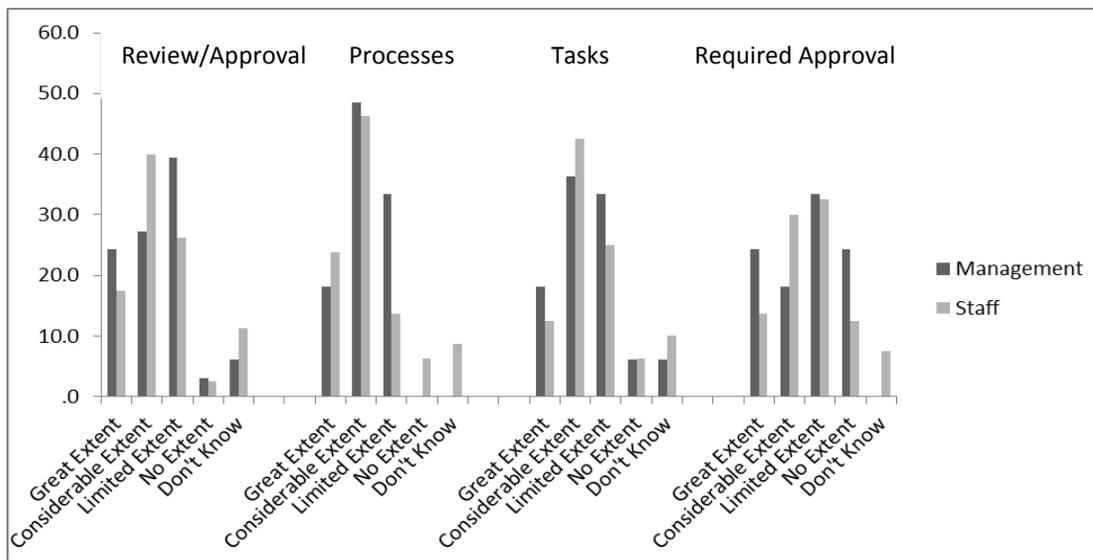


Figure 4.14: Percentage of Variables Measuring Organizational Complexity by Position
Organizational complexity by position and program office

When questions associated with organizational complexity were reviewed at the program and position levels, BPHC managers reported that their decision making involves the review and approval from managers and staff only to a limited extent (11, or 39.3 percent). BPHC staff reported review and approval occurred to a considerable extent (28, or 46.7 percent). Interestingly, ORHP managers found the review and approval process happened to both a great and limited extent (two, or 40 percent each) and nine ORHP staff (45 percent) found that this occurred to a limited extent. When asked about the extent to which written processes and procedures guide the management and decision making processes in their program office, 15 BPHC managers (53.6 percent) and 27 BPHC staff (45 percent) found that processes and procedures were used to a considerable extent for making decisions and managing programs . ORHP managers reported that this

occurred to a limited extent (four, or 80 percent) while ORHP staff reported this to a considerable extent (10, or 50 percent). Furthermore, 10 BPHC managers (35.7 percent) reported that the division of organizational tasks, related to performance measurement, occurred to both a considerable extent and 11 limited extent (39.3 percent) but 27 BPHC staff (45 percent) stated this occurred to a considerable extent ORHP managers found the division of tasks happened to both a considerable and no extent (two, or 40 percent each). ORHP staff, however, indicated that division of tasks occurred to both a considerable and limited extent (seven, or 35 percent each). Regarding whether using performance measurement information in their position required approval from their team, branch or division director, both BPHC managers and staff found that this occurred to a limited extent (9, or 32.1 percent and 21, or 35 percent respectively). ORHP on the other hand, responded differently. Interestingly, ORHP managers believed that their position required approval within their program office occurred to both a great extent (2, or 40 percent) and limited extent (2, or 40 percent) and nine ORHP staff (45 percent) believed this happened to a considerable extent. The final question concentrated on the decision making process in the program office. Thirteen BPHC managers (46.4 percent) and 22 BPHC staff (36.7 percent) reported that this process occurred through formal meetings for a specific project with formal committees as the second highest category (11, or 39.3 percent and 21, or 35 percent respectively). ORHP managers found that decision making occurred through both formal decision making committee with regularly scheduled meetings and agenda and through formal meetings with a specific project (two, or 40 percent each). In addition, 12 ORHP staff (60 percent) found that formal meetings for a specific project occurred for decision making.

The responses overall for organizational complexity were relatively consistent when examined by program office and by staff. One exception was the varied responses for the review and approval for decision-making. BPHC believed this occurred more often than ORHP did within their respective offices. One reason may be the decision making structure within the program office. As mentioned previously, a complex organization is more likely to have a structure in place for decision making which involves multiple levels of engagement within the organization. From that perspective, the results suggest that BPHC's structure encourages performance measurement use.

Factor Analysis

A validation of the survey's questions and scales was completed through a factor analysis. Factor analysis is a data reduction method that decreases an extensive amount of variables into something that is more manageable, factors or constructs (Pallant 2007, 179). In addition, factor analysis functions under the concept that these factors or constructs cannot be measured directly but can be seen through the grouping of correlated variables (Yang and Miller 2008, 528). For the purposes of this study, an exploratory factor analysis was conducted to reduce the data and identify the underlying dependent and independent constructs or factors based on the theoretical framework. To begin, the following steps were used to conduct the factor analyses: assessing the suitability of the data, conducting factor extraction and rotating the factor.

When considering if data are suitable for factor analysis, Pallant (2007) states that one must examine the "sample size and the strength of the relationship among the variables" (180). There is little consensus on how large a sample size should be; but most research states that the size should be large for the test to have a higher power (Pedhazur

and Schmelkin 1991). The authors further note that larger sample sizes provide greater validity and increase the probability to reject the model. In contrast, smaller sample sizes increase the probability of supporting the null hypothesis which is the hypothesis of choice (Pedhazur and Schmelkin 1991). With increasing research on sample size in factor analysis, it has also been found that smaller sample sizes are okay if the variables load above .80. In addition, communalities that are higher than .5 after extraction and have a small sample size may also be suitable for the study (Field 2005).

The other assessment that needs to be considered when reviewing the use of factor analysis is the strength of the relationship among the variable. One of the ways to assess this relationship is the Bartlett's Test of Sphericity. Pedhazur and Schmelkin (1991) describe the test as a way to see whether the correlations in the analysis are statistically different when they are tested together (596). The test results indicated that each factor analysis that was conducted was significant.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy has a range from 0 to 1. The suggested minimal value for this measure is .6 to be considered for factor analysis. After assessing the suitability of data for factor analysis, factor extraction is the next step in the process. This study used the principle components extraction technique for the dependent factor analysis which is often used and the principal axis factoring extraction technique for the independent factor analyses. Pallant (2007) states that the eigenvalue value denotes "the amount of the total variance explained by that factor" (182). In most scenarios, only factors over 1.0 should be considered. Alternatively, the researcher can also determine the number of factors in the analysis (Field 2009; Pallant

2007). After factors are determined, the final component of the process includes rotating the factors to understand or interpret them.

The initial factor analysis was conducted on the dependent variables associated with the study using SPSS 16. These variables focused on the various purposes of using performance measurement information within the program office. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy, or KMO and Barlett's Test of Sphericity, were used to assess the reliability of the factor being developed. The range for the KMO is between 0 and 1. For reliable factors, the recommended value of KMO is .6 or above (Field 2009). As shown in Table 4.11, the KMO value for performance measurement use was .885 which is above the recommended value and therefore, meets the requirement for the first factor analysis assessment. In addition to the KMO value, the Barlett's Test of Sphericity indicates suitability to continue the analysis. This test was found to be statistically significant (.000). In addition, the correlation matrix indicates coefficients that are .3 and above, and the communalities above .6.

The factor analysis for the dependent variable was examined in several ways. The researcher conducted this analysis in multiple methods concurrently: (1) using both principal components and principal axis factoring extraction techniques; (2) rotating the analysis by both varimax orthogonal rotation and direct oblimin rotation; and (3) assessing results of 1 through 4 factors. The purpose of examining factors beyond the eigenvalue of 1.0 was to explore whether there was differential components to performance measurement use based on the theoretical framework. Based on the results, a one-factor solution and a two-factor solution was conducted and used for further analyses.

Table 4.11: KMO Sampling Adequacy and Barlett's Test of Sphericity for the Performance Measurement Use

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.885
Bartlett's Test of Sphericity	Approx. Chi-Square	384.587
	df	28.000
	Sig.	.000

One Factor Solution for Performance Measurement Use

The purpose of conducting a one-factor solution for the dependent variable was to create for the factor performance measure use. Given the single rotation of the items in this factor, there were no significant differences in factor methods or type of rotation. As a result, principle components method using a varimax rotation was used. The dependent variables and its corresponding loading factors can be found on Table 4.12. The factor loadings fell within acceptable range from .601 to .812 and are acceptable. A factor score was created in SPSS to be used for future regression analyses.

Table 4.12: Unrotated Factor Loading for Performance Measurement Use

Item	Loadings
Communication Tool	.753
Reporting Requirement	.601
Program Improvement	.812
Higher Level of Understanding	.791
Program Accomplishments and Challenges	.762
Foster a Positive Learning Environment	.716
Legitimize Actions and Decisions	.765
Program-wide Budget Recommendations and Decisions	.715

Extraction Method: Principal Component Analysis.
a. 1 components extracted

Two Factor Solution for Performance Measurement Use

Based on review of these results, it was determined that a 2-factor, principal components extraction with a Varimax rotation was the most appropriate method to use. This determination was based on the clear delineation of the two constructs that were formed, indicating a distinction between instrumental and non-instrumental use. As shown in Table 4.13, the rotated component matrix indicated that four variables loaded on each factor. The range of loading factors for factor one was from .673 to .852. For factor two, the loading factors ranged from .594 to .825. The factor loading did not include loading below 0.3. The first factor, titled non-instrumental use, the loading factors included program-wide budget recommendations and decisions as well as legitimizing actions and decisions, both of which represent use of performance measurement information for mobilization. In addition fostering a positive learning environment as well as learning about program accomplishments and challenges also loaded to this factor and are representative of performance measurement use for the purpose for understanding. The second factor, representing instrumental use, included the following loading factors: reporting requirements and communication tool, both of which represent use of performance measurement information for accountability, developing new and/or alter new programs, processes, contacts for program improvement, which represents use of performance measurement information for program improvement, and higher level of understanding which represents use of performance measurement information for understanding. As noted by Weiss (1998, 23-4) regarding use for decision making, use for the purpose of understanding is representative of both instrumental and non-instrumental use.

Table 4.13: Rotated 2-Factor Loadings for Performance Measurement Use

	Component	
	1 (Non-instrumental Use)	2 (Instrumental Use)
Foster a Positive Learning Environment	.852	
Program-wide Budget Recommendations and Decisions	.747	
Legitimize Actions and Decisions	.680	.386
Learning about Program Accomplishments and Challenges	.673	.390
Reporting Requirements		.825
Communication Tool	.373	.715
Higher Level of Understanding	.434	.704
Develop New and/or Alter programs, processes, contacts for program improvement	.558	.594

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Factor Analysis for Independent Variables

Independent variables influencing the use of performance measurement information were also analyzed through factor analysis. Similar to the factor analysis for the dependent variables, the researcher conducted factor analysis several ways: (1) using principal components and principal axis factoring extraction; (2) rotating the analysis by both Varimax orthogonal rotation and direct oblimin rotation; and (3) assessing the exploratory factor analysis results of all independent variables as well as separately by rational/technocratic factors, political/cultural factors and organizational complexity factors. Based on the results, there was not much variation in technique. It was determined that a principal axis factor extraction with a Varimax rotation would be used to assess all factors associated with the independent variables for this study.

As displayed in Table 4.14, the KMO value and Barlett's Test of Sphericity meet the assessment requirements indicating the factors influencing the use of performance measurement information for factor analysis. In assessing the KMO value for this study's independent variables, the value was .770 which was above the recommended value of .6. In addition, the Barlett's Test of Sphericity was found to be statistically significant (.000) indicating suitability to continue the analysis.

Table 4.14: KMO Sampling Adequacy and Barlett's Test of Sphericity for Factors Influencing the Use of Performance Measurement Information

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.770
Bartlett's Test of Sphericity	Approx. Chi-Square	667.592
	df	120.000
	Sig.	.000

The correlation matrix indicated a wide range for coefficients including some below .3; however, Pallant (2007, 181), indicates that coefficients from small sample sizes are more unreliable and the factors normally do not generalize well with larger samples. The communalities were above the .3 threshold with the exception of one variable, enough funds to support and sustain performance measurement information, which was .211.

The total variance explained table revealed four underlying structures or factors within the independent variable and explained a total of 51.836% of the total variance. The rotated factor matrix, Table 4.15, indicates the following for factors: organizational complexity, organizational culture, rational/technocratic factors and stakeholder involvement. In the first factor the following variables were loaded: division of organizational tasks, review and approval from managers and staff, written processes and

procedures and required approval all of which represent the organizational complexity construct. In addition, the variable, enough funds to support and sustain performance measurement information loaded to factor 1; however, it is low at .379. The variables that loaded on factor 2 represented rational/technocratic construct and included having a team or division dedicated to reviewing performance measurement information, having staff with enough knowledge and expertise on performance measurement, providing sufficient access to performance measurement information and enough training on performance measurement information to do the job. The third factor represented the organizational culture construct and had the following loading variables: reward staff on ideas and strategies to use performance measurement information; reward managers on ideas and strategies to use performance measurement information; and open to innovative practices of performance measurement. The final factor, indicating stakeholder involvement, included the following variables: to what extent do stakeholders assist in developing performance measures, to what extent do stakeholders help support programmatic changes and to what extent do stakeholders hold the program office accountable. Once the factor analysis was complete, factor scores for the dependent and independent factors or constructs were created in SPSS for use in multiple regression analysis. Using the factor scores as continuous variables helps to minimize concerns regarding multicollinearity (Field 2009).

Table 4.15: Rotated Factor Loadings for Factors Influencing the Use of Performance Measurement Information

Items	1 (Organizational Complexity)	2 (Organiza tional Culture)	3 (Rational/ Technocratic)	4 (Stakeholder Involvement)
Organizational Tasks	.692			
Review and Approval of PM Information	.606			
Written Processes and Procedures	.596		.302	
Position Require Approval	.498			
Program-Level Decision Making Process	.493			
Enough Funds to Support and Sustain PM Information	.392			
Reward Staff on Ideas and Strategies		.865		
Reward Managers on Ideas and Strategies		.820		
Innovative Practices for Program Improvement	.445	.595		
Team or Division Dedicated to Reviewing PM Information			.717	
Enough Staff with Knowledge/Expertise in PM			.653	
Enough Training on PM Information			.614	
Sufficient Access to PM Information			.606	
External Stakeholders Help Support Programmatic Changes				.835
External Stakeholders Assist in Developing Performance Measures				.813
External Stakeholders Hold Office Accountable				.537

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Cronbach Alpha

It was important to examine the reliability of the survey tool once the factor analysis was complete. This test helps to examine the internal consistency of a particular measure (Santos 1999). Field (2005) explained this process well, stating that "...a person should get the same score on a questionnaire if they complete it at two different points in time..." (673). One way to test the reliability of the survey tool is by the test-retest reliability method which examines whether a measure can maintain the same response if completed at 2 different times (Field 2009). Another way to test the reliability is by using the Cronbach alpha test. Field (2009) states that the acceptable value for alpha is between .7 and .8, however, the author cautions researchers regarding common interpretations of the alpha value. One caution is that the alpha value is dependent on the number of items or questions in the survey. Another caution is that the test should be applied to factors or constructs of the survey instead of the entire survey as a whole in order to negate that the measures survey items that fall solely under one construct or factor. The final caution is for the researcher to review items for reverse phrasing which is key for reducing response bias (Field 2009, 675).

This study used Cronbach alpha, the most common method to check for reliability, in SPSS version 16. Before conducting the test, the survey tool was examined for any reversed phrased items to avoid any negative results. In addition, consideration was made regarding the number of items on each scale. The number of items within each construct ranged from three to five and would not negatively affect the reliability of the scale. Lastly, the Cronbach alpha was conducted on each construct or factor identified in the factor analyses: non-instrumental use and instrumental use, rational/technocratic

factors, stakeholder involvement, organizational culture, and organizational complexity.

As indicated in Table 4.16, each of the constructs or factors achieved values above .7

indicating that the tool was highly reliable:

Table 4.16: Cronbach Alpha Coefficient Values for the Dependent and Independent Variables

Factor	Cronbach alpha Value
Performance Measurement Use	.880
Instrumental Use	.819
Non-Instrumental Use	.810
Organizational Capacity	.770
Stakeholder Involvement	.788
Organizational Behavior	.849
Organizational Complexity	.765

Model Testing

This study is based on a theoretical framework in which there are two ways performance measurement information can be used--instrumental use and non-instrumental use. Instrumental use represents a clear and direct way performance measurement information is used such as for purposes of accountability and program improvement. Non-instrumental use, on the other hand, is not observable but incorporates shared values of learning and understanding as well as mobilization through performance measurement information to also improve programs. To test the hypotheses of the study, standard multiple regression analyses were conducted using three models using the following dependent or outcome variables: performance measurement use, non-instrumental use and instrumental use. These models were tested using the independent variables created from exploratory factor analysis as well as the control variables. The variables used in the models were organizational complexity, organizational culture,

rational/technocratic factors and stakeholder involvement, program office, position, length of time in HRSA and length of time in program office. Additional tests were conducted to assess moderating or interaction effects among the independent or predictor variables and the length of time in the program office for each of the three dependent variables. Pallant (2009) explained that “an interaction effect occurs when the effect of one independent variable on the dependent variable depends on the level of a second independent variable” (257). The purpose for conducting the interaction effects for this study was to see whether the combination of length of time in program office with each of the independent or predictor variables would have a greater or lesser effect on the model than individually (Witte and Witte 2007).

Multiple Regression Analyses

Standard least squares multiple regression analysis was used to test the hypotheses for this study which can be found in Table 2.1 at the end of Chapter 2. The literature review, theoretical framework and subsequent factor analyses helped to support the regression models that will be used to test the hypotheses. This section begins by assessing the relationship between the independent or predictor variables and the dependent variables—performance measurement use, instrumental use and non-instrumental use—representing the three base regression models for this study.

Examining the independent or predictor variables solely with performance measurement use would give us an overall sense about use of performance measurement information at the federal level, but would fail to give us insights into the nuances of this process. To fill this gap, this study also explored the factors that affect different types of use of performance measurement information, thus helping to expand practitioners’ as well as

theorists' knowledge and understanding of performance measurement use in federal programs. Instrumental and non-instrumental uses of performance measurement information were used for this purpose by means of forcing a two factor solution in factor analysis that yielded underlying differential constructs for performance measurement use. The three base regression models use the continuous factor scores that were developed during the factor analyses to represent the independent and dependent variables. In addition, dichotomous variables were used for program office, position and time in program office. Specifically, for program office, BPHC represents one and ORHP represents zero. For position, management represents one and staff represents zero. Furthermore, for time in program office, one represents managers and staff who have been in their program office less than two years, and zero represents managers and staff who have been in their program office for three or more years. As follow up to elaborating on differential uses of performance measurement information, the next section includes the three base regression models, consisting of performance measurement use, instrumental use and non-instrumental use as dependent variables, disaggregated by program office. The last set of models in this section is examined using program office as an interaction effect. Factors that are statistically significant at less than a 0.05 level are highlighted in bold in Tables 4.17-4.28.

Performance measurement use

Table 4.17 provides the results of the first regression model which examined the relationship of independent or predictor variables with the perceived use of performance measurement information as the dependent variable. The model summary included an adjusted R-squared of .423 which indicates that 42.3 percent of the variance in

performance measurement use can be explained by the predictor variables in this model. The model indicates statistical significance in explaining performance measurement use at $p=.000$. The coefficients model also indicates that there are three variables that are statistically significant in explaining performance measurement use: organizational complexity ($p = .006$), organizational culture ($p=.013$) and rational/technocratic ($p=.000$). The results of the performance measurement model support the following hypotheses and sub-hypotheses regarding factors influencing the use of performance measurement information- (H2) The greater the organizational complexity, the greater the use of performance measurement information; (H3) Rational/technocratic factors are positively related with the use of performance measurement information; (H4) Political/cultural factors are positively related with the use of performance measurement information (partially); and (H4-b) Organizations with high innovative and reward practices are more likely to use performance measurement information. The results also indicate that there is a strong positive relationship between the rational/technocratic variable and perceived performance measurement use with the strength of $b=.587$. The regression results do not reflect a significant relationship with stakeholder involvement, one of the sub-hypotheses tested in this study. This sub-hypothesis stated the following: (H4-a) Organizations that involve stakeholders in the performance measurement process are more likely to use performance measurement information. In spite of this, the results support public administration literature and the theoretical framework regarding the positive relationship between performance measurement use and organizational culture, organizational complexity and rational/technical factors. One of the reasons that support this relationship is that when program offices have the necessary resources and capacity to

support performance measurement information, the managers and staff are more likely to use this information in their management practices. Another reason supporting the statistical significance can be seen in the complexity and culture of the organization. The more program offices have written processes and procedures and a decision making structure that is conducive to using performance measurement information, the more likely the information will be used. Additionally, creating an environment that encourages and rewards new ideas related to performance measurement information also supports the use of this information.

Table 4.17: Multiple Regression Model Explaining Performance Measurement Use

R-sq.	Adj R-sq.	F Value	P>F	N	
.466	.423	10.953	.000	114	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.022	.199		-.112	.911
Organizational Complexity	.286	.101	.224	2.839	.006
Rational/Technocratic	.617	.115	.539	5.386	.000
Organizational Culture	.222	.088	.199	2.525	.013
Stakeholder Involvement	.083	.092	.074	.903	.369
BPHC	-.101	.235	-.044	-.431	.668
Management	.078	.175	.036	.446	.657
Time in Program Office	.235	.162	.116	1.448	.151

Instrumental use

Perceived instrumental use of performance measurement information represents the next dependent variable used for multiple regression analyses. Instrumental use was also identified through factor analysis and represents use of performance measurement information in a clear and observable manner such as through communicating or reporting the information internally and externally as well as through program improvement. The model for explaining perceived instrumental use, as shown in Table

4.18, is statistically significant ($p=.000$) and had an R-squared value of .273 as shown in Table 4.18. In addition, the model indicates that both organizational complexity and rational/technocratic factors are positively related and statistically significant ($p=.000$ and $p=.001$ respectively) in explaining perceived instrumental use of performance measurement information.

The results of this model support two hypotheses regarding the positive relationship organizational complexity and rational/technocratic factors have on instrumental use-- (H2) The greater the organizational complexity, the greater the use of performance measurement information; (H3) Rational/technocratic factors are positively related with the use of performance measurement information. Some researchers may contend that organizational complexity is an aspect of rational/technocratic factors. However, given the bureaucratic structure of federal agencies and the traditional approach in which more complexity brings about better management, it makes sense to examine these two factors separately. Further, in this study, rational/technocratic factors are indicative of a capacity for performance measurement.

Table 4.18: Multiple Regression Model Explaining Instrumental Use

R-sq.	Adj R-sq.	F Value	P>F	N	
.326	.273	6.085	.000	114	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.032	.226		.142	.887
Organizational Complexity	.436	.114	.338	3.823	.000
Rational/Technocratic	.456	.130	.394	3.513	.001
Organizational Culture	.073	.099	.065	.738	.463
Stakeholder Involvement	.019	.105	.016	.177	.860
BPHC	-.046	.267	-.020	-.173	.863
Management	-.143	.198	-.065	-.722	.472
Time in Program Office	.171	.184	.084	.930	.355

Non-instrumental use

The third base multiple regression model examined the relationship between the dependent variable, non-instrumental use, and the independent or predictor variables for this study. Non-instrumental use of performance measurement information is an unobservable way in which information is used for the purposes of understanding, learning and mobilization. Table 4.19 shows that the adjusted R-squared for this model was .184 which indicates that 18.4 percent of the variance in non-instrumental use can be explained by the independent or predictor variables. The overall model for non-instrumental use was found to be statistically significant at $p=.001$. The model shows that rational/technocratic factors and organizational culture have a statistically significant relationship with non-instrumental use ($p=.002$ and $p=.022$ respectively). Similar to the results for performance measurement use, the b value for rational/technocratic factors is .420, indicating that there may be a stronger positive relationship to perceived non-instrumental use than organizational culture, which had a b value of .231. The b value represents the unstandardized coefficient values used in developing regression equations. Beta, on the other hand, utilizes the same scale so that the variables are comparable (Pallant 2009). This model supports two hypotheses associated with non-instrumental use. Specifically, H1 states that the use of performance measurement information consists of both instrumental and non-instrumental use and each type of use is influenced by different factors and sub-hypothesis H4-b states that organizations with high innovative and reward practices are more likely to use performance measurement information. The model also partially supports H4 which states that political/cultural factors are positively related with the use of performance measurement information. Studies have shown that

organizational culture fosters learning and understanding which is indicative of non-instrumental use. In turn, opportunities are presented to use performance measurement information for these purposes. Lastly, rational/technocratic factors, which is associated with perceived instrumental use of performance measurement information also has a highly statistically significant relationship with perceived non-instrumental use. This relationship suggests the underlying importance of having appropriate and available resources, staffing and information in order to use performance measurement information for management and decision making practices.

Surprisingly, stakeholder involvement, which is also considered a non-instrumental use of performance information, was not found to be significant. One reason why stakeholder involvement was not significant may be because stakeholder involvement in the performance measurement process goes beyond what was identified in the survey questions which were associated with performance measures development, support of programmatic changes and program office accountability for performance. The follow up interviews, with managers and staff from both program offices, described later in this chapter, for example, suggest that stakeholders play a key role in providing technical assistance to grantee organizations. Another reason for the lack of significance regarding stakeholder involvement may be due to the dual role of stakeholder involvement in the performance measurement process. The interviews that followed the survey revealed that stakeholders play the role of collaborator through their assistance in the development of performance measures as well as technical assistance to grantee organizations. The interviews also indicated another role of stakeholders—the one to

which the program office must report performance measurement information, and the one that holds their program office accountable for performance.

Table 4.19: Multiple Regression Model Explaining Non-Instrumental Use

R-sq.	Adj R-sq.	F Value	P>F	N	
.245	.184	4.069	.001	114	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.058	.225		-.258	.797
Organizational Complexity	-.004	.114	-.003	-.037	.971
Rational/Technocratic Organizational Culture	.420	.130	.386	3.244	.002
Stakeholder Involvement	.231	.099	.218	2.326	.022
BPHC Management	.095	.104	.089	.909	.366
Time in Program Office	-.095	.266	-.043	-.355	.723
	.230	.197	.111	1.166	.247
	.163	.184	.084	.885	.378

Multiple Regression Analyses by Program Office

The next set of models explored the relationship between the perceptions of performance measurement use (i.e. performance measurement use, instrumental use and non-instrumental use) and the independent or predictor variables by each program office. Analyzing this relationship from the program office level allows one to examine similar and diverging patterns of perceived performance measurement use among the two program offices. Table 4.20 displays the multiple regression analysis for overall performance measurement use by BPHC. The adjusted R-squared value was .331 which indicates that 33.1 percent of perceived performance measurement use can be explained by the independent and control variables in the model. The model was statistically significant at the $p = .000$ level. This model, as shown in Table 4.20, indicates that

organizational complexity and rational/technocratic factors have a positive and statistically significant relationship in explaining perceived performance measurement use. More specifically, the model shows that for the strength of organizational complexity is $b=.372$ and has a statistical significance value of $p=.001$. Rational/technocratic factors display a strength of $b=.689$ and a statistical significance of $p=.000$. This model also supports hypotheses H2 which states that the greater the organizational complexity, the greater the use of performance measurement information and H3 which states that rational/technocratic factors are positively related with the use of performance measurement information. Unlike the overall performance measurement use, organizational culture was not associated with perceived performance measurement use which may be reflective of minimal innovative or reward practices within the program office. The descriptive analysis, however, provided some evidence of perceptions related to program office support of innovative practices for performance measurement. The descriptive analysis also indicated that rewarding practices for managers and staff regarding perceived use of performance measurement information occurred either on a limited basis or not at all. Lastly, time in program office appears to also have a positive relationship with perceived performance measurement use though it was not found to be statistically significant ($p=.086$).

Table 4.20: Multiple Regression Model Explaining Performance Measurement Use by BPHC

R-sq.	Adj R-sq.	F Value	P>F	N	
.388	.331	6.767	.000	89	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.116	.129		-.900	.371
Organizational Complexity	.372	.106	.352	3.510	.001
Rational/Technocratic	.689	.133	.522	5.170	.000
Organizational Culture	.102	.096	.106	1.062	.292
Stakeholder Involvement	.110	.091	.120	1.210	.231
Management	.018	.175	.011	.105	.916
Time in Program Office	.294	.168	.177	1.746	.086

Table 4.21 displays the multiple regression analysis explaining instrumental use in BPHC. The adjusted R-squared value was .230 which indicates that 23 percent of perceived instrumental use can be explained by the independent and control variables in the model. The model was statistically significant at $p=.001$. Similar to the performance measurement use model, organizational complexity and rational/technocratic factors have a positive and statistically significant relationship with perceived instrumental use. The strength of organizational complexity is $b= .514$ and the statistical significance is $p=.000$. Rational/technocratic factors display a strength of $b= .488$ and a statistical significance of $p=.002$. These results are similar to the multiple regression analysis with instrumental use and supports the following hypotheses-- H2 which states that the greater the organizational complexity, the greater the use of performance measurement information and H3 which states that rational/technocratic factors are positively related with the use of performance measurement information.

Table 4.21: Multiple Regression Model Explaining Instrumental Use by BPHC

R-sq.	Adj R-sq.	F Value	P>F	N	
.296	.230	4.487	.001	89	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.124	.150		.829	.410
Organizational Complexity	.514	.123	.449	4.173	.000
Rational/Technocratic	.488	.155	.341	3.149	.002
Organizational Culture	-.028	.112	-.027	-.253	.801
Stakeholder Involvement	.125	.106	.126	1.188	.239
Management	-.211	.204	-.112	-1.034	.305
Time in Program Office	-.056	.196	-.031	-.287	.775

Table 4.22 displays the multiple regression analysis explaining non-instrumental use in BPHC. The adjusted R-squared value was .124 which indicates that 12.4 percent of perceived non-instrumental use can be explained by the independent and control variables in the model. The model was statistically significant at the $p = .023$ level. The model indicates that rational/technocratic factors and time in program office have a positive and statistically significant relationship with predicting perceived non-instrumental use. The strength of rational/technocratic factors is $b = .488$ and has a statistical significance of $p = .005$. Time in program office has a strength of $b = .442$ and a statistical significance of $p = .039$, indicating that the less time BPHC managers and staff have in their program office, the more they are perceived to use performance measurement information non-instrumentally. Interestingly, factors associated with perceived non-instrumental use, organizational culture and stakeholder involvement, were not found to have a significant and positive relationship. This model supports hypothesis H3-- rational/technocratic factors are positively related with the use of performance measurement information.

Table 4.22: Multiple Regression Model Explaining Non-Instrumental Use by BPHC

R-sq.	Adj R-sq.	F Value	P>F	N	
.199	.124	2.653	.023	89	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.264	.160		-1.652	.103
Organizational Complexity	.041	.132	.036	.314	.754
Rational/Technocratic	.488	.166	.340	2.943	.005
Organizational Culture	.162	.120	.154	1.349	.182
Stakeholder Involvement	.036	.113	.036	.316	.753
Management	.211	.218	.112	.969	.336
Time in Program Office	.442	.209	.245	2.112	.039

The results of the multiple regression analyses for BPHC overall reveal that organizational complexity, as well as rational/technocratic factors, are predictors of perceived instrumental and non-instrumental use of performance measurement information. More specifically, increases in organizational capacity, levels of involvement, written processes and division of organizations' tasks also increases perceived performance measurement use as well as perceived instrumental use. In addition, increased capacity and resources within BPHC also increases perceived non-instrumental use. Furthermore, length of time in BPHC also seems to play an important role in perceived performance measurement use, particularly non-instrumental use. The results indicate that those with more time in the program office have a greater perception of non-instrumental use of performance measurement information. This result may be reflective of the performance measurement training and resources available to new managers and staff as well as having a culture that is receptive to supporting performance measures.

Factors explaining perceptions of use of performance measurement were also assessed for the ORHP. Table 4.23 displays the multiple regression analysis explaining

performance measurement use by ORHP. The model was close to being statistically significant at $p=.085$ and the adjusted R-squared for the model is .239 reflecting that 23.9 percent of perceived performance measurement use can be explained by the independent and control variables in the model. The model does not indicate statistical significance above $p=.05$; however, both rational/technocratic factors and organizational culture are close to the significance level ($p=.066$ and $p=.065$ respectively) and appear to have a positive relationship with perceived use of performance measurement information within this program office. This model also does not support the study's hypotheses.

Table 4.23: Multiple Regression Model Explaining Performance Measurement Use by ORHP

R-sq.	Adj R-sq.	F Value	P>F	N	
.429	.239	2.255	.085	25	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.020	.371		.053	.958
Organizational Complexity	.187	.325	.125	.577	.571
Rational/Technocratic	.608	.310	.448	1.959	.066
Organizational Culture	.423	.216	.365	1.964	.065
Stakeholder Involvement	.042	.325	.029	.129	.898
Management	.007	.572	.003	.013	.990
Time in Program Office	.102	.496	.041	.205	.840

Table 4.24 reflects the multiple regression model explaining instrumental use by ORHP. The model indicates that 28.9 percent of perceived instrumental use can be explained by the variables within the model. In addition, the model is very close to statistical significance at $p=.052$. The model shows that time in program office is a positive and significant ($p=.027$) predictor for perceived instrumental use of performance measurement information within ORHP. Organizational complexity did not reach statistical significance; however, it was relatively close at $p=.074$ with a strength of

b=.585. Interestingly, rational/technocratic factors, which are associated with instrumental use, did not achieve statistical significance. The descriptive analysis and interviews, however, indicate that these factors play an important role in perceived performance measurement use. The descriptive analysis, for instance, revealed that though ORHP managers and staff found that their program office has enough funds to support the use of performance measurement information and found this information to be accessible, they do not believe that their program office has enough staff with knowledge and expertise in performance measures, has a dedicated team or division to review performance measurement information, or has enough training on performance measures to do the job. This model does not support the study's hypotheses.

Table 4.24: Multiple Regression Model Explaining Instrumental Use by ORHP

R-sq.	Adj R-sq.	F Value	P>F	N	
.467	.289	2.624	.052	25	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.290	.352		-.824	.421
Organizational Complexity	.585	.308	.399	1.900	.074
Rational/Technocratic	.297	.295	.223	1.008	.327
Organizational Culture	.244	.205	.214	1.195	.248
Stakeholder Involvement	-.333	.308	-.238	-1.082	.294
Management	.057	.542	.020	.105	.917
Time in Program Office	1.136	.470	.462	2.416	.027

The multiple regression model explaining non-instrumental use by ORHP, displayed in Table 4.25, shows that rational/technocratic factors and time in program office appear to be statistically significant factors in predicting perceived non-instrumental use of performance measurement information. The strength of the rational/technocratic factors is $b = .549$ indicating a strong positive relationship and a

statistically significant value at $p=.040$. Time in program office has a strength of $b=-.869$ which is reflective of a strong negative relationship with non-instrumental use and a statistically significant value of $p=.042$. Organizational culture was very close to statistical significance at $p=.058$. The model supports the hypothesis H3 which states rational/technocratic factors are positively related with the use of performance measurement information.

Table 4.25: Multiple Regression Model Explaining Non-instrumental Use by ORHP

R-sq.	Adj R-sq.	F Value	P>F	N	
.488	.318	2.862	.039	25	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	.283	.297		.953	.353
Organizational Complexity	-.268	.260	-.212	-1.030	.317
Rational/Technocratic Organizational Culture	.549	.248	.479	2.210	.040
Stakeholder Involvement Management	.349	.173	.356	2.023	.058
Time in Program Office	.351	.260	.291	1.350	.194
	-.041	.458	-.016	-.089	.930
	-.869	.397	-.410	-2.190	.042

The results of the multiple regression analyses by ORHP indicated the importance of rational/technocratic factors and organizational culture on perceived use of performance measurement information. Interestingly, when examining differential uses, the length of time in the program office appeared to be a predictor of perceived instrumental and non-instrumental performance measurement use. For instrumental use, time in program office reflects a positive relationship with perceived instrumental use. The results indicate that ORHP managers and staff with less time in the program office have a positive relationship with instrumental use. The positive relationship of time in program office for perceived instrumental use shifts to a negative relationship when

assessing non-instrumental use. The result indicates that more time in the program office is a predictor of non-instrumental use of performance measurement information. The results show that new ORHP managers and staff perceive performance measurement use mainly for communication, reporting and direct program improvement purposes. However, the longer one stays in ORHP, the more managers and staff may expand perceived use of performance measurement information for the purposes of learning, understanding and mobilizing in order to inform decisions.

Multiple Regression Analyses with Interaction Effects

Interaction effects of the control variable, program office, were also explored with the independent variables of the study—organizational complexity, rational/technocratic factors, organizational culture and stakeholder involvement.

Performance measurement use with program office interaction effect

Table 4.26 provides the findings associated with explaining performance measurement use including the program office interaction effect. The model summary included an adjusted R-squared of .438. Additionally, the model for this test is significant at $p=.000$. This regression model indicates that rational/technocratic factors and organizational culture are positive and significant predictors to perceived performance measurement use. Rational/technocratic factors received a strength of $b=.620$ which indicates that there is a strong relationship with perceived performance measurement use as well as a very strong statistical value of $p=.000$. The strength of organizational culture is $b=.427$ with a statistically significant value of $p=.007$. Though not significant at the less than $p=.05$ level, the program office interaction with organizational culture indicated a negative relationship with a statistical value of $p=.088$. This indicates that

organizational culture appears not to be an important factor in predicting perceived performance measurement use for BPHC but important in predicting perceived use for ORHP. This model supports two of the study's hypotheses—H3: Rational/technocratic factors are positively related with the use of performance measurement information and H4-b: Organizations that encourage innovation and have in place rewards are more likely to use performance measurement information. The model also partially supports the following hypothesis— H4: Political/cultural factors are positively related with the use of performance measurement information.

Table 4.26: Multiple Regression Model Explaining Performance Measurement Use and Program Office Interaction Effect

R-sq.	Adj R-sq.	F Value	P>F	N	
.491	.438	9.315	.000	114	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.071	.113		-.625	.534
Organizational Complexity	.207	.228	.162	.905	.368
Rational/Technocratic	.620	.144	.541	4.296	.000
Organizational Culture	.427	.155	.386	2.762	.007
Stakeholder Involvement	.004	.197	.004	.020	.984
Time in Program Office	.242	.159	.120	1.518	.133
ProgramOfficeComplexity	.168	.256	.113	.657	.513
ProgramOfficeRational	.071	.222	.039	.320	.750
ProgramOfficeCulture	-.320	.186	-.239	-1.723	.088
ProgramOfficeStakeholder	.114	.220	.090	.519	.605

Instrumental use with interaction effects

As shown on Table 4.27, the next model examined the relationship of the independent variables, including interaction effects, and instrumental use. The adjusted R squared value is .288 which indicates that 28.8 percent of perceived instrumental use can

be explained by the independent and control variables in this model. The model is also statistically significant at $p=.000$. The model indicated that rational/technocratic factors have a positive and significant relationship with perceived non-instrumental use. The strength of rational/technocratic factors is $b= .472$ which reflects a positive relationship with instrumental use and a statistically significant value of $p=.005$. This model supports hypothesis H3 which states that rational/technocratic factors are positively related with the use of performance measurement information.

Table 4.27: Multiple Regression Model Explaining Instrumental Use and Program Office Interaction Effect

R-sq.	Adj R-sq.	F Value	P>F	N	
.354	.288	5.305	.000	114	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.061	.129		-.474	.637
Organizational Complexity	.427	.260	.332	1.645	.104
Rational/Technocratic	.472	.164	.408	2.873	.005
Organizational Culture	.203	.176	.182	1.152	.252
Stakeholder Involvement	-.258	.225	-.231	-1.148	.254
Time in Program Office	.163	.181	.080	.899	.371
ProgramOfficeComplexity	.087	.291	.058	.298	.767
ProgramOfficeRational	.019	.252	.010	.076	.940
ProgramOfficeCulture	-.207	.212	-.152	-.975	.332
ProgramOfficeStakeholder	.386	.250	.303	1.543	.126

Non-instrumental use with interaction effects

The last model explained interaction effects involving perceived non-instrumental use as the dependent or predictor variable. Table 4.28 indicates that this model was statistically significant and had an adjusted R-squared value of .172. There are two variables that are positive and statistically significant predictors toward perceived instrumental use-- rational/technocratic factors and organizational culture.

Rational/technocratic factors have a significance level of $p=.016$ and a strength of $b=.411$. Organizational culture has the same significance level of $p=.031$ and a strength of $b=.391$. This model mirrors the base multiple regression model for non-instrumental use and supports the following hypotheses—H2: Rational/technocratic factors are positively related with the use of performance measurement information and H4-b: Organizations that encourage innovation and have in place rewards are more likely to use performance measurement information. The model also partially supports the hypothesis H4 which states that political/cultural factors are positively related with the use of performance measurement information.

Table 4.28: Multiple Regression Model Explaining Non-instrumental Use and Program Office Interaction Effect

R-sq.	Adj R-sq.	F Value	P>F	N	
.250	.172	3.219	.002	114	
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.041	.131		-.310	.758
Organizational Complexity	.102	.263	-.84	-0.387	.700
Rational/Technocratic	.411	.167	.377	2.466	.016
Organizational Culture	.391	.178	.372	2.192	.031
Stakeholder Involvement	.233	.228	.222	1.024	.308
Time in Program Office	.179	.184	.093	.972	.334
ProgramOfficeComplexity	.148	.295	.104	.501	.618
ProgramOfficeRational	.078	.256	.045	.304	.762
ProgramOfficeCulture	-.246	.215	-.192	-1.144	.256
ProgramOfficeStakeholder	-.189	.254	-.157	-.745	.458

Overall, the regression models helped to address this study's hypotheses regarding the perceived use of performance measurement information in general as well as specifically examining use from both the instrumental and non-instrumental perspective. The findings clearly show that rational/technocratic factors are important and

statistically significant to predicting both types of performance measurement use. By exploring the underlying, differential structures of performance measurement use, two additional dependent variables emerged, instrumental and non-instrumental use for model testing. The findings demonstrate that different factors are positively related to different types of perceived performance measurement use. When all of the variables are constant, organizational culture is positively and statistically significant to predicting perceived non-instrumental use. Additionally, a positive relationship was identified between organizational complexity and perceived instrumental use. When the individual program offices were assessed, the results identified more specific patterns of perceived use. BPHC's results reveal that rational/technocratic factors and organizational complexity are predictors of perceived instrumental use as well as performance measurement use overall. The results for ORHP indicated that there were no variables that were statistically significant for performance measurement use and instrumental use. The descriptive analysis and follow up interviews, however, imply that there may be a relationship between rational/technocratic factors and perceived use. Both BPHC and ORHP results indicate length of time in the program office is a predictor of perceived non-instrumental use of performance measurement information. For BPHC, the results show a positive relationship which suggests that newer managers and staff use performance information for understanding and learning. The results for ORHP indicate a negative relationship with perceived non-instrumental use which suggests that managers and staff who have been in the program office for more than two years may use performance measurement information to understand and learn more about their programs. The program office interaction effect reveals that rational/technocratic factors are predictors of perceived

performance measurement use including both instrumental and non-instrumental use. In addition, organizational culture is a positive predictor of perceived non-instrumental use. The multiple regression analyses did not result in a statistical relationship with one's position in the program office. In spite of the findings, the descriptive survey analysis and follow up interviews suggest that performance measurement information is used by both managers and staff within the two program offices. Table 4.29 summarizes the results of whether the findings supported the hypotheses.

Table 4.29: Summary of Findings from the Model Testing

Hypothesis	Results
H1: Use of performance measurement information consists of both instrumental and non-instrumental use and each type of use is influenced by different factors.	
Performance Measurement Use	N/A
Instrumental Use	Supported
Non-instrumental Use	Supported
Performance measurement use- BPHC	N/A
Instrumental Use- BPHC	Supported
Non-instrumental Use- BPHC	Supported
Performance Measurement Use- ORHP	N/A
Instrumental Use- ORHP	Unsupported
Non-instrumental Use- ORHP	Supported
Performance Measurement Use- Program Office Interaction	N/A
Instrumental Use- Program Office Interaction	Supported
Non-instrumental Use- Program Office Interaction	Supported
H2: The greater the organizational complexity, the greater the use of performance measurement information	
Performance Measurement Use	Supported
Instrumental Use	Supported
Non-instrumental Use	Unsupported
Performance measurement use- BPHC	Supported
Instrumental Use- BPHC	Supported
Non-instrumental Use- BPHC	Unsupported
Performance Measurement Use- ORHP	Unsupported
Instrumental Use- ORHP	Unsupported
Non-instrumental Use- ORHP	Unsupported
Performance Measurement Use- Program Office Interaction	Unsupported
Instrumental Use- Program Office Interaction	Unsupported
Non-instrumental Use- Program Office Interaction	Unsupported
H3: Rational/technocratic factors are positively related with the use of performance measurement information.	
Performance Measurement Use	Supported
Instrumental Use	Supported
Non-instrumental Use	Supported
Performance measurement use- BPHC	Supported
Instrumental Use- BPHC	Supported
Non-instrumental Use- BPHC	Supported
Performance Measurement Use- ORHP	Unsupported
Instrumental Use- ORHP	Unsupported
Non-instrumental Use- ORHP	Supported
Instrumental Use- Program Office Interaction	Supported
Non-instrumental Use- Program Office Interaction	Supported

Table 4.29: Summary of Findings from the Model Testing

Hypothesis	Results
H4: Political/cultural factors are positively related with the use of performance measurement information.	
Performance Measurement Use	Partially Supported
Instrumental Use	Unsupported
Non-instrumental Use	Partially Supported
Performance measurement use- BPHC	Unsupported
Instrumental Use- BPHC	Unsupported
Non-instrumental Use- BPHC	Unsupported
Performance Measurement Use- ORHP	Unsupported
Instrumental Use- ORHP	Unsupported
Non-instrumental Use- ORHP	Unsupported
Performance Measurement Use- Program Office Interaction	Partially Supported
Instrumental Use- Program Office Interaction	Unsupported
Non-instrumental Use- Program Office Interaction	Partially Supported
H4-a: Organizations that involve stakeholders in the performance measurement process are more likely to use performance measurement information.	
Performance Measurement Use	Unsupported
Instrumental Use	Unsupported
Non-instrumental Use	Unsupported
Performance measurement use- BPHC	Unsupported
Instrumental Use- BPHC	Unsupported
Non-instrumental Use- BPHC	Unsupported
Performance Measurement Use- ORHP	Unsupported
Instrumental Use- ORHP	Unsupported
Non-instrumental Use- ORHP	Unsupported
Performance Measurement Use- Program Office Interaction	Unsupported
Instrumental Use- Program Office Interaction	Unsupported
Non-instrumental Use- Program Office Interaction	Unsupported
H4-b: Organizations with high innovative and reward practices are more likely to use performance measurement information.	
Performance Measurement Use	Supported
Instrumental Use	Unsupported
Non-instrumental Use	Supported
Performance measurement use- BPHC	Unsupported
Instrumental Use- BPHC	Unsupported
Non-instrumental Use- BPHC	Unsupported
Performance Measurement Use- ORHP	Unsupported
Non-instrumental Use- ORHP	Unsupported
Performance Measurement Use- Program Office Interaction	Supported
Instrumental Use- Program Office Interaction	Unsupported
Non-instrumental Use- Program Office Interaction	Supported

Building Upon the Quantitative Data with Interviews and Document Review

Follow up, semi-structured, interviews were conducted with ORHP and BPHC managers and staff after the survey process was complete. The purpose of the interview process was to gather more in-depth information regarding the use of performance measurement information at the federal level. A purposeful sampling for the interview was used and the criteria involved interviewing people from various levels of program office structure and their role (e.g. supervisory and non-supervisory) in each program office.

There were a total of 20 people interviewed. As shown in Table 4.30, nine people, made up of five managers and four staff, were from BPHC and 11 people, involving two managers and nine staff, were from ORHP. All of the interviews took place in September 2012 and January 2013. The information was recorded, transcribed and coded thematically.

Table 4.30: Demographic Information for Interviews by Program Office and Position

	BPHC	ORHP
Management/Supervisory	5	2
Staff/Non-supervisory	4	9
Total	9	11

As indicated in Table 4.31, themes were uncovered among the interviews that were specific to one of the program offices. For BPHC, use of performance measurement information occurred primarily for program improvement and for communication. BPHC responses also suggested that most interactions with stakeholders, as it relates to performance measurement, were to coordinate and provide assistance to grantee organizations on improving their results. Furthermore, having standard operating

procedures in place appeared to help incorporate performance measurement into daily activities of BPHC managers and staff.

In ORHP, performance measurement information was also used for program improvement and communicating with others. In addition, it was used to help justify budget requests. Interview participants also expressed a need to have a greater understanding of the role as well as the value of performance measurement information. Participants also expressed the challenges of developing measures for programs with short project periods (i.e. one to three years) and being able to demonstrate the impact that a program has on rural communities. The last theme that emerged from ORHP is the relationship between the program office and stakeholders and suggests that, for the purpose of the performance measurement process, stakeholders serve as a resource for performance measure development.

Use of Performance Measurement Information

Use of performance measurement information, as explained previously, is understood here as using performance information for the purposes of accountability, program improvement, understanding and mobilization. The interview responses revealed that the use of performance measurement information focused primarily on program improvement for both ORHP and BPHC. Interestingly, when interviewees discussed using performance measurement information for program improvement, the discussion focused on the conceptual or non-instrumental use of performance measurement information and not the direct or instrumental use of information for making decisions.

Table 4.31: Interview Themes

General Themes From the Interviews	
<ul style="list-style-type: none"> • Performance measurement use is primarily geared toward program improvement • Leadership plays a major role in encouraging the use of performance measurement data • Not having adequate resources such as time, staff, accessible and timely data and training limits or hinders the ability to use performance measurement data • Structure of the program office effects the use of performance measurement information in various ways including staff workload, performance and assigned tasks 	
BPHC	ORHP
<ul style="list-style-type: none"> • Performance measurement information is used primarily to improve programs and for communicating with others • Stakeholders play a key role in providing technical assistance and best practices to grantee organizations • Having policies/procedures that ties performance measures to their processes encourages the use of performance measurement 	<ul style="list-style-type: none"> • Performance measurement information is used to improve programs, mobilize actions/decisions and to report or communicate with others • There is a need for a greater understanding of performance measurement data and its value to the program • Challenges with developing/revising performance measures for short term service delivery programs • Stakeholders assist managers and staff in the performance measure development process

ORHP managers and staff stated using performance measurement information toward improving performance, understanding and learning program challenges and accomplishments, reporting and communicating with internal and external parties and mobilizing the program such as showing and defending value to the program or justifying the budget. For example, one ORHP staff member described the use of performance measurement information as a way "... to inform the Associate Administrator as well as within our own division/program on how we're doing, if we need to make changes to the

program, to clarify certain things, if there are issues that may arise.” Another ORHP Staff member stated the following regarding the need to use performance measurement information to justify the value of the program: “Given the (current) economic situation, there is a need to be able to defend the value (of our programs), what it brings to rural, and how it improves rural health overall for our grantees; performance measurement information is really the only way to do that.”

Similar to ORHP, managers and staff in BPHC noted the use of performance measurement information for program improvement; however, communicating performance measurement information was also identified. A supervisor in BPHC stated that performance measurement information is used “. . . more and more to drive the work we do.” A BPHC staff member described using performance measurement information in the following way: “We use performance measurement information to monitor grantee performance, to target training and technical assistance for staff and grantees, and to monitor trends. . . .” The use of performance measurement information in the interviews aligns with the survey findings regarding use. The survey findings indicated that 97 respondents (85.1 percent) used performance measurement information for the purpose of program improvement at a great extent (38, or 33.3 percent) or considerable extent (59, or 51.8 percent). In addition, the document review revealed that program improvement is one of the primary uses of performance measurement information identified in the literature. Table 4.32 depicts the key patterns identified in the interviews regarding the use of performance measurement information.

Table 4.32: Interview Response Patterns Related to the Use of Performance Measurement Information

Use of Performance Measurement information	BPHC Number and Percent Responding (N=9)	ORHP Number and Percent Responding (N=11)	Total Number and Percent Responding (N=20)
Accountability	1 (11%)	3 (27%)	4 (20%)
Program improvement	4 (44%)	6 (54.5%)	10 (50%)
Understanding	--	3 (27.2%)	3 (15%)
Mobilization	--	1 (9%)	1 (5%)

When the participants were asked how performance measurement information could be used more effectively, the responses focused on creating better linkages between performance measures and the goal of the program, providing additional resources internally and externally for improved performance, and having more accessible and timely data . In addition, other effective uses of performance measurement information noted by participants were analyzing the “why” behind the data and strategy planning. One ORHP supervisor noted the following about using performance measurement information more effectively: “It’s a relatively new system and ORHP is still identifying ways to help grantees actually utilize the performance data information versus just reporting it because it is a requirement.” Generally, ORHP interview participants believed that having performance measures that better reflect the goal(s) of a program would help make the use of the measures more effective. A ORHP staff member explained some of the challenges in developing performance measures for a particular program and stated the following: “...until I get the right measures will I really be able to effectively use the information to feedback into as process measures for myself and the program as to how to improve.” Similarly, another ORHP program staff stated that to use performance measurement information more effectively, “... it goes back to the issue of

collecting measures that actually relate to what the goals of the program are and also just the types of programs that we fund and the amount of funding we have available and that grantees get to warrant the types of questions we're asking in the data.”

BPHC participants, on the other hand, noted that obtaining accurate performance measurement information from grantees and, from an internal perspective, having performance measurement information that is accessible and timely, would assist in the effective use of the information. One BPHC staff member stated: “We have begun using it for certain decisions but acknowledge that the information may not be very accurate.” Another BPHC staff member noted the following about using performance measurement information more effectively in their program office: “We could still do more with state trend data and targeting assistance or sharing best practices. Sharing where grantees are excelling on performance measures (and why) could greatly support improvement.”

These responses were in line with the survey findings regarding the program office’s capacity to support the use of performance measurement information. Overall, the 62 survey respondents (54.4 percent) agreed that their program office provides enough training on performance measurement information to do their job and 71 survey respondents (62.3 percent) agreed that their program office has sufficient access to performance measurement information for them to do their job. The program offices, however, contrasted on having enough training on performance measurement information to do their job, wherein 56 BPHC respondents (62.9 percent) agreed with the statement and 14 ORHP respondents either disagreed (7, or 28 percent) or strongly disagreed (7, or 28 percent). When examined from the position level, BPHC managers and staff responded similarly to training and access statements; however, ORHP managers and

staff were divided between agreeing and strongly disagreeing. The interviews were able to support and elaborate on the survey findings related to organizational capacity and the use of performance measurement information.

The question regarding ways to use performance measurement information more effectively was followed by asking the interviewees what elements in their program office encourage the use of performance measurement information. ORHP managers and staff note several elements encouraging the use of performance measurement information in their office. One element was regarding the development of “better performance measures that more accurately reflect the goals of the program”. Specifically, one ORHP supervisor noted challenges with developing performance measures quickly or developing measures that are useful for informing policy. Another element identified by ORHP for encouraging performance measurement use was senior leadership. Similarly, an ORHP staff member found that responding to urgent requests for senior leadership was a main factor for using performance measurement information. ORHP interviewees noted that having resources in place as well as the structure to support and facilitate performance measurement information also encouraged the use of performance measurement information. The influence of program integrity initiatives across the agency and the department were noted as elements that encouraged the use of performance measurement information. One ORHP staff member described the encouragement of performance measurement use as follows: “I think that as an office, it is only in the last few years that we have begun to push for the collection of performance measures for our various grant programs. One thing that has encouraged the use of performance measures is a change in the culture of leadership on the importance of these

measures. It is no longer seen as a necessary evil of doing business, but is now becoming more status quo.”

Another staff member reiterated this by stating that “both resources and structure encourage the use of performance measurement. The fact is that in previous years, the office did not collect data from the grantees making it extremely difficult to roll-up information on the programs and to validate program funding.” This response was not fully reflective of the survey results which indicated that, although ORHP respondents concurred that their program office had enough funds and accessible information to support the use of performance measurement information, having enough staff with the skills and expertise in performance measures, team or division dedicated to reviewing performance measurement information and adequate training on performance measurement information was perceived to occur on a limited basis.

BPHC managers and staff also identified several elements linked to encouraging the use of performance measurement information. One key element encouraging the use of performance measurement information was having standard operating procedures in place. One BPHC supervisor explained the integration of performance measures into their processes and procedures: “Reference to review of performance measures is included as a required step for Project Officers during both annual compliance/application, prior approval requests (such as Change In Scope reviews), as well as quarterly monitoring calls with grantees. This is integrated in our SOPs and review guidances.” Similarly, the descriptive analysis findings indicated that written processes and procedures that guide the management and decision making processes in their program occurred to a considerable extent. However, differences in use were noted at the program office level

and by position. Both BPHC managers and staff found that using written processes and procedures for management and decision making occurred to a considerable extent. BPHC interviewees also noted that having an active continuous quality improvement workgroup also helped to encourage performance measurement use in their program office. Similar results were found in the descriptive analysis under the rational/technocratic factors in which BPHC respondents indicated that there was a team or division that reviewed performance measurement information as well as the organizational complexity factor in which involvement from other teams, branches and divisions related to decisions regarding performance measures occurred to a considerable extent. In addition, other elements encouraging the use of performance measurement information included having available performance measurement data through the Agency's Electronic Handbook system and aligning internal processes with performance measurement data encourage the use of performance measurement information in their program office. BPHC's response regarding available data aligned with the survey findings regarding perceived accessibility of information to support the use of performance measurement information. Table 4.33 depicts the key patterns identified in the interviews regarding elements that encourage the use of performance measurement information.

The fourth interview question inquired about factors that may limit or hinder the use of performance measurement information in the program office. This question elicited differing responses among ORHP and BPHC. ORHP found that having available funds to develop a performance measurement system as well as the amount of grant funds provided to grantees limits or hinders the use of performance measurement information.

Table 4.33: Interview Response Patterns Related to Elements that Encourage the Use of Performance Measurement Information

Elements	BPHC Number and Percent Responding (N=9)	ORHP Number and Percent Responding (N=11)	Total Number and Percent Responding (N=20)
Rational/Technocratic Factors	2 (22.2%)	3 (27.3%)	5 (25%)
Organizational Complexity	4 (44.4%)	1 (9%)	5 (25%)
Improving Performance Measures	--	8 (72.7%)	8 (40%)
Leadership	2 (22.2%)	5 (45.5%)	7 (35%)
Program Integrity	--	4 (36.4%)	2 (20%)

Another factor that hindered or limited performance measurement use was the lack of understanding regarding the value of performance measures by both the program staff and grantee organizations. Similarly, ORHP noted the limited expertise regarding performance measures within the office as well as varying interpretations of performance measures by program staff. One ORHP staff member stated the following as a limitation of using performance measurement information: "...really understanding the value of it (performance measures). That grantees just don't see it as something else we have to do and POs just seeing it as something we have to review." Another ORHP staff member shared the challenges that program staff faces with performance measures: "Due to the volume of grantees we have in the office, it is up to the project officers to explain to grantees what the measures are trying to ask and it is up to the project officer to interpret that measure (which may be different from another PO's interpretation)." Buy-in and support from leadership was also noted by ORHP as a hindering or limiting factor related to the use of performance measurement information as well as managing competing priorities. One ORHP staff member indicated this challenge, stating "...we are all so busy with competing priorities that we lose sight of tools that can help us do our job better."

Other limitations identified by ORHP include having time to understand and use performance measurement information, delays in implementation of the measures, push back or non-responsiveness from grantees, following the Office of Management and Budget's requirements related to performance measurement packages and the availability of meaningful and relevant performance measures.

Regarding the same question, BPHC noted several factors limiting or hindering their use of performance measurement information. One limiting factor is the steep learning curve new staff members face regarding the program office's performance measures. One BPHC staff member suggested that to address this potential limitation, "having online tutorials instead of waiting for a training session" would be beneficial. One BPHC supervisor stated that not having the time to "really dig in" to the data in order to gain a full understanding and master the language related to talking about the data. Similarly, BPHC indicated that the ability for program staff to effectively use performance measurement information is also a limiting factor. For example, one BPHC supervisor noted that having the "knowledge and understanding of the measures are both contributing and restricting factors for improvement." Other factors limiting or hindering performance measurement use include technical issues with the HRSA Electronic Handbook system, and delays in grantee reporting of data as well as inaccurate reporting of data by grantees.

The interview responses vary somewhat from the survey results regarding factors that hinder or limit performance measurement use. The responses also introduce other factors not addressed in the survey. ORHP interviewees noted a need for greater understanding and value of performance measurement information as it related to their

programs and their responsibilities. Similarly, the survey results for ORHP regarding the non-instrumental use of performance measurement information for the purposes of understanding their program indicated that this occurred on a limited basis. Both BPHC and ORHP indicated concerns about program staff being able to use performance measurement information effectively and grantee reporting challenges such as delays and non-responsiveness. BPHC also stated limiting factors regarding organizational capacity, i.e. technical issues and training for new staff. This differs from the survey results which indicated that BPHC concurred to a great or considerable extent that their program office had enough training and accessible information to support the use of performance measurement information. Table 4.34 depicts the key patterns identified related to limiting or hindering factors that influence the use of performance measurement information.

Table 4.34: Interview Response Patterns Related to Factors that Limit or Hinder the Use of Performance Measurement Information

Use of Performance Measurement information	BPHC Number and Percent Responding (N=9)	ORHP Number and Percent Responding (N=11)	Total Number and Percent Responding (N=20)
Understanding Performance Measures	--	3 (27.3%)	3 (15%)
Rational/Technocratic Factors	5 (55.5%)	6 (54.5%)	10 (50%)
Delays/Non-Responsiveness	2 (22.2%)	1 (9%)	3 (15%)
Technical Issues	1 (11%)	--	1 (5%)
Leadership	--	1 (9%)	1 (5%)

Stakeholder Involvement

Stakeholder involvement and its influence on the use of performance measurement information was also assessed during the interview process. The interview findings suggest two ways in which the program offices involve stakeholders in the

performance measurement process. One way is by seeking their assistance in developing performance measurements. The other way is to report performance measurement information to stakeholders. For example, ORHP, in general, found that the involvement of stakeholders helped with the development or revision of relevant performance measures. An ORHP staff member noted working with external partners to identify appropriate metrics for a particular program and spoke of the challenges in establishing those metrics due to the short length of time that funding has been available to the organization (e.g. three years) and the program focus on building health care infrastructure and not service delivery. Other ORHP interviewees stated the need for the program office to provide performance measurement information to stakeholders is another aspect of the relationship between the two. One ORHP staff member described the role of the program office as being "... reactive to stakeholders' need for information." BPHC emphasized the importance of having easily accessible information to share with stakeholders such as official requests from Congress. Additionally, utilizing stakeholders, such as the Primary Care Associations, are essential in providing targeted technical assistance to grantees based on performance measurement information. One of the Project Officers expressed the important role that stakeholders play and stated the following in terms of the utility of the performance data: "It's essential we provide... useful information and not just random reports that no one can interpret." A supervisor elaborates a bit further stating that a challenge the program office has is "helping them (grantees) understand how it (performance measures) can help them."

Interestingly survey responses indicated that both the stakeholder involvement in performance measurement development and support of programmatic changes occurred

to a considerable extent. When asked whether external stakeholders held their program office accountable for program improvements, there was minimal to no variation among the following responses—great extent (27 respondents or 23.7 percent), considerable extent (31 respondents or 27.2 percent) and limited extent (29 respondents or 25.4 percent). Responses by program offices varied, however, on stakeholder support of programmatic changes and holding the program office accountable for programmatic improvements. One example is regarding the extent external stakeholders assist in developing performance measures. Three ORHP managers (60 percent) stated that this involvement also occurred to a considerable extent but seven ORHP program staff (35 percent) believed that occurred to a limited extent. Both BPHC managers (10, or 35.7 percent) and staff (23, or 38.3 percent) indicated that this occurred to a considerable extent. Similarly, when asked about stakeholder’s role in supporting programmatic changes, three ORHP managers (60 percent) stated that stakeholder’s support of programmatic changes happened to a considerable extent; however, eight ORHP program staff (40 percent) stated it occurred to a limited extent. BPHC managers (14, or 50 percent) and staff (23, or 38.3 percent) both indicated that this occurred at a considerable extent. Lastly when asked about whether stakeholders hold their office accountable for programmatic improvements, ORHP managers stated that stakeholders hold their office accountable to both great extent (two, or 40 percent) and limited extent (two, or 40 percent) and eight ORHP program staff (40 percent) stated that this happened to a limited extent. Ten BPHC managers (35.7 percent), on the other hand, indicated that this occurred at a considerable extent. However, BPHC staff stated that it occurred at both a considerable extent (15, or 25 percent) and a limited extent (14, or 23.3 percent). Table

4.35 depicts the key patterns identified in the interviews regarding the influence of stakeholder involvement in the performance measurement process.

Table 4.35: Interview Response Patterns Regarding the Influence of Stakeholder Involvement in the Performance Measurement Process

Stakeholder Involvement	BPHC Number and Percent Responding (N=9)	ORHP Number and Percent Responding (N=11)	Total Number and Percent Responding (N=20)
Rational/Technocratic Factors	3 (33.3%)	--	3 (15%)
Performance Measure Development	--	4 (36.4%)	4 (20%)
Technical Assistance/Best Practices	3 (33.3%)	--	3 (15%)
Providing Stakeholders with Performance Measurement Information	2 (22.2%)	4 (36.4%)	6 (30%)

The interviews helped to clarify the relationship the two program offices have as it relates to performance measurement information and suggest that either through development of performance measures or providing technical assistance to grant funded organizations, the relationship helps to foster the use of performance measurement information enhancing program performance.

Role of Performance Measurement Information

The role performance measurement information plays in the participant's job activities may also influence whether managers and staff use the information and how they use it. The responses from both BPHC and ORHP were primarily related to program or grantee monitoring. In addition, performance measurement information has played other roles in job activities. A supervisor in ORHP stated that reporting performance measurement information for budget justifications were a part of the job. In addition, the supervisor believed it was his or her responsibility to assist and guide staff on having a

better understanding of their role in reviewing and approving performance measures. An ORHP staff member reported that they reviewed the performance data when it came in to see whether it made sense but were not sure what to do with the information afterwards to demonstrate the success of the program. The same ORHP staff member stated: “I don’t get the value of the selected measures of what we’re looking at and how we would use it to demonstrate success for that program. I don’t see how the measures get to that.”

Another ORHP staff member indicated that, in their role, they are “[e]xpected to collect PIMS [Performance Improvement Measurement System] information, review it to make sure that it seems plausible but doesn’t preclude us from doing more with it. We’d have to develop our own initiatives to do more with the information.” Another perspective found in ORHP is the key role of communication with grantees. An ORHP staff member found that: “Because they are the ones in the field, the ones out there doing the day to day work I think it’s important to communicate with them and get feedback from them in order to make sure that it’s the right data. We can do as much research as we need here and brainstorm ideas but until you actually speak to people and get a clear understanding about what’s going on at the ground levels so I think it’s important to include them.”

Using performance measurement information for program improvement was also seen as a key role by an ORHP staff member who stated that performance measurement information “...is how we determine the progress made by our grantees in the activities they set out to complete, and it is/can be aggregated up to a program level. The information also often helps us to make important and necessary changes and improvements to our programs.” Lastly, vetting and cleaning performance measurement information was also found to be part of the ORHP job activities. One ORHP staff

member described it as follows: “[m]y colleagues and I evaluate and sift thru the outcome data that’s provided by our assigned grantees on a semi-annual basis to ensure the data is “clean”.”

BPHC identified additional roles that performance measurement information plays in staff members’ job activities. A BPHC supervisor described his or her role as well as the BPHC staff member’s role as follows: “It plays an important role as far as assessing grantees ability to meet health outcomes and achieve measurable goals. It also serves as an indicator for gaps in services and where quality improvement may be needed.” Another role that performance measurement information appears to play in BPHC job activities includes identifying technical assistance needs and aligning with Healthy People 2020. One BPHC staff member described using performance measurement information in the following way: “On quarterly calls, [project officers] should take advantage of reviewing how grantees are performing relative to clinical and fiscal performance measures. For grantees that are falling short when crossed compared grantee measures against the State, National and Healthy People 2020—this is when technical assistance and other performance improvement opportunities can be thoroughly discussed and action steps are initiated.” A BPHC supervisor indicates the performance measurement information impacts every aspect of job activities, stating, “[I]t is a constant overlay to everything I do as a Division Director. It impacts our goals, priorities, performance evaluations of staff, measurement of our success and progress, etc.”

Additional perceived roles of performance measurement information by BPHC include using the information to respond to data requests, examine trends, and to include this information into presentations to states and regional associations.

The interviewer followed the previous question with assessing the usefulness of performance measurement information towards making decisions or recommendations in the program office. The perspectives of usefulness between ORHP and BPHC varied. ORHP responses indicate that the program office is still in the process of finding and adjusting measures that are useful in making programmatic and/or grantee related recommendations and decisions. For example, one ORHP staff member stated that “[s]o far there has been limited use of performance information for making decisions or recommendations – this is mainly because there hasn’t been enough information collected yet.” Others in ORHP found performance measurement information to be useful towards programmatic decisions and recommendations. One ORHP supervisor stated that this information “... is useful in identifying technical assistance areas for grantees along with ways to strengthen, improve and expand a program.” Similarly, a BPHC Project Officer asserted that performance measurement information is “critical, essential” to making recommendations and decisions. A BPHC supervisor added that performance measurement information is useful in determining recommendations for funding levels, lengths of project periods, technical assistance needs and best practices. Another BPHC supervisor, however, clarified the link between performance measurement information and funding, stating that “[w]e do not hinge funding decisions on clinical or financial performance measures but we often see poor performance in these areas as an indicator of non-compliance or other issues for the grantee organization.” Some of the response differences between the two program offices may also be linked to the variation of how long a performance measurement system has been in place as well as the types of programs that are administered. BPHC has a well-established performance measurement

system which has been in place for a long time and supports one comprehensive grant program. ORHP, on the other hand, implemented its system in 2009 and, as indicated throughout the interviews, is still in the process of establishing performance measures that more accurately reflect its programs. In addition, ORHP has multiple grant programs with varying legislative authority that impact the performance measures that are currently being used or revised. Table 4.36 depicts the key patterns identified in the interviews regarding limiting or hindering factors that influence the use of performance measurement information.

Table 4.36: Interview Response Patterns Related to the Role of Performance Measurement Information

Role of Performance Measurement information	BPHC Number and Percent Responding (N=9)	ORHP Number and Percent Responding (N=11)	Total Number and Percent Responding (N=20)
Accountability	3 (33.3%)	5 (45.5%)	8 (40%)
Program and Grantee Monitoring	3 (33.3%)	3 (27.3%)	7 (35%)
Understanding	--	2 (18.2%)	2 (10%)

When asked whether there were suggestions that would make performance measurement information more useful and create greater value within the program office, ORHP comments included the need to communicate the importance of performance measures, placing the measures in context to the grant program, making the measures relevant to the goals of the program and incorporating training. One ORHP staff member stated “I think there’s great value to it; I just don’t think we’ve figured out as an Office all the ways we can use it, how it can be used, what story we can tell.” An ORHP supervisor reflected on using performance measurement information for more than just a reporting requirement tool by stating that when a program office considers the

performance measures, these measures should “makes sense in the context of the program and that it actually means something whether it is the grantees being able to use it, the project officers or the [program] office, so that it is more than just a number that we report once a year for the budget. That it is actually useful.” Additional suggestions from ORHP that would make performance measurement information more useful includes increased training both internally as well as for grantee organizations, having someone with expertise in performance measures in the program office and sharing this information across the different divisions and teams within the program office. On ORHP staff member expressed information sharing by responding, “[A]s programs work to develop performance measures, it would be useful to let other programs areas know about what they are doing and maybe provide some guidance or TA to those developing new measures. I know very little about how the Hospital State Division, Community Based Division and Office for the Advancement of Telehealth use performance measures for their programs.” The BPHC comments focused on making performance measurement information easily accessible to the public and timely for internal review. One BPHC staff member responded about the timeliness of this information, stating “[w]e only get UDS [Uniform Data System] once a year and we get it six months into the next year when we can actually start using it. If we could that information in real time (i.e. semi-annual reporting), it would be extremely helpful.” Similarly, an ORHP supervisor indicated that by the time the performance data is released to the program office, they are already working on the next fiscal year which is a biggest issue. In addition, more training and support from the technical and data analysis aspect of the program office to help with the “retrieval, interpretation, analysis and recommendations” were also

suggested to make performance measurement information more useful and valuable within their program office.

Organizational structure of the program office served as the final interview question and appeared to be influential in the use of performance measurement information. A majority of the interview participants stated that the structure of their office impacted the use of performance measurement information; however, the impact varied. From one perspective, the program office structure lends itself to support changes. In addition, components of organizational structure such as staff workload, performance and assigned tasks play a role in the use of performance measurement information. In contrast, the lack of shared performance measurement data among the divisions within the program office as well as workload redistribution did not fully allow for the use of performance measurement information. In ORHP, one supervisor did not think the program structure played much of a role in using performance measurement information; however, an ORHP staff member thought that, though they were not at a level to make programmatic decisions, the structure of the program office allowed for the opportunity to support some programmatic changes. For example, the ORHP staff member elaborated stating: "I think the structure of the office lends itself to supporting some changes. At my level not necessarily being the decision maker about those changes but I do think there are opportunities to present that information and present concerns and you can use the performance measurement information to support the concerns to influence change in the office." Similarly, several ORHP staff members indicated the effect workload and assigned tasks has on performance measurement use. One ORHP staff member shared this challenge, stating: "...most program coordinators and project officers have so many

other tasks to complete and performance measurement information is forgotten or overlooked”. Similarly, a BPHC supervisor believed that the program office structure “absolutely” influenced the use of performance measurement information. BPHC managers and staff noted that their organizational structure includes the Office of Data and Quality (OQD) as well as clinical and fiscal consultants. OQD and the consultants serve as a resource to staff. Additionally, OQD provides the other BPHC offices and divisions’ performance data reports. One BPHC supervisor, however, noted staffing challenges within OQD stating: “Because they are understaffed, the goals for the office haven’t materialized. Every time we want information, it cannot be provided because they have no staff. If you want to use more performance measures, you need to have staff that can interpret and pull reports that are meaningful to the rest of the organization and we don’t have that. The skill levels in my division vary widely that if we get the raw data in UDS [Uniform Data System] it would mean nothing to most people.”

In spite of these challenges, another BPHC supervisor describes the growth of the program office and its structure by responding, “[a]s we have grown and expanded our staff and our structure, it has allowed for reduced project officer portfolios and a great ability for them to dig deeper on these measures.” Additionally, the incorporation of a senior clinical advisor in each Division has helps support program officer analysis in this area. In contrast, ORHP’s structure currently does not have a team, branch or division in place that focuses on performance measurement. One ORHP staff member stated that sharing performance measurement data across the ORHP divisions would assist in the use of this information. Table 4.37 displays the key patterns identified in the interviews

regarding organizational structure as an influential factor in the use of performance measurement information.

Table 4.37: Interview Response Patterns Related to the Influence of Organizational Structure in the Use of Performance Measurement Information

Use of Performance Measurement information	BPHC Number and Percent Responding (N=9)	ORHP Number and Percent Responding (N=11)	Total Number and Percent Responding (N=20)
Staff Workload	1 (11%)	1 (9%)	2 (10%)
Division of Organizational Tasks	2 (22%)	2 (18%)	4 (20%)
Shared Information	1 (11%)	2 (18%)	3 (15%)
Rational/Technocratic Factors	2 (22%)	--	2 (10%)

Overall, the interviews provided a greater understanding of the use of performance measurement information within the two program offices that was not obtained in the survey results. As shown previously in Table 4.31, the themes that emerged during the interview process included the use of performance measurement information as a tool for program improvement. Leadership's support of performance measurement also surfaced as having a major role in encouraging the use of this information. Also having an important role in organizational capacity emerged as a common theme from the interviews. The final general theme identified through the interview process was that the program office structure did appear to have some effect on using performance measurement information.

Document Review

This study utilized data triangulation to support the results from the survey data and interview data through document review. Triangulation can help strengthened a case study design by helping to alleviate problems that are sometimes associated with construct validity (Yin 2009). Document review served as the third source of evidence for

this study and it was conducted on publicly available documents and reports from BPHC and ORHP. Similar to the interview process, the document review involved examining, coding and identifying emerging themes and descriptive information. The results were then used to corroborate the evidence gathered through the self-administered survey and the follow-up interviews as well as for the interpretation and analysis of the data on performance measurement use within BPHC and ORHP. Table 4.38 provides a synopsis of materials, types of uses and themes of use identified in the document review.

There were seven BPHC documents reviewed for this study. These documents included the following: (1) 2013 Congressional Budget Justification; (2) 2013 Annual Performance Plan; (3) 2013 Service Area Competition Funding Opportunity Announcement; (4) Program Assistance Letter- Uniform Data System (UDS) Changes for 2012; (5) 2011 Report to Congress; (6) Program Assistance Letter- Background and Purpose of Performance Measure Implementation for Health Center Grantees (2008) Program Assistance Letter--Background and Purpose of Performance Measure Implementation for Health Center Grantees (2008); and (7) BPHC website. These documents and reports discuss BPHC's use or intended use of performance measurement information. Specifically, the key themes that emerged from the BPHC document review included the use of performance measurement information for accountability purposes as well as for the purposes of program improvement and understanding.

Table 4.38: Synopsis of Document Review Materials, Types of Use, and Themes

Documents	Types of Use	Themes
<u>BPHC</u>		
2013 Congressional Budget Justification	<ul style="list-style-type: none"> • Ensure compliance with legislative and regulatory requirements 	Accountability
2013 Annual Performance Report	<ul style="list-style-type: none"> • Report overall program accomplishments 	Accountability
2013 Service Area Competition Funding Opportunity Announcement	<ul style="list-style-type: none"> • Inform grantees, partners, and communities 	Accountability
Program Assistance Letter-Uniform Data System (UDS) Changes for 2012	<ul style="list-style-type: none"> • Track progress in reaching HRSA's Strategic Plan goals 	Accountability
2011 Report to Congress	<ul style="list-style-type: none"> • Providing technical assistance and training and sharing best practices 	Program Improvement
Program Assistance Letter-Background and Purpose of Performance Measure Implementation for Health Center Grantees (2008)	<ul style="list-style-type: none"> • Identify trends in order to create or revise programs for improving the health of underserved communities monitor and drive performance 	Program Improvement, Understanding
BPHC website		
<u>ORHP</u>		
2013 Congressional Budget Justification	<ul style="list-style-type: none"> • Make changes to program guidance in order to clearly state expectations regarding performance 	Accountability
2013 Annual Performance Report	<ul style="list-style-type: none"> • Direct grantees toward efforts of performance improvement 	Accountability
Rural Health Network Development Planning Funding Opportunity Announcement	<ul style="list-style-type: none"> • Assess the impact of its programs in rural communities 	Program Improvement
2010 ORHP Annual Report	<ul style="list-style-type: none"> • Identify and provide technical assistance to grantees 	Program Improvement, Understanding

Examples pertaining to the use of performance measurement information for the purpose of accountability as a communication tool or reporting requirement include ensuring compliance with legislative and regulatory requirements, reporting overall program accomplishments and informing grantees, partners, and communities about the patients served by Health Centers. Additionally, the information is used to help track progress in reaching HRSA's Strategic Plan goals regarding improving access to quality health care, health equity and strengthening the health workforce. BPHC documents also referenced the use of performance measurement information for program improvement through providing technical assistance and training and sharing best practices.

The third way in which BPHC documents indicated the use of performance measurement information was through the purpose of understanding, particularly related to learning program accomplishments and challenges. The documents discussed using this information to help identify trends in order to create or revise programs for improving the health of underserved communities monitor and drive performance.

In summary, the information on the BPHC website captures the program office's goal regarding the use of performance measurement information:

The data are reviewed to ensure compliance with legislative and regulatory requirements, improve health center performance and operations, and report overall program accomplishments. The data help to identify trends over time, enabling HRSA to establish or expand targeted programs and identify effective services and interventions to improve the health of underserved communities and vulnerable populations. UDS data are compared with national data to review differences between the U.S. population at large and those individuals and families who rely on the health care safety net for primary care. UDS data also inform Health Center Program grantees, partners, and communities about the patients served by Health Centers. (HRSA n.d.)

In addition the BPHC document review, the study yielded the review of four

ORHP documents. These documents include: (1) 2013 Congressional Budget

Justification; (2) 2013 Annual Performance Report; (3) Rural Health Network Development Planning Funding Opportunity Announcement; and (4) ORHP 2010 Annual Report. The ORHP document review reflected the program office's use or intended use of performance measurement information to help determine the larger impact of rural programs within HRSA. The themes that surfaced from the ORHP document review identified the use of performance measurement information for the purposes of accountability, program improvement and understanding. ORHP documents indicate the use performance measurement information for program improvement, primarily as a communication tool. The 2013 Annual Performance Report indicates that performance measurement information is used for making changes to program guidance in order to clearly state expectations regarding performance and to direct grantees toward efforts of performance improvement. In addition, ORHP notes using performance measurement information to assess the impact of its programs in rural communities, specifically, access to health care, the quality of services, and improvement of health outcomes. In turn, the assessment of the information would be used to identify and provide technical assistance to grantees.

Summary

The purpose of this study was to examine factors that influence the use of performance measurement information. This chapter began with a detailed discussion of the survey results, which examined use of performance measurement information both instrumentally and non-instrumentally, as well as the factors presumed to influence use of this information for decision and management practices. The results of the survey identified the similarities and differences by both the program office (BPHC and ORHP)

as well as by one's position in the office (management/supervisory and staff/non-supervisory). Following the descriptive analyses, an exploratory factor analysis was conducted and, through exploring potential differentiating factors for the dependent variable performance measurement use, instrumental and non-instrumental use were formed and used for regression analyses. Overall, the regression analyses supported the study's hypotheses (as shown in Table 4.29) and found that rational/technocratic factors had a positive and significant relationship with performance measurement use, instrumental use and non-instrumental use. Organizational complexity had a statistically significant relationship with performance measurement use and instrumental use and organizational culture shared a statistically significant relationship with performance measurement use and non-instrumental use. The results did not indicate stakeholder involvement as an influential factor for performance measurement use, instrumental use and non-instrumental use. The interviews and document review that followed helped to elaborate and/or clarify questions from the survey results and regression findings.

CHAPTER 5: DISCUSSION

The overall goal of this study was to examine the use of performance measurement information as well as the factors influencing the use of this information in a federal agency. In particular, the guiding research questions for the study included: (1) what factors influence the use of performance measurement information; (2) under what circumstances is performance measurement information being used; and (3) who is using the information. This chapter will provide a review and discussion of key findings, limitations, as well as implications of the study and future research for public administration.

Review of Findings

Based on the theoretical framework that guided this research study, the following hypotheses were developed:

- H1 Use of performance measurement information consists of both instrumental and non-instrumental use and each type of use is influenced by different factors.
- H2 The greater the organizational complexity, the greater the use of performance measurement information.
- H3 Rational/technocratic factors are positively related with the use of performance measurement information.
- H4 Political/cultural factors are positively related with the use of performance measurement information.
- H4-a Organizations that involve stakeholders in the performance measurement process are more likely to use performance measurement information.
- H4-b Organizations that encourage innovation and have in place rewards are more likely to use performance measurement information.

The benefits of using performance measurement information are widely known but there appears to be minimal use of this information in federal agencies. One reason why this information is not used may be the way in which performance measurement information is being defined. Weiss (1999) from the field of program evaluation indicates that use of information occurs instrumentally and non-instrumentally. Instrumental use occurs when information is used to make decisions. This type of use is observable and there is a direct relationship to the information and the decision that is made. Non-instrumental use, on the other hand, is not always visible and utilizes understanding and learning to make sound decisions regarding the performance of the program or organization.

To test the hypothesis regarding instrumental and non-instrumental use several analyses occurred: survey findings, multiple regression analyses, interviews and document review. The survey, interviews and document review findings suggest that instrumental use of performance measurement information occurs in both HRSA and ORHP. For instance, the descriptive survey analysis indicates perceived use of performance measurement information for reporting purposes and program improvement by both program offices. Program improvement is also identified in the interviews as the primary way in which BPHC and ORHP use performance measurement information in their program offices. During the interviews, it appeared that responses indicating program improvement may have been more conceptual in nature than directly making decisions for program improvement which may reflect how program improvement is

interpreted by managers and staff. Behn (2003) admits that program improvement is sometime conceptual in nature though it is also used for accountability purposes.

Another interesting finding was regarding the use of performance measurement information as a communication tool. The survey results indicate that BPHC responded favorably to using information as a communication tool; however, ORHP was divided between using it for this purpose between a considerable and limited extent. Interesting, when interview participants were asked about how performance measurement information is used in their program office, both program offices consistently identified using this information as a communication tool with their grantees, constituents and others. Also, through the interviews, there was an interest from ORHP participants to obtain a better understanding of their performance measures and the value it brings to the program. This program request indirectly supports previous studies as well as this study's theoretical framework, suggesting that an organization's culture, which is open to learning and understanding the components that make an organization successful, encourages the use of performance measurement information.

Multiple regression analyses were conducted to test whether different types of use elicited different factors that influence use of performance measurement information. The results of the analyses indicated that certain factors may influence perceived use of performance measurement information. The models for the multiple regression analyses included three dependent variables: performance measurement use which represented overall use of information, instrumental use, and non-instrumental use. The independent variables consisted of organizational complexity, organizational culture, rational/technocratic factors and stakeholder involvement. The results of the analyses

indicate that perceived instrumental use is a positive and statistically significant relationship to the rational/technocratic factor. In addition, perceived non-instrumental use has a positive and statistically significant relationship with organizational culture and organizational complexity has a positive and significant relationship with performance measurement use. When multiple regression analyses were conducted on BPHC and ORHP individually, the BPHC results indicated that organizational complexity and rational/technocratic factors are positive predictors of perceived instrumental use and performance measurement use. The results for both BPHC and ORHP also suggest that the length of time in the program office is also a predictor of perceived non-instrumental use. For BPHC, there is a positive relationship implying that newer staff and managers use performance measurement information for understanding and learning and, for ORHP, there is a negative relationship suggesting that managers and staff with more time in the program office use performance measurement information to learn and understand their programs. Overall, the results and findings show that there are two types of performance measure use, instrumental and non-instrumental and those factors can affect each one differently.

Another hypothesis tested in this study was the relationship between organizational complexity and perceived performance measurement use. As previously mentioned, organizational complexity was found to have a positive and statistically significant relationship with perceived performance measurement use. This finding leads one to interpret that a higher level of organizational characteristics or complexity, such as decision processes, organizational tasks and written processes and procedures, increases the use of performance measurement information. This finding is also supported by

public administration literature and may be due to complex organizations having the infrastructure in place to assist with understanding data, reporting and communicating performance information within their office, as well as improving performance.

As mentioned, mechanistic organizations tend to be more structured and have written processes and procedures as well as review and approval processes regarding use (Daft 2001). When the survey results of the program offices were compared, both offices responded that written processes and procedures, division of organizational tasks, and the required approval process for using performance measurement information occurred to a considerable extent. These responses do not align with the theoretical framework in which mechanistic and organic organizations differed in organizational complexity. The interviews helped to provide some clarity both directly and indirectly regarding organizational structure and complexity. Interviewees found that organizational structure helped to support program changes and that workload, performance and tasks do play a role in the use of performance measurement information. Also noted were concerns regarding the lack of shared performance data within the program office and workload redistribution did not fully support performance measurement use. Indirectly, the interview responses provided insight on organizational structure and perceived use of performance measurement information. ORHP stated within the interviews that levels of approval were needed for staff but there was no references made to written processes or procedures for performance measurement within the program office. In contrast, BPHC managers and staff referenced standard operating procedures that assist them in their performance reviews at various points in the interview. Additionally, several interviewees referenced BPHC's Office of Data and Quality and other resources within the division

such as financial consultants which assist the managers and staff regarding performance measurement information needs such as reports and technical assistance. These aspects of organizational capacity also fall under having the expertise within the program office and an office or division focused on performance measurement information.

Organizational capacities and resources fall under the realm of rational/technocratic factors. These factors, which include having an adequate budget, staff, training and accessible data, have been tested in several studies indicating its influence on performance measurement use. This study found the same results. The findings from the multiple regression analyses indicated a positive and statistically significant relationship with perceived performance measurement use as well as perceived instrumental and non-instrumental use. These findings suggest that having more resources and capacity related to performance measurement information would increase performance measurement use which aligns with findings from previous studies. When rational/technocratic factors was examined at the program level, there were clear distinctions between the two program offices regarding having adequate staff with knowledge and expertise, a team or division dedicated to reviewing performance measurement information and enough training. These differences were also noted when multiple regression analysis was conducted by program office. The results suggest that rational/technocratic factors (as well as organizational complexity) are a positive predictor of perceived instrumental use and performance measurement use for BPHC. The results did not show significance for rational/technocratic factors in ORHP. Given the differing levels of organizational complexity among these two program offices, one may suggest that organizational complexity may affect the program office's resources as

it relates to staffing and use of performance measurement information. Another reason for the different responses between the programs offices may be related to the length of time the performance measurement systems have been in place to collect the data. Program offices with more time and experience can better assess where the resource needs are to improve the use of performance measurement information in their management processes. The interview process emphasizes the importance of the findings, particularly for ORHP where the need for training and staff expertise was emphasized. Additionally, though both program offices agreed that both offices provided sufficient access to performance measurement information, BPHC interviewees were interested in having more frequent, real-time data to truly assess the grantees as well as the program. The analyses, overall, suggest the need to continually monitor the needs and interests of managers and staff in program office to encourage and maintain support for using performance measurement information.

The fourth hypothesis tested in this research was organizational culture. Multiple regression analyses showed that organizational culture had a positive and statistically significant relationship with non-instrumental use of performance measurement information. This finding leads one to infer that increased organizational culture or behavior, such as innovative practices and rewarding use of performance measurement information, increases the perceived use of performance measurement information. This finding is also supported by other study findings. For example, the GAO (2005) found that by incentivizing and rewarding others through the use of performance information, accountability towards improved managing and decision making practices occurred. When the program offices were compared, BPHC reported that though innovative

practices occurred to a considerable extent, rewarding managers and staff occurred primarily to a limited extent. ORHP, on the other hand, were split between considerable and limited regarding the extent to which the program office was open to innovative practices for performance measurement information. Rewarding managers and staff was found to occur to a limited extent.

In addition to the above findings, additional themes that emerged were regarding stakeholder involvement, factors that hinder the use of performance measurement information, performance measurement terminology and when instrumental versus non-instrumental use occurs. Perceptions from BPHC and ORHP managers and staff revealed the significance role stakeholders have in performance measurement during the interviews. The interviewees implied two key roles that stakeholders have with their program office. One role is a collaborative relationship between the program office and stakeholders. The other role stakeholders have is to be the entity to which the program office reports performance measurement information. For example, ORHP reported that stakeholders play a major role in performance measurement development. BPHC, on the other hand, reported that having performance measurement information that is easily accessible to share with stakeholders is important. Additionally, BPHC stated that stakeholders can play a key role in providing technical assistance to grantees regarding performance measurement information. The descriptive analysis indicated varying perceptions on the role of stakeholders in the performance measurement process by program office, particularly regarding development of performance measures, support of programmatic changes and holding the program office accountable for programmatic improvements. In addition, stakeholder involvement was not found to be statistically

significant to perceived performance measurement use in multiple regression analysis.

The interviews provided clarification on perceived use of performance measurement information, suggesting that stakeholders help to in the overall performance measurement process in an effort to improve performance.

In addition to stakeholder involvement, the interviews also identified some factors that hinder or limit the perceived use of performance measurement information. A key limitation to using performance measurement data identified by ORHP is a lack of understanding of the value of performance measurement information. Key limitations identified by BPHC include the learning curve for new staff, availability of online training and varying skillsets of program staff. These limiting factors are important to consider when identifying ways to encourage the use of performance measurement information.

Another theme that surfaced from the study is the terminology used to describe performance measurement information in ORHP. The survey results, follow up interviews, and document review indicate that performance measurement information is used to improve and enhance program performance in ORHP but when compared to BPHC, it may appear that it may not be used as extensively. A potential reason for this difference may be in the terminology associated with performance measurement use within the program offices. A more comprehensive examination of ORHP's performance improvement activities helped to provide a clearer understanding of performance measurement use within that program office. For example, in addition to having a performance measurement system in place, ORHP also have activities in place to evaluate its programs and develop tools and resources for the rural communities all in an

effort to improve program performance. Information from their performance measurement system represents only an aspect of their overall performance measurement effort and this information may vary by program type since not all programs utilize the performance measurement system. It is also possible that managers and staff only associate program improvement with their evaluation and technical assistance activities. As a result, ORHP managers and staff may not equate the term “performance measurement” with their overarching effort to enhance program performance. Another possibility is that the terms “performance measurement” and “evaluation” are used interchangeably and that by not referring to use of information with both terms as well as other associations noted above, respondents were unclear that performance measurement information is being used. As a result, future consideration is needed by public administration practitioners, researchers and scholars regarding the types of questions used to gather information on performance measurement activities to truly garner the use of performance measurement information within a program office.

As previously noted, this study assessed performance measurement use from both the instrumental (direct, observable use of performance measurement information for decision making) and non-instrumental (indirect, less observable use of performance measurement information for decision making) perspective. The survey, follow-up interviews, and document review indicate perceived instrumental and non-instrumental use by both program offices. Given the varying lengths in time in which the program offices have had performance measurement systems in place, one may ask whether instrumental use occurs faster or slower than non-instrumental use and whether one type of use is easier than the other. Federal reform efforts, as noted by Radin (1998), were

based on a rational approach to decision making through the use of performance measurement information, resulting in performance measurement use for the purposes of accountability and improvement. This approach, however, appeared not to have increased the use of this information as much as expected (GAO 2008, Rinne, Lyytimaki and Kautto 2012). Some research contends that instrumental use of performance measurement information may only provide limited proficiency in influencing complex decision practices. Non-instrumental use, however, takes place when performance data may be too complicated, elicits opposing thoughts or lacks the chance to be used specifically in making decisions (Bauler 2012, Rinne, Lyytimaki and Kautto 2012). In their study examining use of sustainable development indicators at national and European Union level, Rinne, Lyytimaki and Kautto (2012) found that the use of indicators did not occur solely through one type of use but involved both instrumental and non-instrumental use. According to Willoughby (2013)¹, time may also be an important factor of non-instrumental use of performance measurement information before instrumental use. The author notes that non-instrumental use provides more time for organizations to practice, retool and become comfortable with their performance measurement system. In turn, more time is afforded to see what works, try new things and make any necessary adjustments. In addition, time may be a determining factor in considering whether instrumental or non-instrumental performance measurement use will occur, particularly as it relates to the length of time the performance measurement system has been in place. Organizations that are new to performance measurement appear not to use this

¹ Permission to cite the paper, "Performance Budgeting Initiatives: An International Comparison", was granted by the author.

information for decision making. However, time provides organizations a chance to establish a comfort level, making it easier for them to develop and consume information for future decisions.

Limitations of the Study

This research study helped to increase knowledge and understanding regarding the use of performance measurement information in a federal agency; however, it is important to share some of its limitations. One limitation of the study was gathering self-reported data with the assumption that the information collected from the survey would be accurately reflective of the program offices. Self-reported data face validity concerns regarding whether the study measured what it was intended to measure. To address these concerns, the survey tool was developed based on the literature review and theoretical framework for performance measurement utilization. Also, discussing the survey tool with program experts and conducting a pilot test helped to minimize the limitations associated with self-reporting. Another limitation to the study was the low survey sample size and response rate. A total of 116 out of 326 managers and staff completed the survey which produced a 35.6 percent response rate; once the data was reviewed, that number decreased to 114 respondents with approximately a 35 percent response rate. The sample size was too small to establish statistical power and its results were not generalizable. Additionally, as a comparative case study analysis, only two program offices were selected for this study and may not be representative of the use of performance measurement information in other federal programs. However, the survey results were corroborated with semi-structured interviews and document review which helped to compensate for the low response rate and valuable insight was gained as a result of the

survey regarding the use of performance measurement information at the federal level as well as others in the field of public administration.

Implications of the Study

Historically, efforts have been made to make more substantial use of performance measurement information for decision and management processes at the federal level. However, public administration literature continues to suggest that federal programs appear to collect more performance measurement information than is used. Furthermore, research regarding the use of performance measurement information for decision and management practices has been scarce, providing an opportunity to learn more about performance measurement practices at the federal level. As a result, this research study examined the factors influencing the use of performance measurement information, the circumstances in which the information is used, and who is using the information.

The study results revealed the similarities and differences of the two program offices regarding the use performance measurement information and the factors influencing the use of this information. In addition, there were two common themes that emerged. The first common theme focuses on the need for continuous assessment of performance measurement resources, both internally and externally, for performance measurement information to be used effectively. There were clear efforts from both program offices on reviewing and revising measures for grantees and for communicating or reporting the information externally, however, there did not appear to be any efforts to re-assess the needs of managers and staff in order to encourage the use of performance measurement information. The second common theme from the study focuses on cultivating and rewarding innovative practices for performance measurement use.

Though both program offices identified their office was open to innovative practices to a considerable extent, the interviews suggested that there may not be a venue to share new ideas. By sharing new ideas and being acknowledged for their efforts, the use of performance measurement information by managers and staff can be fortified. In addition to the common themes, the study also revealed other key outcomes. One key outcome of the study was examining factors influencing the use of performance measurement information as both instrumental (or visible use) and non-instrumental (or invisible use) (Weiss 1998). This outcome also helps program offices to explore or expand on ways to use performance measurement information and what factors or activities will help them toward that specific use. Another key outcome of this study that was revealed related to the use of performance measurement information by both managers and staff. Most of the literature on performance measurement has focused on performance measurement use at the managerial level; however, this study found that both managers and staff are using this information in order to make recommendations or decisions at the grantee and program level. Overall, these results provide federal program offices as well as other public administrators potential opportunities to improve the use of performance measurement information within their program offices.

Future Research

This study provided valuable insight into the use of performance measurement information at the federal level. However, the case study design assesses two program offices within HRSA. Future research should expand upon this survey to examine performance measurement use across multiple programs within a federal agency to identify the ways in which performance measurement information is used to improve and

enhance the management and decision making processes within that organization. The researcher should also be mindful of the role program staff may have in the use of performance measurement information and to include program staff as well as managers in future studies. The role of the program staff in the use of performance measurement information may be directly influenced by the organization's capacity, particularly staffing expertise and dedicated division or office, and the organization's complexity. As a result, these factors should also be considered in future research. Lastly, researchers should examine performance measurement use from both the instrumental and non-instrumental perspectives in order to have a greater understanding of how federal managers and staff are using this information to improve program management.

Conclusion

The use of performance measurement information has been examined in public administration literature for decades; however, how this information is used to make decisions and manage programs at the federal level is not well documented. Increased efforts around performance measurement at the federal level were made to strengthen accountability, examine the effect federal funding had on its programs, enhance performance and help with the decision and management processes (Cavalluzzo and Ittner 2003; de Lancer Julnes and Holzer 2001). In spite of these efforts, the GAO (2005) found that there had been minimal change in the use of performance measurement data for managing and decision making for a decade. In addition, the lack of research examining how and why performance information is used poses a major knowledge gap for federal programs that are trying to find ways to enhance the use of performance measurement information to improve programmatic efforts. Based on this information,

the purpose of this research study was to examine the factors that influence the use of performance measurement information. In addition, the study looked at the ways in which performance measurement information was used as well as who used it.

By using a comparative case study analysis and mixed methods research approach, an in-depth examination regarding the use of performance measurement information occurred in two federal program offices. The study results found that organizational capacity, organizational complexity and organizational behavior were statistically significant to the use of performance measurement information. In addition, adding organizational complexity as a factor for influencing performance measurement use as well as program staff for the analysis added a unique perspective that has not been seen in previous studies. It also helped to capture key distinctions regarding the use of performance measurement information at the federal level. Overall the study showed that performance measurement information is being used at the federal level; however, it is being used at different levels. Communicating the value and importance of performance measurement information, continuously re-assessing needs associated with using performance measurement information and creating a culture that encourages and supports the use of performance measurement information are all critical aspects to the actual use of this information. As federal program managers and staff, as well as other public administrators ponder these key aspects, it is also important to consider performance measurement use from a holistic perspective. It is from this foundation that program offices can create or enhance practices that will connect performance measurement information with their management and decision making practices.

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APPENDIX A

SURVEY CONSENT LETTER

Use of Performance Measurement Information in a Federal Agency: A Comparative Case Study Analysis

Hello,

My name is Julia Bryan and I am a doctoral student in the public administration program at the University of Baltimore. I am conducting a research study to examine how and why federal programs use performance measurement information. This study is important to your program office and the field of public administration because it will provide a better understanding of factors that influence the use of performance measurement information. Additionally, it may help determine ways to improve the linkage between performance measurement use and management practices at the federal level. Your knowledge and expertise can provide valuable insight on this topic and your participation in the research study is greatly appreciated.

The link below will direct you to the web-based survey for this study. The survey will take approximately 15 minutes to complete and will be available for 4 weeks. A friendly reminder e-mail will be sent at the end of the second week. The survey will contain questions related to the extent to which performance measurement information is used and the circumstances in which the information is used within your program office. In addition to the web-based survey, you also have the option to complete a paper-based survey.

[Survey Link]

Participation in this study is completely voluntary. This research study is not connected to any HRSA-related activities and is solely for academic purposes. Please be assured that your responses will be anonymous and kept confidential, consistent with federal and state regulations. Only Ms. Bryan and Dr. Patria de Lancer Julnes, Dissertation Committee Chair, will have access to the data which will be kept in a locked file. The records will be maintained for three years then destroyed.

This study has been reviewed and approved by The University of Baltimore's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies and that it poses minimal risk to participants. If you have any questions or concerns about your rights, please contact the IRB at (410) 837-6199.

The results of this study will be presented in the aggregate. Any information provided by you will be afforded the professional standards for protection of confidentiality and anonymity. If you would like a copy of the report once completed, please feel free to contact me at the email address below.

By completing the web-based or paper-based survey, you are consenting to the terms of the research stated above. This notice serves as your copy of the consent agreement.

Thank you for your participation in this study. The second page of this document provides definitions to key terms in the survey. If you have any questions about this study, please feel free to contact me.

Julia Bryan
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Terms/definitions associated with this study:

- Performance measurement information: refers to information derived from performance-based management systems. In general such systems consist of indicators of inputs, outputs, outcomes, efficiency, effectiveness, workload, and satisfaction.
- Organizational capacity: refers to having funds, staff, training and access to performance measurement information.
- Organizational behavior: refers to practices, ideas and strategies regarding performance measurement information.
- Stakeholder: refers to external partners that have interest or are invested in improving performance within the program office. These partners may include national organizations, and non-profit organizations as well as federal, state, and local agencies.
- Organizational characteristics: refers to structure and arrangements in program offices.
- Legitimization: refers to rationalizing, justifying, or validating actions or decisions related to performance measurement information.

APPENDIX B



Thank you for your participation in this survey. The purpose of this survey is to examine how and why federal programs use performance measurement information at the program level (not individual grantee or personnel performance level). This study is important to your program office and the field of public administration because it will provide a better understanding of factors that influence the use of performance measurement information. Your knowledge and expertise can provide valuable insight on this topic and your participation is greatly appreciated.

Performance Measurement Use

Performance measurement information is used in organizations for several purposes: accountability (communicating/reporting on performance information); improvement (change or adjust programs for improved performance); understanding (create learning opportunities); and mobilization (validating actions and decisions made within an organization).

The following questions concern how performance measurement information is used for different purposes in your program office. For each question, please answer by clicking on the item associated with one of the following: great extent, considerable extent, limited extent, no extent.

	Great Extent	Considerable Extent	Limited Extent	No Extent
To what extent does your program office use performance measurement information as a communication tool to showcase programmatic efforts?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To what extent does your program office use performance measurement information to comply with federal reporting requirements?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To what extent does your program office use performance measurement information to develop new and/or alter existing programs, processes, or contracts that will improve and enhance performance?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To what extent does your program office use performance measurement information to provide a higher level of understanding of its' program(s)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To what extent does your program office use performance measurement information to help managers and staff learn more about program accomplishments and challenges?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<p>To what extent does your program office use performance measurement information to foster a positive learning environment?</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>To what extent does your program office use performance measurement information to help legitimize actions and decisions made within the program office?</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>
<p>To what extent does your program office use performance measurement information to support program-wide budget recommendations and decisions?</p>	<p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></p>

Please share any other comments or thoughts you would like to add:

Organizational Capacity

Organizational capacity within your program office refers to having adequate funds, staff, training and access to performance measurement information.

Please share the extent to which you agree or disagree with each of the following statements concerning your program office’s capacity to use performance measurement information. Please answer by clicking on the item associated with one of the following: strongly agree, agree, disagree, strongly disagree, or don’t know.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
My program office has enough funds to support and sustain performance measurement information.	●	●	●	●	●
My program office has enough staff with knowledge and expertise on performance measurement.	●	●	●	●	●
My program office has a team or division dedicated to reviewing performance measurement information.	●	●	●	●	●
I have received enough training on performance measurement information to do my job.	●	●	●	●	●
My program office provides sufficient access to performance measurement information so that I can do my job.	●	●	●	●	●

Please share any other comments or thoughts you would like to add:

Stakeholder Involvement

Stakeholders refer to external partners that have an interest or are invested in improving performance within your program office. These partners may include national organizations, and non-profit or non-governmental organizations as well as federal, state, and local agencies.

The following questions are related to external stakeholder involvement and performance measurement information. Please answer by clicking on the item associated with one of the following: great extent, considerable extent, limited extent, no extent, or don't know.

	Great Extent	Considerable Extent	Limited Extent	No Extent	Don't Know
To what extent do external stakeholders assist in developing performance measures for your program office?	●	●	●	●	●
To what extent do external stakeholders help support programmatic changes in your program office?	●	●	●	●	●
To what extent do external stakeholders hold your office accountable for program improvements?	●	●	●	●	●

Please share any other comments or thoughts you would like to add:

Organizational Behavior

Organizational behavior refers to the practices, ideas and strategies regarding performance measurement information.

The following questions are related to your program office's behavior regarding performance measurement information. Please answer by clicking on the item associated with one of the following: great extent, considerable extent, limited extent, no extent, or don't know.

	Great Extent	Considerable Extent	Limited Extent	No Extent	Don't Know
To what extent is your program office open to innovative practices for performance improvement?	●	●	●	●	●
To what extent does your program office reward managers on ideas and strategies to use performance measurement information?	●	●	●	●	●
To what extent does your program office reward staff on ideas and strategies to use performance measurement information?	●	●	●	●	●

Organizational Characteristics

Organizational characteristics refer to arrangements and structure within an organization such as branches/divisions, processes/procedures, and tasks that may influence the use of performance measurement information.

The following questions concern the organizational structure and arrangements of your program office. Please answer by clicking on the item associated with one of the following: great extent, considerable extent, limited extent, no extent, or don't know.

	Great Extent	Considerable Extent	Limited Extent	No Extent	Don't Know
To what extent does making decisions involve the review and approval of performance measurement information from managers and staff within other teams, branches, or divisions in your program office?	●	●	●	●	●
To what extent do written processes and procedures guide the management and decision making processes in your program office?	●	●	●	●	●

To what extent are organizational tasks, related to performance measurement, divided among teams, branches or divisions in your program office?	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
To what extent does using performance measurement information in your position require approval from your team, branch or division manager?	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

** In general, what best describes the program-level decision making process in your program office (please click on the item associated with your response):

- Formal decision making committee with regularly scheduled meetings and agenda
- Formal meetings for a specific project
- Informal or ad hoc meetings
- Random, unexpected chats with managers and/or staff

Please share any other comments or thoughts you would like to add:

Demographic Information

The following questions are for descriptive purposes only. Please be assured that your responses will be kept confidential, consistent with federal and state regulations. The information will be reported only in the aggregate.

Please share some information about yourself and your program office by clicking on the box associated with your response below:

* Program Office:

- Bureau of Primary Health Care
- Office of Rural Health Policy

* Position:

- Management/supervisory position
- Staff/non-supervisory position

* * How long have you worked with HRSA? _____ years

- <2 years
- 2-5 years
- 6-9 years
- >10 years

* * How long have you worked in your current position? _____ years

- <2 years
- 2-5 years
- 6-9 years
- >10 years

APPENDIX C

Protocol for Follow-up Interviews:

NAME:

DATE:

PROGRAM OFFICE:

POSITION:

Thank you for participating in the follow up interview for my dissertation. This information will help to support the survey results and will only be used by the researcher. The information will be destroyed once the research is complete.

Use of Performance Measurement Information:

I would like to begin by asking a couple of questions regarding the use of performance measurement information in your program office.

1. How is performance measurement information used in your program office?

2. What are some areas in which you think performance information could be used more effectively in your program office and why?

Factors Influencing Use of Performance Measurement Information:

I'm interested in learning more about factors that may influence the use of performance measurement information in your program office.

1. What are some of the elements in your program office (i.e. resources, structure, behavior) that encourage the use of performance measurement information?

2. What elements/factors hinder or limit the use of performance measurement information in your program office?

3. In what way(s) do external stakeholders influence the use of performance measurement information?
4. Describe the role performance information plays in your job activities.
5. How useful has the performance information been towards assisting you with making decisions or recommendations within your program office?
6. What are some suggestions you have that would make performance information more useful to your job activities and create greater value to your program office?
7. Do you believe that the structure of your program office (e.g. the number of branches, divisions, assigned tasks, etc.) plays a role in how you use performance measurement information? Please explain.

APPENDIX D: Summary of Study Variables

Variable	Definition	Survey Item	Responses
Dependent			
Accountability	Report/Communicate Program Performance	Communication tool to showcase programmatic efforts Comply with federal reporting requirements?	4= Great Extent 1= No Extent
Program Improvement	Changes or adjustments to the program to improve and enhance performance	Develop new and/or existing programs, processes or contacts that will improve and enhance performance?	4= Great Extent 1= No Extent
Understanding	Gain a better understanding of the program and provide learning opportunities	Higher level of understanding on its programs?	4= Great Extent 1= No Extent
		Learn more about program accomplishments and challenges?	4= Great Extent 1= No Extent
		To what extent does your program office use performance measurement information to foster a positive learning environment?	4= Great Extent 1= No Extent
Mobilization	Validate or legitimize support for positions already hold within the program office such as promoting program outcomes	Legitimize actions and decisions made within the program office?	4= Great Extent 1= No Extent
		Support program-wide budget recommendations and decisions?	4= Great Extent 1= No Extent

Variable	Definition	Survey Item	Response
Independent			
Levels of Involvement	The extent to which other people, levels, or divisions are involved in the decision making process for performance measures	Review and approval of performance measurement information	5= Great Extent 1= Don't Know
		Program-level decision making process in your program office	Formal decision making committee; Formal meetings; Informal or ad hoc meetings; and Random, unexpected chats
Processes/Procedures	The extent to which processes and procedures for performance measures are in place for decision making	Written processes and procedures guide the management and decision making processes	5= Great Extent 1= Don't Know
Specialization	The extent to which organizational tasks for performance measurement are divided within the program office	Organizational tasks, related to performance measurement, are divided among teams, branches or divisions	5= Great Extent 1= Don't Know
			5= Great Extent 1= Don't Know

Variable	Definition	Survey Item	Response
Budget	The extent to which performance measurement information is used to inform budget allocations within the program office	Enough funds to support and sustain performance measurement information	5= Strongly Agree 1= Don't Know
Staff	The extent to which the program office is sufficiently staffed and has the flexibility to address performance measurement information	Enough staff with knowledge and expertise on performance measurement	5= Strongly Agree 1= Don't Know
		Team or Division dedicated to reviewing performance measurement information	5= Strongly Agree 1= Don't Know
Training	Frequency to which managers/staff are trained to evaluate performance measurement information	Enough training on performance measurement information to do my job	5= Strongly Agree 1= Don't Know
Information	The extent to which performance measurement information is shared and accessible	Sufficient access to performance measurement information to do my job	5= Strongly Agree 1= Don't Know

Variable	Definition	Survey Item	Response
Stakeholders	The extent to which external stakeholders are interested in and support performance measurement information	Assist in developing performance measures	5= Great Extent 1= Don't Know
		Support programmatic changes	5= Great Extent 1= Don't Know
		Hold office accountable for program improvements	5= Great Extent 1= Don't Know
<hr/>			
Control			
Program Office			1= BPHC 2= ORHP
Position			1= Management or Supervisory 2= Staff or Non-supervisory
Length of Time at HRSA			< 2 years 2-5 years 6-9 years >10 years
Length of time in program office			< 2 years 2-5 years 6-9 years >10 years
