

Quality Improvement or Symbolic Adoption: Mandating Performance Measurement in Local Public Health

Dissertation for the Degree of Doctor of Philosophy (PhD)

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Abstract

Performance management has gained significant momentum throughout the public sector in recent decades. A large share of public organizations claim to have adopted some form of performance system that involves the collection and use of operational information to inform managerial decision-making. This is particularly true in public health. The growth in popularity of quality improvement initiatives and PHAB accreditation have led to a boom in performance adoption. However, the study of performance in public health has lagged behind the practice. This study examines performance management in public health via three independent yet connected studies.

The first is an in-depth, qualitative case study of a mandated performance measurement system in the U.S. state of New Jersey. The study suggests that a centralized system of performance data collection require the active participation of the aggregating body to analyze and disseminate the information back to the reporting agencies. The second and third studies take this finding, a need for a robust performance information reporting framework, and evaluate two potential weaknesses in the communication of performance information. Through an experimental framework, the visual display of performance information is examined as well as bureaucratic susceptibility to framing effects data reporting are evaluated. These studies find that for more complex key performance indicators, bureaucrats attach more value to graphically displayed information. Additionally, they exhibit sensitivity to framing effects, information presented in a positive frame is received more positively and vice versa for negatively framed information. The findings of this study will contribute to the ongoing efforts of New Jersey and other states to develop meaningful and effective systems of performance management that will not only improve operational efficiency but indeed the overall health of the public.

Acknowledgements

I am now happy to answer the question “how is your dissertation going?” The typical response from a PhD candidate to such a question ranges from mild annoyance to fits of rage. After a long and indeed winding journey, I can finally say my dissertation is going just fine. However, as much as I want to think the following report is solely the work of my own genius, this was a joint effort with some of the most inspiring people I have ever had the pleasure of knowing.

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Enough of the sappy stuff....

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Chapter 1

Introduction and Review of Literature

Introduction & Aim of Research

The study of performance management has covered a robust series of interesting and meaningful facets within the practice. Performance as a practice has produced rather remarkable results in terms of cost reduction and service quality improvements (Behn, 2007). However, the study of performance management in public health has largely ignored many of the techniques and theories developed elsewhere in public administration. Much of the research has focused on organizational factors that contribute to the provision of “high performance” services (Erwin, 2008) whereas public administration has moved onto more complex ideas like the gap between performance adoption and actual use, the effect of legislative mandates on performance adoption, as well as behavioral limitations to the use of performance data to make decisions (James & Van Ryzin, 2017; Julnes & Holzer, 2001; Radin, 1998).

This dissertation aims to expand our understanding of these concepts in the field of public health administration. The first study uses an interesting policy in the State of New Jersey to expand our understanding of performance mandates and the adoption-usage gap. The Local Health Report is a state-supervised, locally administered performance measurement program that requires all local health agencies in the state to report a uniform series of key performance indicators to a central body for analysis and dissemination. This qualitative case study provides unique insights into public health performance data collection, use, and intergovernmental relations around performance. A major finding in this study is that within a mandated framework, there is a need for an

interactive dialogue with regard to the data collected, thus requiring the state to develop a robust information reporting framework.

This finding is the basis for the second and third study of the dissertation. These two chapters utilize behavioral techniques to examine the influence of both the visual display and framing of performance information on the value and interpretation of such data. The first study tests the difference in perceived value of performance data when it is displayed graphically versus numerically. The second experiment uses prospect theory to examine whether or not a positive frame for performance data produces differences in interpretation by public health professionals than the interpretations of negatively framed information.

These three studies combined are meant to provide valuable insights for both practitioners and academics interested in performance management in public health. By understanding the organizational dynamics around performance as well as potential traps in the reporting of such data, the study provides meaningful direction for the improvement of performance activities in health agencies as well as fruitful contributions to existing theories surrounding performance in public health.

Review of the Literature

Adopting and “Using” Performance Management – Avoiding Symbolic Adoption

“Everyone is measuring performance.” Nearly fifteen years ago, Bob Behn (2003) proclaimed that performance measurement was ubiquitous in public organizations. However, he noted later in the same paper that this may not be the whole truth. He cited research that suggested a meager record in some realms. Today, this record is almost certainly less meager. What can also be said, with some room for error and exaggeration, is that *everyone is studying performance*. The study of performance has become one of the cornerstones of public management research as has word missing poked and prodded the subject from nearly every angle. A common thread among this research is the ongoing search for what exactly leads an organization to adopt a performance system. Numerous authors have dedicated entire articles to this very topic and have established a series of relatively well agreed upon conditions (D. Ammons, 2014; Behn, 2014; Julnes & Holzer, 2001; Jeannette Taylor, 2011).

Although subsequent works have further segmented the factors contributing to the adoption of a performance management system, Julnes and Holzer (2001), in particular, provide a broad characterization that is useful in this endeavor. The *rational framework* of an organization, sometimes referred to as the technical features, describes things outside the realm of employee and management behavior, such as resource and technology availability. The *political/cultural framework* refers to the behavioral factors influencing adoption, such as buy-in and support. We will use this broad framework to

explore what has currently been established with regards to performance systems adoption.

Rational Framework

If you imagine the factors influencing the adoption of a performance regime as two gears linked together, this gear would be made up of all the individual parts of an organization that create an environment where employees and managers can function effectively. Data sits at the core of this framework. Along with measuring performance, many organizations try to adopt a system of “continuous improvement,” which requires their data to be collected in a timely fashion (Greiner, 1996). Not only must an organization have the data, but it must be quickly and effectively analyzed such that it can inform decisions (Poister & Streib, 1999). The importance of good data has been shown to be quite substantial. Managers who have plan on using performance information in some way in the future tend to place additional effort on ensuring that the data is of sufficient quality (Kroll, 2015).

These conditions appear to rely heavily on two organizational endowments: competency of employees in performance measurement techniques, and information system capacity (Cavalluzzo & Ittner, 2004; Hou, Moynihan, & Ingraham, 2003; Julnes & Holzer, 2001). These two factors naturally go hand-in-hand. Research suggests that prior to or during the adoption process, there needs to be a minimum level of “knowledge” of performance measurement and management techniques. These can range

from designing appropriate measures to basic performance data analysis and reporting. Training has been shown to enhance these competencies and increase the likelihood of reform adoption (Kroll & Moynihan, 2015). The relevance of these systems partially depends on the relevance and credibility of the information being produced from them.

The information systems, working in tandem with those managing the measurement processes, also play a role in adoption. The previous authors describe a scenario where the burden placed on the organization by the process of data collection and reporting can hinder such initiatives. Highly manual data collection can be seen as simply additional work, rather than a value-added activity. There appears to be a trade-off that each organization needs to make with regards to data. Although it may be a laborious process, evidence suggests that the more measures available to decision makers, the more likely they are to incorporate at least some of them into their management framework (A. T. K. Ho, 2011).

The type of activities being conducted influence the data that can be collected. Governments are often faced with a challenge in determining exactly how good their performance really is (Pollitt, 2000). Traditionally, performance measures have been placed in one of four categories: workload, efficiency, effectiveness, and productivity (D. N. Ammons, 1995). This has contributed to organizations choosing to begin their performance efforts in areas where the activities can be aligned with these categories. Policing has perhaps the longest history of data collection and performance measurement

because activities are routinely monitored, the effects of resource re-allocation can be seen relatively quickly, and very simple geospatial analysis can produce productive insights (Behn, 2014). Along with policing, examinations of contemporary performance systems show that favored activities for monitoring also include roads, sanitation, and parks and recreation (D. N. Ammons & Rivenbark, 2008). This is because a preference for efficiency measures naturally leads to monitoring activities which can be displayed as units of output versus FTEs or dollars spent.

Other activities, however, have seemingly lagged behind in the performance boom. Public health and environmental services, for example, present unique challenges to this type of management initiative. Although there has been some uptake in measuring performance in these areas, that seems to be concentrated in larger cities with more resources and robust management systems (Erwin, 2008). These systems, rather than one central hub for service delivery, act as complex networks of service providers in both the public and private realms (Landrum & Baker, 2004). Additionally, it is often difficult linking activities to outcomes for health and behavioral services. A department may create an anti-obesity or anti-domestic violence initiative, but the results of those activities may not be seen for years or decades, and in some cases it may be altogether impossible to directly link activities to population health or well-being outcomes (Derose, Schuster, Fielding, & Asch, 2002).

Political/Cultural Framework

Public management research has spent significant time exploring how the environmental conditions within an organization determine the adoption of performance initiatives. These include both internal and external factors. It appears that the role of leadership in championing these initiatives cannot be understated. In the early stages of development, a “transformational leader” can establish a climate that is conducive to measuring performance by articulating clear goals and fostering a culture that is appreciative of data-informed decision making (Bass & Avolio, 1993; Bass & Riggio, 2006; Moynihan, Pandey, & Wright, 2011). The opposite can also be true. Leaders may see the reform as simply a temporary project and may actively or passively work to discredit the process (Radin, 2006). Without the communication of value from leaders, managers may pursue the reform for symbolic purposes only (Moynihan, 2005).

Early research into the power of leadership suggested that in many instances, the executive of an organization can create fundamental change in the habits and behaviors of employees (Follett, 1926). Early critics of the traditional labor-management dichotomy suggested that these changes in organizational culture could be achieved, at least partially, through coercion. However, Barnard’s seminal work on organizational theory posed the idea of a morality within leadership. His work suggests that a major, yet less understood, cause of organizational failure was a rejection of the idea that organizations should foster collaboration across functional areas, and indeed managerial tiers (Barnard, 1938). Recognizing its importance, bureaucratic reformers pushed for a rethinking of leadership in public institutions and an expansion of what we mean by organizational leadership (Dimock, 1945; Selznick, 1957; Terry, 2015). Performance management

offers organizations a unique opportunity to rethink the way they make decisions and the way accountability is dispersed (Behn, 2001).

Leadership commitment throughout the process can also encourage sustained adoption. If the executives of an organization expend their own personal time and labor resources in the pursuit of performance, this lends the system credibility. Individuals throughout the organization are given clear signals that the reform is important to the leaders of the organization, and are thus more likely to participate themselves (Dull, 2009). Similarly, leaders have the ability to create the need for performance information. By using it as a tool for accountability, leaders further communicate how managers and employees are expected to behave and how they are expected to interact with the performance system (Andrews & Moynihan, 2002). This, however, has been shown to have its limits. If the system turns punitive or is perceived simply as a system of monitoring rather than improvement, resentment can develop among those working in the organization (DeHaven-Smith & Jenne, 2006). This tension can be linked to the overall climate set by leaders. If employees feel there is a high value for employee welfare and that the data collected through performance systems will serve to both enhance the outputs of the organization and the experience of the employees, they are more likely to value the reform. Fundamentally, leaders are responsible for establishing a climate of trust between all levels of the organization (Destler, 2016).

Another commonly cited condition for performance measurement is administrative flexibility. This refers to individuals having the ability to experiment and test new methods of conducting business. It relies on the existence of discretion when it comes to developing new processes or reforming current ones (Moynihan & Pandey, 2010). Discretion can manifest itself in numerous ways. Thinking broadly, Behn (2001) describes charter agencies which are entire organization units that are held accountable for results rather than purely the process. In this way, the resulting outcomes delivered to stakeholders are the criteria., which would encourage the use of performance information to evaluate services. On the micro level, a manager's ability to control (to the extent possible) pay ranges, as well as the hiring and firing of employees, has been shown to positively moderate the effects of performance systems (Nielsen, 2013).

Discretion on the part of management has been cited as a feature of an organizational culture of learning, which is vital to the success of performance regimes (Schein, 2010). There is an expectation that once information is collected, it can then both be used for decision-making and for organizational adaptation and learning. An organization must be able to adopt new routines for deciphering information, such that it matches the organizational culture and employee competencies (Mahler, 1997; Moynihan, 2005). These systems of learning often rest on the shoulders of managers so higher levels of managerial authority and autonomy can positively moderate this process.

In public organizations, however, managerial authority is rarely inherent. It must be established by the political leaders of the organization. This is why numerous authors have discussed the importance of political support to the adoption of these systems (Julnes & Holzer, 2001). External support from political officials has been linked to an increased usage and deployment of performance measures (Wang & Berman, 2001). However, the potential consequences of increased accountability and transparency may have political ramifications (Bouckaert, 1993). This leads us to presume that elected officials can play either a positive or a negative role in the process. This makes intuitive sense because elected officials are often the chief executives of public agencies and set the tone for the overall organization.

Support can come in different forms. Research has shown that the use of performance information by council members themselves can positively affect the operations of this management system. Councils can aid in setting organizational goals as well as setting funding targets at the enterprise and programmatic levels (A. T.-K. Ho, 2006). Beyond an active participatory role in the performance process, general enthusiasm for these reforms may lead to improved resource flow to the efforts and bolster administrative discretion when designing measures (Jeannette Taylor, 2011). Some have argued, however, that an entrepreneurial organization can overcome political reticence (Yang & Hsieh, 2007). Additionally, rather than explicit support, it may be as simple as establishing a high level of trust between elected officials and managers that encourages adoption. (Yang & Holzer, 2006). However, the majority of research suggests that political support itself plays at least some role in system adoption. At a basic level,

external influence from political principals can more strongly mandate the adoption of these systems. This has been seen most frequently at the federal and state levels of government (McNab & Melese, 2003; Moynihan, 2006, 2008; Radin, 1998, 2000)

Table 1.1: Factors Influencing Performance Adoption

<i>Factor</i>	<i>Technical/Cultural</i>	<i>Relationship Direction</i>
Employee competency	Technical	Positive
Technological capacity	Technical	Positive
Clear Activity-Outcome link	Technical	Positive
Leadership Commitment	Cultural	Positive
Administrative Discretion	Cultural	Positive
Political Support	Cultural	Positive

Relative Importance

Along with the existing literature examining the general factors contributing to the adoption of performance systems, there is a parallel series of research that focuses on which of the two categories (Technical vs. Cultural) is relatively more important. A number of studies have shown that cultural characteristics of an organization play both a stronger role in the initial development of a performance system as well as an impetus for its lasting use (Julnes & Holzer, 2001; Jeannette Taylor, 2011).

This may be caused by many variables, particularly regarding the climate of an organization and the ability to adapt and learn. An organization which has developed a culture of rationality and curiosity may be better equipped to plan and set goals, which is the first step in developing these types of systems (Zammuto & Krakower, 1991). Additionally, the importance not only being able to translate performance information

into action items, but the *willingness* to do so, may be the linchpin in this equation. This willingness, along with having individuals at all levels agree on the relevance and legitimacy of the system, seem to have greater influence on this dynamic than the purely technical aspects of an organization (Behn, 2003; Jeanette Taylor, 2001).

Performance Management in Public Health

In recent years, a growing desire to monitor and improve organizational performance has emerged in health departments around the country. This trend has been slower than in other government service areas due to the many unique complexities public health agencies face in both the delivery and conceptualization of their work (A. Handler, Issel, & Turnock, 2001).

The previous organizational considerations, as with much of the existing literature, focus on internal dynamics of public organizations and how they contribute to the adoption and use of performance systems. Another strain of research highlights examples of externally derived motivations. These types of forces present an interesting topic of research as there is a stronger potential for challenges such as goal misalignment, resentment, and symbolic adoption (Moynihan, 2008). The next section explores two types of these motivations relevant to public health in the U.S.

Legislative Mandates and Performance Adoption

The public management literature suggests that the involvement of legislative bodies is an important component of performance regimes (Bourdeaux & Chikoto, 2008). Nearly every president since Nixon has come into office with a clear management reform initiative. In the late 1960s Richard Nixon entered the White House promoting a “New Federalism.” This was highlighted by delegating responsibility for programs to the states, either through unfunded mandates or block-grants (T. J. Conlan, 1988). Ford’s and Carter’s agendas were a product of the economic conditions of the time, meant to squash inflation and spur economic growth through deregulation, or “cutting red tape.” Ronald Reagan’s management style was based on a philosophy that government itself is the cause of most social and economic woes, thus promoting a cut/discretion approach. George H.W. Bush can be described as “Reagan Light” as he allowed for things like a new Civil Rights Act and the Disabilities Act. This era could be broadly described as “regulatory reform” (Burke, 2000; Rosenbaum & Ugrinsky, 1994). Subsequently, Clinton’s inauguration in 1991 marked a shift in approach via the National Performance Review. From this came the first large-scale legislative initiative at the federal level, the Government Performance and Results Act (GPRA), George W. Bush followed with Performance Assessment Rating Rool (PART), and Obama followed that with the GPRA Modernization Act, colloquially known as just the “modernization act.”

Each example stated here is an attempt by Congress and the Executive to change the way bureaucracies work, with the goal of improving performance. The GPRA, passed in 1993, was based on the findings on the 1991 National Performance Review. Its stated goals were to improve confidence in government by increasing the capacity and competency of the federal bureaucracy through implementing a performance measurement system. It did this by requiring each agency to develop a series of performance goals, creating measures for those goals, and monitoring progress through the tracking of operational data (Congress, 1993). Even though this was based on a large-scale evaluation, subsequent research has unearthed numerous drawbacks of the reform. Beryl Radin (1998) noted that administrators under GPRA had significant difficulty developing clear objectives for programs that could then be tracked by quantitative measures. Further research into the impact of GPRA suggests that employee involvement in the processes of the legislation had little influence on later usage of performance information in the various agencies (Moynihan & Lavertu, 2012).

PART -, developed in 2002 by the George W. Bush Administration and implemented under the Office of Management and Budget, was designed to provide a standardized set of evaluation metrics to give the majority of federally administered programs a score to then be used in programmatic evaluations. The tool consisted of a questionnaire divided into four categories: Purpose, strategic planning, management, and results (Whitehouse, 2008). PART spawned a wide swath of new research into performance measurement, but the results clearly indicate a general lack of success. Research suggested that both program operations and PART itself are particularly

susceptible to political influence. Programs operating in traditionally conservative agencies tended to receive better scores in PART assessments during the Bush administration (Gallo & Lewis, 2012; Lewis, 2010). The nature of the program appeared to influence the scores, as research and design programs like the activities of the National Science Foundation received higher scores than redistribution oriented programs like housing assistance (Greitens & Joaquin, 2010). Finally, PART did not appear to contribute to improving the strategic planning of programs. Goal ambiguity appeared to result in lower performance in the assessments, but the scores were rarely used in planning and design discussions by program managers (Jung, 2013).

Overall, much of the research on legislatively mandated performance systems centers on the notion of “square pegs in round holes,” whereby a central authority develops standards for a decentralized apparatus. Critics argue that the tremendous nuance of government operations presents a major challenge for standardized performance legislation because a one-size fits-all approach would simply result in adopting the language of the reform without really measuring what each individual program does (Gueorguieva et al., 2009; Long & Franklin, 2004; Radin, 2000). One shortcoming of the current literature regarding performance-oriented legislative mandates is that they primarily consider the federal government as the unit of analysis. Additionally, there is little known about legislative arrangements of this type across levels of government. For example, local governments typically implement and use a performance system that is mandated by their state government.

Voluntary Accreditation (in Public Health)

U.S. public health, which is the overall context of this dissertation, presents a unique opportunity to explore another external motivation for the adoption of performance management. Voluntary accreditation has been a growing trend among public health agencies in the U.S. The Public Health Accreditation Board (PHAB) provides a series of organization standards a public health department must meet, such as conducting a community health assessment, having a strategic plan, and importantly for this study, establishing a performance measurement system. As of May 2017, 178 public health departments in the U.S. representing nearly 180 million citizens have achieved accreditation through PHAB (PHAB, 2017). Accreditation aligns with recent focuses in public health practice on “quality improvement,” which is often used in the same vein as “performance management.” PHAB argues that the process of accreditation improves ties to the community and enhances organizational legitimacy and capacity. Scholars have suggested that an implicit argument is that future funding streams may, in some cases, become earmarked for those agencies holding an accreditation, thus providing additional external motivation to achieve this status (Erwin & Brownson, 2016). An understanding of this process is relevant to this study as public health administrators in New Jersey are likely to see the LHR (acronym for what? Defined above?) as a step towards accreditation, which may complicate attempts to draw a link between the mandate and performance usage.

The standards for achieving accreditation are aligned in twelve “domains” or categories of organizational features. Within each of these domains, there are a series of

standards that must be documented and demonstrated as part of the review process. PHAB does not provide strict instructions on how to design internal processes; rather, they provide general criteria, and each applicant must argue how their individual processes meet each standard. For example, under domain 9, one of the standards is to “Use a performance management system to monitor achievement of organizational goals.” This standard does not specify what to measure, or how to measure it; it simply requires the use of performance information in the organizational decision-making process.

Table 1.2 - Public Health Accreditation Domains

Domain	Domain Description
1	Conduct and Disseminate Assessments Focused on Population Health Status and Public Health Issues Facing the Community
2	Investigate Health Problems and Environmental Public Health Hazards to Protect the Community
3	Inform and Educate about Public Health Issues and Functions
4	Engage with the Community to Identify and Address Health Problems
5	Develop Public Health Policies and Plans
6	Enforce Public Health Laws
7	Promote Strategies to Improve Access to Health Care
8	Maintain a Competent Public Health Workforce
9	Evaluate and Continuously Improve Processes, Programs, and Interventions
10	Contribute to and Apply the Evidence Base of Public Health
11	Maintain Administrative and Management Capacity
12	Maintain Capacity to Engage the Public Health Governing Entity

Source: PHAB.org, Accreditation Domains and Standards 1.5

Like many other large national trends in public organizations, PHAB accreditation has generated a significant literature evaluating numerous aspects of the phenomenon. Researchers have found that organizations with existing quality improvement (performance management systems) are more likely to pursue and achieve

accreditation. Additionally, organizations with relatively higher levels of existing capacity (measured by full time equivalents) were more likely to report higher levels of interest in accreditation, suggesting that the pursuit of accreditation was influenced at least somewhat by the likelihood of success rather than implied benefits of the process (Yeager, Ferdinand, Beitsch, & Menachemi, 2015). Other research suggested that financial incentives such as possible future revenue and increased grant-getting ability were among the strongest motivations for pursuing accreditation (Davis, Cannon, Corso, Lenaway, & Baker, 2009).

What is not present in the research, however, is how the accreditation process shapes the way organizations adopt and use performance systems. Studies have suggested that the accreditation process may act as a framework for performance management adoption and could potentially contribute to improved organizational operations, but the structure of performance systems in accredited public health agencies is yet to be explored (Carman & Timsina, 2015; Chen et al., 2015; Madamala, Sellers, Beitsch, Pearsol, & Jarris, 2012).

Determinants of Public Health Organizational Performance

A discussion of how performance in public health agencies must first consider how researchers have historically defined and measured performance in public health. Two methodologies appear commonly throughout the literature. First, surveys investigating agency performance will often employ a performance framework derived

from the 10 Essential Public Health Services¹ as outlined by the Centers for Disease Control and Prevention (CDC). These services are: (1) Monitor health status to identify and solve community health problems, (2) Diagnose and investigate health problems and health hazards in the community, (3) Inform, educate, and empower people about health issues, (4) Mobilize community partnerships and action to identify and solve health problems, (5) Develop policies and plans that support individual and community health efforts, (6) Enforce laws and regulations that protect health and ensure safety, (7) Link people to needed personal health services and assure the provision of health care when otherwise unavailable, (8) Assure competent public and personal health care workforce, (9) Evaluate effectiveness, accessibility, and quality of personal and population-based health services, (10) Research for new insights and innovative solutions to health problems. The degree to which agencies adhere to these recommendations is used as a proxy for performance.

The second common method is either an exact usage or an adaption of the National Public Health Performance Standards (NPHSP) administered by the Association of State and Territorial Health Officers (ASTHO) and the National Association of County and City Health Officers (NAACHO). The NPHSP is again a derivative of the 10 Essential Services, simply with an expanded glossary of questions that attempt to operationalize each essential service. Both of these approaches to measuring performance focus equally on internal and external features of performance.

¹ <https://www.cdc.gov/stltpublichealth/publichealthservices/essentialhealthservices.html>

A consistent finding across the literature is that organizational size, and all of the related features of a larger organization, are one the strongest contributors to higher performance. Numerous studies have noted that health departments serving populations more than 50,000 people often perform better than those serving less than 50,000 (A. S. Handler & Turnock, 1996; Suen, Christenson, Cooper, & Taylor, 1995; Turnock, Handler, & Miller, 1998). The reasons for this are fairly intuitive. With size often comes economies of scale. As characteristics like staff and programmatic diversity expand, these agencies will have a greater capacity to perform these essential services. A higher rate of staff per population can contribute to a greater ability to interact with residents and think innovatively (Freund & Liu, 2000). A greater level of overall capacity means that departments do not spend all of their time handling emergencies and providing basic services; rather, they can dedicate time to expanding service delivery.

Larger jurisdictional size often means larger budgets and indeed more revenue per resident. Jurisdictions with a larger budget relative to the number of residents they serve have been found to allocate more resources to things like staff training, community outreach, and internal problem solving (Mauer, Mason, & Brown, 2004). This stands to reason as critical operations like restaurant inspections hold relatively low weight in typical performance frameworks, but are required services in most jurisdictions. Higher expenditures per capita often correlate with wealthier populations, which in turn contributes to higher attendance at public health education programs, lower mortality rates, and a greater desire by the citizenry for a well-developed public health system

(Mays et al., 2004). The sociodemographic makeup of the community might also be contributing to the finding that health departments that are better able to create partnerships with citizen organizations perform better as well (Zahner & Vandermause, 2003)

However, these characteristics are less related to the typical aspects of an organization that performance management systems attempt to address. Additional research has explored agency characteristics beyond simply the size of the organization and budget. Centralization of authority and the power of an executive, often thought of as serious contributors to performance, have shown mixed-results in public health. Some research suggests that health departments under the auspices of a centralized governing structure or under the supervision of a strong state health apparatus perform better while other research suggests the opposite, that a more autonomous health unit performs better (Mays et al., 2006; Richards et al., 1995).

More concrete results have been found in terms of linking managerial characteristics to organizational performance. Agencies with female leaders have been found to perform better compared to those with male leaders (A. S. Handler & Turnock, 1996). Additionally, a highly educated leadership team that operates in a managerial unit, rather than a single autocratic leadership framework, see positive results in the literature (Lovelace, 2001; Scutchfield, Knight, Kelly, Bhandari, & Vasilescu, 2004). These organizations are also more likely to employ tools like community health assessments to evaluate jurisdictional conditions and design interventions to address performance deficits (Turnock, Handler, Hall, Lenihan, & Vaughn, 1995).

Challenges and Opportunities for Public Health Performance

The primary challenge for public health performance is linking the operational performance of an organization to improved population health (Turnock & Handler, 1997). Much of performance measurement and indeed management consists of linking inputs to outputs to outcomes in service areas which present a rather clear connection between the three (D. N. Ammons & Rivenbark, 2008). For example, if your desired outcome is improved transit vehicle reliability, you can design a series of inputs and outputs that directly address the underlying causes of vehicle unreliability. However, improving population health is a more complex and multi-dimensional issue. Determinants of population health range from availability of food, crime rates and education levels to everything in between.

In an ideal system, the activities undertaken by an agency generate measurable change in the underlying processes being monitored within the performance system. This change should happen within a relatively short period of time, thereby strengthening the causal inference made between the activities and the outcomes. The classic example used is the allocation of police in an area identified as a high-crime location. In a relatively short manner, the occurrence of crime in a localized region can be reduced simply by an increased police presence (Behn, 2014). This process is not the same in public health, however. The strength of an intervention is rarely sufficient to cause immediate change in

the health of a population; therefore the effects of any process or activity are difficult to measure and difficult to report in a performance framework (Aday, Begley, Lairson, & Slater, 1993).

A simple lens through which to view this challenge is the balance of “quality” measures and “quantity” measures of performance. An example of this would be measuring the timeliness and comprehensiveness of inspection services rather than just measuring the number or frequency of inspections (Deroose et al., 2002). Some examples of performance system development in the U.S. may inform attempts to develop quality measures. The state of North Carolina used participant satisfaction surveys to measure the quality of services offered through their Women, Infants, and Children (WIC) program and to guide programmatic changes (Green, Harrison, Henderson, & Lenihan, 1998).

One response to this difficulty has been to focus less on the macro issues in the day-to-day operations of a performance system and instead consider things like operational efficiency, with an assumption that the actions taken by public health professionals contribute to the overall wellbeing of the population (Mays, Halverson, & Miller, 1998). Organizations have begun tracking things like resource expenditure per activity and the time it takes to conduct routine operations. Even though an efficient inspection may not reduce the likelihood of a foodborne illness at that particular

restaurant, as public health agencies are able to perform more inspections per unit of input, the assumption is that overall risk of foodborne illness may indeed decline.

Another challenge faced by public health agencies is the lack of a uniform performance model within the field (A. Handler et al., 2001). In other fields, such as transportation services, sanitation, and others, the “performancestat” model has emerged as a primary vehicle by which agencies track and discuss organizational data (Behn, 2014). The process of designing measures, identifying goals, collecting data, and using that data for organizational learning, however, has yet to rely on standard procedures in public health. There is a need for a strong conceptual framework for what performance means to public organizations and how agencies can link their activities to that notion of performance (Donabedian, 1980).

Chapter 2

Case Study: New Jersey Local Health Report

Program Background

Public health service delivery in New Jersey is unique compared to many states, even other states in the Northeast. A common trend in recent decades has been to adopt or transition to a county-level delivery system with some form of centralized state control over broad planning. However, New Jersey maintains home rule in the provision of public goods. Health departments in New Jersey are organized at the local level, and those local entities may or may not be attached to one single municipality. Some municipalities maintain their own singular health department. Other health departments provide services to several municipalities through a contracting relationship. Still others operate at the county-level. This presents unique opportunities and unique challenges for planning and monitoring health activities. Table 3.1 shows each health department in New Jersey listed in order of full-time equivalents (FTEs). The largest department in the state maintains over 450 staff members, while the smallest is allocated fewer than one FTE by their host municipality.

Table 2.1 – New Jersey Local Health Department Staffing Levels (2015)

Total FTEs (LHD)				
451	27	12.4	8	5
261.125	26	12	7.5	5
170	25	12	7.5	4.5
105	24	11.69	7.5	4.4
103	23.5	11.35	7.5	4
101	22.1	11	7.4	4
91	22	11	7.3	4
77	21.5	10	7.1	4
73	19	10	7	3.7
66	16	9.55	7	3.6
49	15.5	9.5	7	3
48	15.5	9	6.8	3
47	15	9	6.6	3
42.13	15	9	6.5	3
41	15	8.8	6.5	3
41	14	8.63	6.25	2.2
38.5	14	8.5	5	2
29	14	8.1	5	0.2
29	13	8	5	0.2
27.75	12.5	8	5	

Source – 2015 Local Health Report Data

In addition to having a diversity of organizational structures, local health departments in New Jersey provide an expansive array of services and perform a tremendous number of duties. Although there is no single index of every activity conducted by every LHD, the LHR program collects 253 activity-oriented data points, and the vast majority of LHDs offer additional services specific to their jurisdiction. Table 3.2 contains the service areas for which local health departments are required to report in the annual reporting system.

Table 2.2 – Service Areas Reported in the Local Health Report (LHR)

Local Health Report Service Areas	
ANIMAL BITES AND RABIES CONTROL	OTHER ANIMAL CONTROL, LICENSING, VACCINATION, AND/OR SHELTERING
BODY ART, TATTOO, AND PERMANENT COSMETICS SAFETY	POTABLE WELLS AND DRINKING WATER - LOCAL ORDINANCES
CHILDHOOD LEAD POISONING CONTROL	POTABLE WELLS AND DRINKING WATER SAFETY
COMMUNICABLE DISEASE CONTROL	PROPRIETARY CAMPGROUNDS
EMERGENCY PREPAREDNESS AND RESPONSE	PUBLIC CAMPGROUNDS
FULL-TIME HEALTH OFFICER SERVICE	RECREATIONAL BATHING FACILITIES
HEALTH EDUCATION AND PROMOTION	RETAIL FOOD ESTABLISHMENT SAFETY
INDIVIDUALIZED CLINICAL SERVICES	SCHOOL IMMUNIZATION RECORD AUDITS
INQUIRIES, ISSUES, AND COMPLAINT INVESTIGATIONS	TANNING - LOCAL ORDINANCES
KENNELS, PET SHOPS, AND SHELTER/POUND FACILITIES	TANNING FACILITY SAFETY
ONSITE WASTEWATER DISPOSAL SYSTEM SAFETY	YOUTH CAMPS

Source – 2015 Local Health Report

NJ Administrative Code Title 8, Chapter 52 – Public Health Practice Standards of Performance for Local Boards of Health in New Jersey-- was adopted in 2003 and, since then, has been used as a mechanism to prioritize and delineate the local health services that all public health agencies in the state must provide to their residents. With this state mandate, the Office of Local Public Health annually collects a census of public health practice activities and jurisdictional data from each local health department in the state. This program, initially entitled the Local Health Evaluation Report (LHER), was revised and re-designed in 2012 and is now entitled the Local Health Report (LHR). The current program requires each local health department to complete an online survey with data ranging from organizational characteristics (FTEs, budget, municipalities covered) to program data such as the number and frequency of restaurant inspections, number of local clinic visits, the number of educational events organized, and several other general health and environmental activities. The New Jersey Department of Health's (NJDOH) Office of Local Public Health (OLPH) collects this information each year and sends the

raw data to both internal divisions and other state agencies. The intent of the program, from OLPH's perspective, is to collect data from local health departments that can then be used to;

- Identify trends.
- Identify gaps in services.
- Promote public health funding.
- Share data with other state agencies to eliminate duplicate reporting.
- Populate contact databases for local health departments and local boards of health.
- Determine response readiness for both emergencies and non-emergencies.

Methodology

The design and completion of case studies has long been a point of debate in academic circles. There are few points of consensus regarding what the exact definition of a case study is or should be (Gerring, 2004). For the purposes of this dissertation, case-study is taken as meaning a qualitative study of real-world phenomenon that considers the complex nuances of such real-world conditions (Berg, Lune, & Lune, 2004).

Although the case study conducted in this dissertation is primarily aimed at producing exploratory results, numerous authors have promoted the ability of such research designs to highlight causal mechanisms, so long as the researcher meets strenuous methodological standards of rigor (King, Keohane, & Verba, 1994; Remler & Van Ryzin, 2010).

The case study conducted herein utilizes a causal-pathway tracing framework, which as described by Blatter and Haverland (2012) is less concerned with the extent to which one independent variable contributes to changes in a dependent variable than it is with the mechanisms by which a phenomenon occurs and the complex results of variable interaction. Utilizing a pathway tracing approach helps achieve the goal of understanding *how* the two forms of external motivations affect the adoption and use of performance systems (George & Bennett, 2005). This informs each stage of the research design, from developing hypotheses to sampling cases, to designing data collection and analysis protocols, and finally analyzing findings and constructing conclusions. This is distinct from inductive inquiry techniques (see, Grounded Theory) as they are primarily concerned with developing theory from observations (Eisenhardt, 1989). This study pursues the expansion of existing theory by using real-world phenomenon to highlight theoretical implications.

Yin (2013) recommends 5 components of an overall case study research design. These components help frame the construction of the study and organize the pre-data collection efforts. First is the case study question(s), which give a general direction to the inquiry. Next is the proposition of the study. This serves as a qualitative hypothesis and offers a reference point for data analysis. Third is an examination of the unit(s) of analysis, followed by the logic linking the data to the propositions. Finally, the criteria for interpreting findings details both the requirements for data quality as well as the

technique the research will use to organize and synthesize the data into meaningful findings.

Case Study Questions

The nature of research questions asked by qualitative case studies are often fundamentally different than those asked in quantitative studies. In qualitative research, an emphasis is placed on processes and meanings of phenomenon that exist in a value laden world (Denzin, 2008). This study, like many qualitative studies, aims to investigate the experience of the subjects and the social meaning of interactions rather than the measurement of causal relationships between variables. Both the collection and analysis of data in this chapter assume that individuals experience the world through their own constructed context and that many interactions are socially motivated (Crotty, 1998).

Case studies have historically excelled at answering very specific questions lodged in a particular time and place. For example, program evaluations are often completed using a case study design as this methodology is less concerned with generalizing to a large population; rather, it is concerned with precisely illuminating events that are internally relevant to the case itself. This produces high levels of internal validity which can then be used to design meaningful recommendations for programmatic reform (Berg et al., 2004). This study, however, is not a pure program evaluation. Instead, it seeks to achieve a balanced focus on the practical and theoretical implications of the phenomenon. Thus, the style of investigation is convergent design combining

elements of several research styles (Blatter & Haverland, 2012; Eisenhardt, 1989; Yin, 2013).

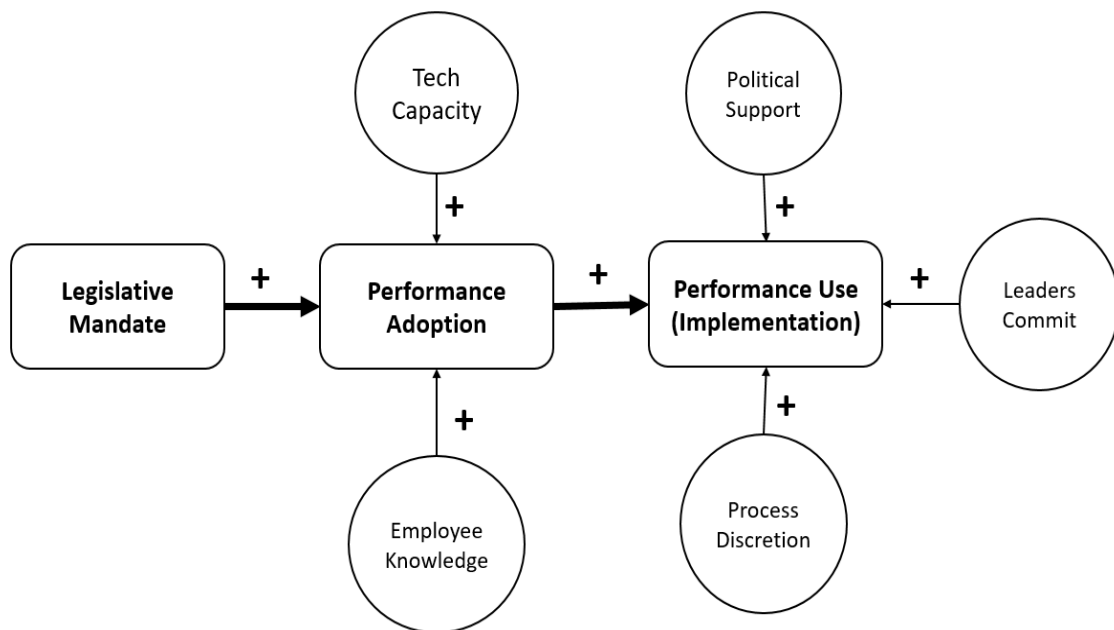
The following research questions posed in this case study reflect the intersection of practice and theory.

Case Study Question 1: How do local health departments respond to mandated performance measurement systems?

Case Study Question 2: How can standardized performance measures aid in the decision making of public health organizations?

Case Study Proposition

Figure 2.1 Proposed Dynamics of Public Health Performance Management Adoption and Use



As indicated in figure 3.1, a proposed indirect relationship between the legislative mandate and actual performance management use exists. Although organizations must adopt a performance measurement regime in order to comply with the mandate, this does not directly result in the actual use of performance management in the organization. Factors such as political support, discretion over process and leadership commitment must also be present in order for adoption to turn into use. Without such organizational characteristics, local health departments will simply comply with the requirements of the mandate, thereby exhibiting symbolic adoption.

The reasoning for this proposition is derived from seminal work in both performance management and public health performance. Standardized systems are likely less able to address the complexities and unique challenges faced by public health agencies when designing performance systems. Further supporting this claim is the lack of concern for organizational culture and leadership within the Local Health Report program. Previous research has strongly argued the need for organizational learning and reform in order to achieve true performance management (Behn, 2014; Moynihan, 2008).

Unit of Analysis

The unit of analysis has been a point of contention within social research and particularly as it relates to defining what exactly is the “case” of a case study. As early case studies took the form of social histories, individuals have long been a common and relatively well defined “case” (Yin, 2013). However, as the use of the case study method

has expanded, the concept of a case has expanded as well. For instance, the response by FEMA during and after Hurricane Katrina hit the Gulf Coast of the U.S. was the case used in a 2009 study by Donald Moynihan (Moynihan, 2009). Other studies utilize programs, individual events, or cultural traditions as the case (Flyvbjerg, 2006). Yin (2013) provides general guidance on how to define the case of a study. “As a general guide, your tentative definition of the unit of analysis (and therefore of the case) is related to the way you have defined your initial research questions” (23).

In this particular study, the research questions aim most pointedly at a program and its effects on organizational operations and decision-making. The program in question, the New Jersey Local Health Report, is then the most appropriate choice for a unit of analysis. Choosing this unit of analysis, and therefore the “case,” is also most complementary to the stated aim of balancing an exploration of theoretical implications with making practical recommendations for reform and programmatic design. Had I chosen an individual health department, or “New Jersey Health Departments” as the unit of analysis, the analysis and findings might have been too specific to the individual contexts of each department, leading to conclusions less appropriate for overall theory building and, indeed, practical recommendations.

Data Type & Logical Link to Proposition

The traditional forms of data qualitative case studies utilize are interviews, observations, and archival documentation. Some authors even argue that the feelings and intuition of the research are a form of data in qualitative research (Yin, 2015). This study deviates only slightly in that it employs a quantitative survey as well as traditional qualitative data to evaluate the case. The benefit of conducting a descriptive survey is that it provides a baseline evaluation of sentiments and judgments of the program that qualitative interviews can then probe for deeper meaning and reason. Mixed-method research can often provide a more robust understanding of a complex issue than a single type of data or methodology (Creswell, 2013). Along with the descriptive survey, two other forms of data are used. First, a series of qualitative interviews, focus groups, and forums are conducted. Second, an analysis of program archive documentation is used to provide further insight.

The link between the data collection method, the criteria for evaluating the data, and the proposition of the study is much less developed in qualitative research than it has historically been in quantitative studies (Yin, 2013). However, as this study aims to explore the experiences of organizations operating within a complex programmatic framework, the mixed-method approach described here is arguably the most appropriate strategy. There is little existing knowledge of this particular phenomenon, thus making a traditional survey less appropriate (Dillman, Smyth, & Christian, 2014). This study

argues that performance management adoption in public health systems is a complex and non-uniform process, thus making a mixed-method qualitative design ideal. A more specific discussion of data analysis is provided in the Data Collection and Analysis Section. No uniform technique for establishing criteria to evaluate data in case study research has been established; therefore, this study design relies on an assumption that the data collection protocols are sufficiently robust that all data collected is of requisite quality and context for analytical purposes (Yin, 2013).

Sampling

Sampling in qualitative research has long been thought to be a simple procedure, due to the inherently smaller number of observations in the study. However, proper attention paid to the sample of the study pays dividends later in the analysis of the data (Miles & Huberman, 1994). The “case” of the case study will be used to set the boundaries of the sample. Clear boundaries are needed as social phenomenon are often time highly complex, interweaving events, and an unfocused sample can lead to information diffusion and lack of clarity during the analysis (Hartley, 2004). To that end, the boundaries of the sample will be the extent to which individuals interact with the program in question. Only those who directly participate in the collection, reporting, analysis, or design of the data will be sampled. This means individuals working for localities, a county and the state department of health will be asked to participate.

In the state of New Jersey, there are roughly 99 local health departments (2015 Local Health Report Data), and only one state department of health with a rather small

office supervising the program. This means the total possible population is small. Employing a random sampling strategy in these conditions may result in rather large biases in the data; therefore a purposive sample will be drawn (Kuzel, 1992). Previous research has established that organizational size is a strong determinant of performance in public health (Erwin, 2008). This combined with the significant variation in the size of local health departments in New Jersey results in *maximum variation* sampling serving as a useful strategy. In this strategy, the sample is meant to derive the most variation in experience across participants. This maximizes useful and new information per participant (Guba & Lincoln, 1989). With relatively fewer observations, the usage of probability sampling may leave out organizations more likely to exhibit important phenomena or characteristics. (Kaplan & Maxwell, 2005).

Table 2.3 – Local Health Department Strata and Final Sample

Size Category	FTE Range	Total Population	Sampled
Very Large	90+	7	3
Large	40 to 90	9	4
Medium	15 to 39	19	7
Small	6 to 14	41	11
Very Small	0 to 5	23	7
Total		99	32

To achieve this purposive sample, five strata based on employee (FTEs) are established. The size categories range from very small organizations consisting of five employees or fewer to very large organizations that employ more than ninety personnel. The contact method is twofold. The first invitation to participate was in partnership with

the New Jersey Department of Health. A webinar describing the purpose of the program evaluation was held and managers from all the local health departments were invited. At the end of this webinar, a call for participation was issued. The second round of contacting relied on direct requests via email. A target of thirty percent participation in each stratum was established. Table 3.3 indicates the size ranges of each stratum and the total population of each, as well as the total number of participants recruited from each. The target of thirty percent participation was achieved in each group, except for the “small” category. Direct recruitment is paired with the voluntary call for participation to avoid any self-selection biases that may result from organizations purely opting-in to the study.

A less strategic sampling scheme is deployed for state-level personnel. This is due to the very small number of individuals directly involved with the program. A total of 3 individuals from state level agencies are represented in this study. Additionally, this study conducted two focus groups involving agencies with interest in the LHR data. Each year, a list of offices is sent the aggregated LHR data to use however they see fit. This distribution list serves as the state-level sampling frame for recruiting participants.

Data Collection and Analysis

Several forms of information are collected from each organization sampled. First, a series of semi-structured interviews is conducted. Next, internal documentation and performance information are reviewed with a self-administered survey being sent out

concurrently. (Yin, 2013). The purpose is to gather relevant information about how organizations utilize performance information in their decision-making, how the mandate influenced their system design, and how the external mandate is perceived with regards to improving the way the organization operates. Preferably, interviewees will have worked at the organization both before, during, and after the design of the performance system, but this is not the case with all those participating. This time horizon varies depending on the organization, particularly in the case of the voluntary accreditation process, as each organization may have adopted the information system at different times.

The questionnaire three main areas. The first addresses the participants thoughts on and experience with the program. Questions are designed to derive the balance between burden and utility. The next category of questions is designed to investigate what the program would look like in an ideal world given the opportunity for local departments to recommend and implement revisions. This is meant to provide realistic and relevant policy reform recommendations as well as assess the extent to which local departments think critically about the program. Third, questions address the process of developing the organization's performance management system. These are meant to derive information regarding how significant of a role the mandate played in the system development processes. One question within this series asks respondents to reflect on the state of performance information use prior to the institutional mandate. This may contribute to counterfactual reasoning, meaning what the organization would have been like without the mandate. This can help strengthen the analysis and conclusions drawn in case study research (Rohlfing, 2012). Additionally, it provides evidence as to whether or

not these organizations have incorporated their information processes in the organizational decision-making framework or are simply complying with their mandate in a symbolic fashion (Moynihan, 2008).

It is clear from research on the subject that the location of an interview should be considered in a larger context than simple convenience. Elwood and Martin (2000) argue that the interview site itself embodies and constitutes multiple scales of spatial relations and meaning, which construct the power and positionality of participants in relation to the people, places, and interactions discussed in the interview. Herzog (2005) suggests that that interview location plays a role in constructing reality, serving simultaneously as both cultural product and producer. Thus, the choice of interview location (who chooses and what place is chosen) is not just a technical matter of convenience and comfort. For these reasons the location of the interview is left to the interviewee.

The interviews are conducted as a semistandardized conversation. This style of interview is often associated with being slightly structured, but not completely replicated, between interviewees. Additionally, questions can be reordered, added, or eliminated during the process of the interview. The type of questions that are most frequently added to these interviews are follow up questions like “can you tell me more about that?” or “how did that make you feel?” (Berg, Lune 2004). Semistandardized interviews allow probing and can result in the development of new questions and areas of exploration, which is precisely what this particular research endeavors requires at this point in time.

The decision to probe or ask follow-up questions is a point of discretion for the interviewer. This decision will be based on the context of the interview. Mainly, how willing is the interviewee to give information. If the interviewee shows signs of disinterest, distrust, or general fatigue, it is best to avoid follow up questions and focus on asking all the questions listed as-is. However, probing and follow-up questions serve an important question as they are opportunities for the interviewer to deviate from the established protocol to derive new and interesting information not previously conceptualized by the interview design (Denzin, 2008).

Data from the interviews is first coded along major thematic categories and then analyzed using direct content analysis (Hsieh & Shannon, 2005). The broad categories of information determined by the survey questionnaire are used as an organizational structure for the coding and grouping of interview data. This same procedure is also used to organize and analyze information from internal documentation. Finally, this material will be used to synthesize overall findings along each information category using a process of triangulation (Berg et al., 2004; Yin, 2013).

In this vein, two modes of comparison are used for data analysis; both *inter-temporal* and *pre-post* comparisons for the various individual units within each case examine what the organization was like before the external influence and how the organization has proceeded since the development of their performance system (Jensen & Rodgers, 2001). *Pattern-matching* is then deployed so that the results from each case can

be compared to patterns identified in the existing research (Yin, 2013). Finally, *process tracing* is used to develop arguments for causality in the observations made and the influence of the external motivation (Tansey, 2007).

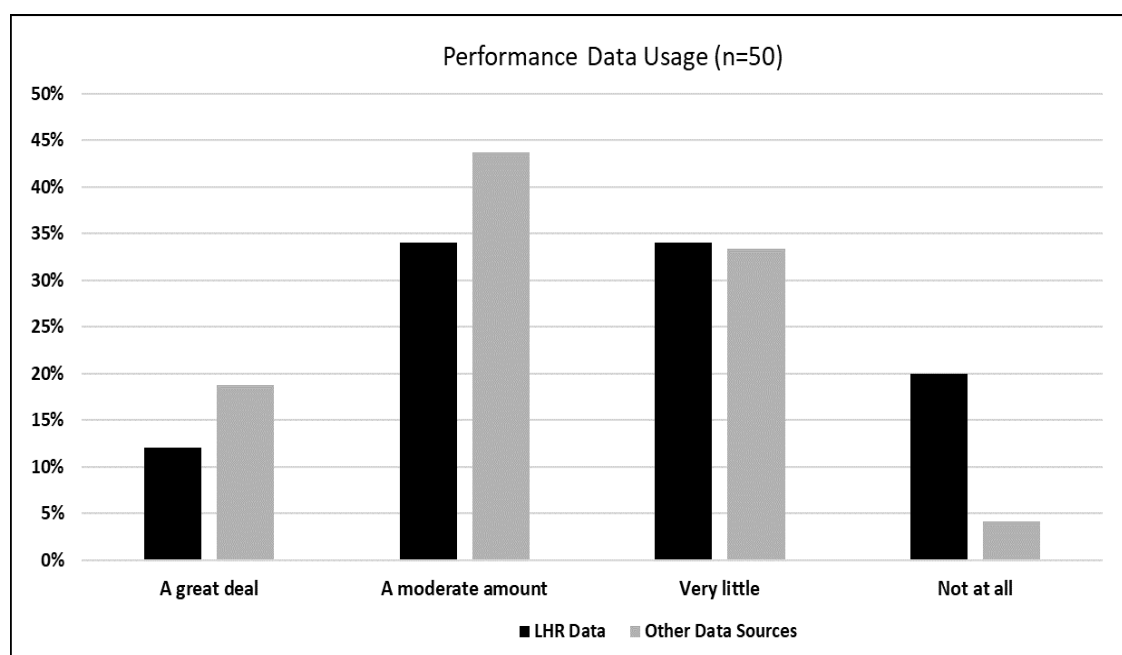
The Case of the New Jersey Local Report

In 1994, the Centers for Disease Control and Prevention (CDC) adopted the 10 Essential Services for Public Health with the intention of outlining the minimum services that every citizen in the U.S. should have access to. Nine years later, the State of New Jersey passed what they called the New Jersey Public Health Practice Standards. These practice standards were an attempt to both codify the CDC's essential services as well as to expand the expectations of service for public health agencies in the state. Two years later, in 2005, the New Jersey Department of Health Office of Local Public Health (OLPH) created the Local Health Evaluation Report (LHER). The LHER was a paper-based survey sent to local health departments on an annual basis and served two primary purposes. The first was to ensure local health departments in the state complied with chapter fifty-two requirements, and the second was to centralize public health operational data collection to better guide the allocation of training and technical support across health agencies.

In 2010, a programmatic review was conducted that focused on creating an electronic platform for local health departments to use when filling out the survey, as

well as revising the data requested to better align with state and local health performance priorities. The new program, the Local Health Report, launched online in 2011 and has since collected six years of operations data from health departments across the state. It is at this point that this case study begins. In mid-2016, a survey was sent to the directors of the various local health departments (referred to as local health officers) asking them about their experience with the LHR program with a specific interest in how they collect and use the data for internal decision-making.

Figure 2.2 – To What Extent Do You Collect and Use Data to Inform Organizational Decisions



Source – 2016 Survey of NJ Local Health Officers (Population: 92, Overall Response: 61)

As you can see in Figure 3.1, there is a rather significant divergence in the sources of data used for performance management purposes. Almost all health departments

surveys used at least some data to inform their decision-making. The major difference, though, is the extent to which they use LHR data in this process. Roughly 20% of respondents reported that they do not use LHR data at all for organizational purposes while less than 5% reported they do not use data of any sort. This lack of usage, as well as the other responses to the survey which will be highlighted in later sections, informed the questions asked of health departments in subsequent qualitative interviews. These interviews were used to identify patterns of behavior in health professionals as well as organizational characteristics that either hinder or encourage the use of this information.

Those who do use the Local Health Report data for purposes other than fulfilling their statutory requirements often use it for very rudimentary organizational purposes, rather than strategic operational evaluations. For example, when survey respondents were asked to describe the ways in which they use LHR data, outside of their state reporting requirements, the most common response was for reporting to their local governing body. Rather than design their own annual report to their municipal, county, and board of health leaders, health departments simply forward the annual LHR report to these groups. As an overall statement regarding the Local Health Report as a vehicle for organizational improvement, it appears to fall into the trap of measurement for the sake measurement and does not exhibit the traits of a true management tool (Julnes & Holzer, 2001). In addition, in the same survey, public health managers were asked how valuable the overall program is to their organizations (if they had enough time to fully utilize the data) and 24% responded that it is not valuable at all. However, when posed with the opportunity to develop a series of programmatic reforms, that number dropped to 8%, suggesting that there is indeed potential for the LHR to extend beyond just a reporting tool.

From Ad Hoc to PerformanceStat – A Picture of Performance in New Jersey Public Health

Research on the nature of performance management in organizations suggests an intense variation in the format and structure of these systems (D. N. Ammons & Rivenbark, 2008; Behn, 2014; Moynihan, 2008). This is certainly the case among public health departments in the state of New Jersey. Across departments, the regularity, structure, and even language of performance vary significantly, a reflection of leadership, culture, and technology adoption.

An interesting divergence between the majority of performance management-oriented organizations and public health agencies is the language used to describe data-informed decision-making. For the most part, governments around the country have adopted the term “performance,” with either “measurement” or “management” following. This term simply means setting targets for service delivery and using operational data to monitor those targets over time (Behn, 2014). However, in public health, a different phrase is used to describe these activities. The majority of individuals in the practice of public health refer to these efforts as “quality improvement,” or QI for short. This term, used in the place of “performance management” is a far broader categorization of activities and encompasses not only the collection of operational data for target setting but also all of the work completed in the name of improving the way the organization serves the public. This includes strategic planning, employee training and development, and community engagement efforts.

In some instances, there is a distinction between “quality improvement” and “performance,” with performance existing as a sub-component of quality improvement. For example, in a 2008 self-assessment for the purposes of accreditation, Montgomery Township provides the following statement of purpose under their “Quality Improvement Process.”

“The purpose of this program was to improve community partnerships with our clinical service providers to 1) improve data collection to evaluate program effectiveness, 2) expand partnerships to respond to identified needs in the community, and 3) develop a baseline of data that can be used to identify emerging trends.”²

In this context, it seems that quality represents the ends, and one of the means by which organizations can achieve those ends is through performance measurement. This supports the previous research into challenges for performance management overall in public health, specifically the need to link inputs to outputs to outcomes (A. Handler et al., 2001). If improved service quality is the goal, organizations are forced to address the ambiguities of service over efficiency head-on, which present issues for many, as is discussed in a future section. It appears that differences in language are not simply semantic variations; rather, they represent a tangible departure in philosophy.

² Accreditation Preparation & Quality Improvement Demonstration Sites Project – Final Report, Prepared for NAACHO by the Montgomery Township Health Department, NJ. November, 2008

The process of performance management differs between organizations in meaningful ways as well. A common trait of smaller agencies is a more ad hoc version of performance. This is most common when employees work in close quarters with a relatively small number of FTEs in the department. This format lacks the formality of more structures systems, however, appears to further the same interests of a more robust strategy.

“Our performance system is me turning around in my chair and talking to (coworker) about a problem that I see. We’re so small that we don’t really need to schedule these big meetings to go over the month’s data.”

This approach is certainly less resource intensive and may indeed be useful at addressing issues but lacks regularity which may lead to an overall reduction in focus and inconsistent goal setting. Bob Behn (2008) describes the performance meeting as a central pillar of a well-developed performance system. This regular, integrated meeting of everyone involved in a particular organizational target is a way for individuals to frequently discuss progress in key strategic areas and crystalize the priorities of the organization. It is also a vehicle for rewarding good work and reproaching underperformance.

This approach, often referred to as PerformanceStat, does appear in other health departments across the state. Some have adopted an internal system that operates independently from the rest of their governmental unit. This is often the case in large county-administered health departments that perform enough services and expend enough

resources to justify their own arrangement. This is also the approach the state department of health is pursuing for their performance efforts. Other agencies adopted an integrated approach that includes health leadership in the overall performance discussions. In this arrangement, health goals share time and priority allocation with other service areas. Even though this may result in the de-prioritization of public health goals, it allows for greater communication between departments that may not occur in an independent performance forum. To illustrate this point, during one performance meeting at a large agency a discussion took place regarding vehicle utilization and the slow turn-time for repairs. Leadership probed the maintenance team for the reasons behind the poor performance. A few moments into the discussion, an employee from administrative services stood up and explained that a non-optimal purchasing process may be contributing to the issue. Had this meeting only included one department, this exchange and causal mechanism may not have been discovered, highlighting an advantage of integrated performance systems.

Organizational Character and the Use of Performance Information

Analysis of interview data suggests that the nature of the organization, both in terms of physical characteristics and organizational make-up, heavily influence the way health agencies respond to this mandated program as well as how they fundamentally collect and use performance information. Differences in size, distribution of authority,

and the location of the health department within the larger governmental organization all appear to influence how the local health report is perceived and indeed how they use the program's data to guide decisions.

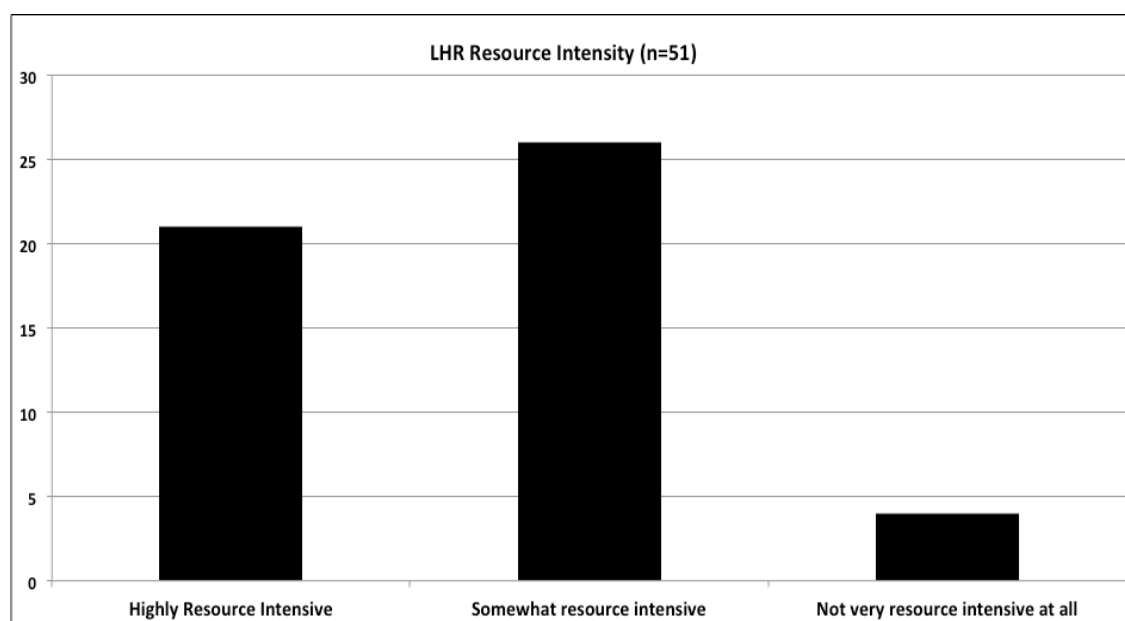
Previous research on the performance of organizations in a public health context has suggested size is a significant contributor to organizational performance (Mays et al., 2006). This study of New Jersey local health departments largely confirms that claim. Size, though, has several dimensions and intersects with performance at numerous locations. The initial meaning of size refers to the number of employees working at the organization. That number, at least in the case of these health agencies, is a fairly strong proxy for capacity. As the number of employees at an organization grows, so too does the ability of the agency to spend time analyzing and discussing the data rather than expending all resources in the collection of the data. In smaller organizations, particularly those with fewer than five full time equivalents, the burden of data collection is spread amongst a small number of individuals who must perform their normal duties in addition to these efforts.

“I have to wear a lot of different hats here, seeing as we are only three total employees. Even though I’m the health officer (manager), I am also the inspector as well as the policy advisor to the board. It usually takes me two or three months to finish the LHR each year because I have my actual job to do.” (Individual Interview, 2016)

A recent paper by Holzer, Ballard, Kim, Peng, and Deat (2017) identified a phenomenon they describe as the resource-performance “paradox.” (7) Public

organizations have been enamored by performance-related success stories, and many have made attempts to adopt this managerial approach. However, many do not realize that a certain level of resource devoted to the process of performance management itself is required. Activities like collection of data, developing a reporting framework, writing and disseminating regular reports and many others all take time. In many cases, individuals who already have full-time obligations are tasked with the responsibilities of maintaining the performance efforts, which can take away from their ability to do their regular jobs effectively. Therein lies the paradox. In the effort to do more with less, some organizations have adopted a system (performance management) that results in doing less with the same. Figure 2.3 shows the perceptions of department leaders regarding the resource burden the local health report program places on their organizations. Over 90% of respondents indicated that the program was at least somewhat resource intensive, with 41% indicating that it is highly resource intensive.

Figure 2.3 – Health Officer (Manager) Perceptions of LHR Resource Intensity



Source – 2016 Survey of NJ Local Health Officers (Population: 92, Overall Response: 61)

Even in mid-sized organizations, this resource burden was pronounced if the local health report was misaligned with their other performance measurement and management efforts. Some health departments had developed their own data usage programs that existed outside the local health report. These agencies have established, to varying degrees of regularity, a performance management framework catering to their organizational priorities. In many of these cases, the Local Health Report saw little to no use in these systems as the data was not relevant to the needs of their own performance efforts.

“For a lot of reasons, we don’t really use the LHR data in our own (performance management) stuff. We have tried to focus on the priorities set by the CHA (Community Health Assessment) we completed a few years ago so we have had to collect different data than the LHR.” (Individual Interview, 2016)

“We don’t use much LHR data for our (performance management) work. Some of it helps but we have to either add to it or write in some narrative to give it more context.”

(Individual Interview, 2017)

Although slightly less pronounced, this resource-driven paradox still exists within these organizations. Although those assigned to manning their internal performance efforts are often those who complete the LHR data collection, they may also see these efforts as wasted and not contributing to their own goals. This is exacerbated by a misalignment of goals between the local agencies and the state authorities, which will be covered more thoroughly in a later section. Even an organization’s systematized performance monitoring system in place does not guarantee usage of LHR data in this case. The lack of excess time and resources in the very small local health departments acts as a complete barrier to data utilization. In the slightly larger departments with currently operating performance systems, only when the LHR served as the genesis of their performance efforts do we see active utilization of the data.

“A few years ago, we changed our internal data collection format to match the annual LHR report. This way I can just copy and paste the info into the LHR each January and I don’t have to waste a bunch of time rearranging my own data to fit their template”(interviewee was asked about their usage of LHR data in their performance system)... “Now our (performance management) work is heavily dependent on LHR data, just because we aligned our data collection with the LHR....We have to add more information and some narrative to it to make it meaningful but we use LHR data a lot.”

(Individual Interview, 2016)

In the case of smaller and mid-sized health departments, the key event that acts as a catalyst for LHR data usage is the adjustment of regular organizational data collection to match the program's template. This results in the LHR serving as a basis for performance management. However, no departments were identified that used LHR data as-is without adding additional data or providing extra narrative to the findings. The lack of time and resources available for LHR completion and the subsequent burden placed on these organizations serves as a strong moderator of their views on the potential value of the program. They do not have enough time either during or after reporting to think about how the data might be valuable.

On the other end of the size spectrum, a very different result was seen. In every large organization interviewed, performance management activities were being conducted to some extent. In these agencies, the staffing levels are sufficient to distribute the work of collecting and reporting LHR data across several individuals. Most large health departments are broken down into service-centric subgroups, often referred to as divisions. This creates greater economies of scale as each division is then made responsible for inputting data from their activities.

"I have my team leads fill out the LHR for each of their areas. At the end, I only have to review their work and sign off on the report before it goes to the state." (Individual Interview, 2016)

“We have a few people in the office that help with overall data collection and they’re usually the ones filling out the LHR. They have around 90% of the data on-hand anyways so it’s not too big of a deal.” (Individual Interview, 2016)

“In the past we’ve used interns to help out with the LHR and they usually do a good job. I try not to have our full-time folks spend a lot of time on that part of the work.”
(Individual Interview, 2017)

In these instances, the leaders of the organization are able to delegate data collection responsibilities across their staff and spend more time discussing the performance implications of the data. This mirrors a more traditional approach to performance management whereby a hierarchy exists that produces data to be used by managers to make decisions (Behn, 2014).

With size comes another form of capacity. Larger organizations are much more likely to develop technical capacities which enhance their ability to not only collect but use the information in the LHR. Research into the development of performance systems suggests that technical capacity manifests itself in several ways (Berman & Wang, 2000). First, organizations that have the ability to link their data conceptually to their organizational goals are more likely to actively use performance management. Second, information technology systems can reduce the burden of data collection and allow more intellectual time spent on analyzing the data for organizational decisions.

This study provides strong support for such claims. Information technology and the technical ability to align data with programmatic goals act as complementing phenomena. Large local health departments are much more likely to implement an enterprise level data management system. This is commonly either a turnkey software solution from a private developer or a reporting system overlaid onto a database service like SQL or Oracle. These systems allow for real-time access to information required by the LHR as well as their performance management efforts. In the more advanced arrangements, employees performing inspections or licensing activities are able to complete their work on a tablet computer which automatically syncs with their data warehouse. These types of designs can dramatically reduce the time needed to organize data during the annual reporting period. This reduction in data collection burden allows organizations to spend more time thinking conceptually about the data collected via the LHR, thus creating complementary interaction.

“I used to have our inspectors tabulate their annual activities for the LHR but we just got tablets for them to use in the field. This year we’ll be able to just pull a report from the new software and fill out the LHR.” (Individual Interview, 2016)

Another critical organizational characteristic for the integration of this program into performance discussions is the extent to which the health department can make programmatic decisions outside of the direct control of the overall government within which the department is situated. This can also be considered decisional autonomy, of diffuse authority (D. N. Ammons, 2004). This is when those collecting and interpreting performance information have the ability to make organizational decisions with that

information. In a traditional hierarchy, information flows up the organizational structure until it reaches a sufficiently high level to where the viewing individual can guide policy. However, in successful performance-oriented organizations, managers and even line staff are able, with appropriate accountability, to adjust strategies to the way they work (D. N. Ammons, 2002).

This decisional autonomy, like capacity, is heavily dependent upon the size of the organization. In the case of small departments, the role of the manager is greatly reduced. They will often act as both the health officer (manager) and another role such as a nurse educator or an inspector. In these arrangements, the strategic planning for the organizational necessarily takes place either in the city manager/mayors office or at the council level. This is also related to the position of the health department within the larger governmental structure. As the size of the health department grows, more decisions regarding the way it operates are made by the internal leadership team, instead of the larger government. A larger unit appears to correspond with the organizational view that the health department is somewhat autonomous, and thereby granted decisional autonomy by the chief executive.

Some of the most successful performance management systems observed around the U.S. take the form of what is sometimes referred to as “AgencyStat.” This is where one specialized department, like a department of sanitation or transportation, develops and maintains a series of performance-oriented reforms separately from the overall

organization (Behn, 2014). This allows for more specialization in the discussions of performance. Even though an integrated performance culture has its advantages, if the regular performance meeting is used to review targets for each department, less individualized attention is paid to the various sub-units.

In the example of very large health agencies in New Jersey, many of them have adopted their own performance management schemes. This, combined with greater decisional autonomy, makes the information collected in the LHR program more valuable as there is a clear mechanism for using them in reform of programmatic operations. On the other hand, there are several examples of health departments within smaller governments that share a performance system with the rest of the organization. For many reasons, which will be discussed in a later section, public health specific targets and priorities are deprioritized relative to other governmental functions.

This research clearly illustrates the power of organizational size and structure for the value placed on the LHR program and, indeed, for the overall adoption and use of performance management. The most intuitive finding is that larger health departments perform a larger volume of activities, thereby creating more opportunities for efficiency gains (i.e. more low hanging fruit in large agencies). Economic research suggests that the demand for production efficiency in smaller firms is dramatically higher than in larger firms due to more pronounced resource scarcity (Wolff & Pett, 2006). This appears to be the same for public health agencies in this study as there is a structural demand for maximum efficiency in very small organizations. Secondly, size allows for the distribution of performance-related responsibilities across several staff. Additionally,

access to greater technology in large agencies further reduces staff-time needed to collect data and increases time available to use operational data for strategic decision-making. Finally, greater decision-making autonomy has a positive influence on the use of performance information and, thereby, the value placed on the LHR program.

The Role of Organizational Leadership

The previous section provides an examination of how size, or lack thereof, can pose systematic challenges to public health. However, one critical variable was found to moderate these deleterious effects and expand the usage of performance information across all types of public health agencies. In many public health organizations, department leaders are known as health officers. Typically, they serve as both the managerial arm of the unit as well as the external face of the health department. They interact with citizens, their advising board of health, and the elected leadership of the government. The health officer is often tasked with translating the desires of elected officials into practice and educating those elected officials on complex health topics.

Health officers interested in organizational change and the traditional tenants of performance operationalize these desires in several ways. The first, as displayed by several smaller agencies in this study, is the redesign of the organizational data collection apparatus to match the template set out by the LHR program. As with many process reforms, this task can be time consuming and demonstrates a strong conviction by the

leader to the program.

“We’re still completing our work to fully transition to the LHR template of data collection. Moving forward, we’re using their (the LHR program) format but it will take a long time to get all of our historic data transferred. That’s a manual process but we need it to evaluate our trends.” Individual interview, 2016)

Another way a health officer promotes the usage of performance data in their organization is through an accreditation from the Public Health Accreditation Board (PHAB). The decision to pursue this accreditation is heavily dependent upon the health officer, both in terms of evaluating the feasibility of the process as well as driving the rest of the organization to see the value. PHAB accreditation involves several steps, all requiring significant investments of time and resources. A health department must show that they comply with a series of twelve general domains of organizational excellence. Few, if any, public health departments meet these requirements at the point of initial application. Instead, these agencies must reform processes and programs pertinent to their service provision to meet the standards set by the accrediting agency.

Many of the required standards for PHAB accreditation mirror what we commonly think of as traits of an organization with a transformational leader at the helm. They must actively engage all internal and external stakeholders to drive service delivery. Additionally, and important to the notion of performance, the organization must

demonstrate that it is dedicated to continuous improvement. Under this “domain,” the health agency must document the use of a performance management system to monitor operational efficiency, effectiveness, and quality. The health officer must show that they are developing the skills of employees with regards to performance management techniques and have a regular mechanism to discuss operational data with various key stakeholders.

“PHAB has been a pretty arduous process for us as we’ve needed to adopt quite a few new practices. I’ve been working with our council and health board to create a performance system and we have a basic scheme set.” (Individual interview, 2016)

(Talking about PHAB accreditation efforts) “It’s taken some convincing to get my staff on board with performance. A lot of people just see it as more work at the moment but we’re trying to make it meaningful.” (Individual interview, 2016)

“I was always interested in (quality improvement) but PHAB seems to be a good tool to engrain those values into everyone else. Even if nothing comes of accreditation, it’s still been a good exercise.” (Individual Interview, 2017)

PHAB appears to be a tool that leaders can use to leverage their own personal desires for organizational change. Some may not have been able to convince employees to go through this type of internal evaluation process on their own, but the potential benefits of being accredited appear to provide enough motivation for organizations to begin a reformation process.

The way in which health officers and other organizational leaders create momentum for LHR data usage and performance management in general is quite varied. In the most well-known examples of performance management in government, CompStat in New York City and CitiStat in Baltimore, the entire system hinged on the dedication of the executive leader. In the case of CompStat, that was William Bratton and in the case of CitiStat, that was Martin O'Malley. The executive had to force the change upon the organization in order to break a cycle of status quo operations. Without the threat of sanctions by the leader of the organization, these efforts would have failed (Behn, 2007, 2014). However, in other examples, the leaders took a more cooperative approach and simply fostered latent desires for improvement that existed within the organization (Elms & Wogan, 2016).

In the case of New Jersey local health departments, examples of both approaches exist. In several instances, a relatively new health officer was at the organization. In larger agencies, this appeared to correspond with the election of a new political head. These health officers seemed to be fighting against the “old way” of doing things. Given the existence of entrenched practices and culture, these leaders responded by adopting a more traditional approach to executive championing. Performance management, and value for the LHR program were adopted by decree. In these agencies, leaders faced higher levels of employee resistance to reform.

“It’s been hard to change how things are done here. People are comfortable with doing things like they always have. I’m really interested in using more data and I’m trying to

make everyone else see the value.” (Individual Interview, 2016)

“Our new (elected leader) is really pushing for more efficiency in what we do and I’m trying to achieve that here. I used to work for (city that has used performance management) and that’s my background. I’m creating that here with the help of (elected official).” (Individual Interview, 2016)

In other organizations, a far more collaborative approach is taken when considering organizational change. Even relatively larger organizations that offer far more services and have more moving parts than the very small agencies can display characteristics of a learning-organization. This is likely, to at least a certain extent, due to the background of the workforce and the priorities of the governing bodies. In many jurisdictions, the council and/or board or health have prioritized things like maintaining a current community health assessment and creating a regular dialogue with external stakeholders regarding service offerings and delivery. This necessarily creates demand for labor with the competencies required for tracking performance and analyzing community health assessment data, resulting in greater numbers of epidemiologists and health educators. These two positions, among others, are well suited for a performance-oriented organization. Epidemiology requires highly refined analytical skills and data competency, health educators are often tasked with fostering an interactive dialogue with different stakeholders, and they both require a strong ability to communicate information to varying groups.

“Our epi’s (epidemiologists) are all really data savvy and we work with them on community health evaluations and disease trends all the time so those parts of the PHAB requirements come really easy to us.”

It’s clear from this study that organizational leadership plays a critical role in both the utilization of LHR data as well as the overall implementation of performance management practices. However, leadership in this case is not the same across agencies. There is not a single approach that health officers must take to encourage reform and programmatic adoption. Rather, those at the top of the organization need to evaluate and understand the existing context within which this program exists. If a health department is marked by an entrenched culture with little appetite for change, perhaps a more heavy-handed approach is necessary. Alternatively, in organizations where employees are sympathetic to new techniques, then a more collaborative style of leadership appears to be most productive. Behn (2001) describes this approach as “360 degree accountability” where questions can be asked of anyone by anyone and accountability is reciprocal.

Challenges to Performance Use in Public Health

As reported in the previous chapter, public health agencies face many unique challenges in their efforts to adopt and use performance management. The same can indeed be said for health departments in the state of New Jersey. Many of these challenges overlap with previous research; however, several new findings are described in this section. Although a fairly robust examination of organizational characteristics and

their interaction with performance management was provided earlier, this section focuses on more conceptual issues faced by health professionals.

In Public Health, the very definition of “performance” lacks the firm conceptual foundation that exists in other service areas. In social research, some of the first steps for conducting an investigation are to conceptualize the phenomenon of interest and then operationalize it into a real-work data point that can be quantified and observed (Remler & Van Ryzin, 2010). In an area such as transportation, this is relatively simple. Consider the concept of service reliability. On its face, the concept of reliability may seem rather vague, but when placed in the context of transportation services it become much clearer. The Cleveland Regional Transit Authority (CRTA), through its “TransitStat” program, has developed a rather robust measure of service reliability. The primary indicator of vehicle reliability is the number of miles between service interruptions. This is then followed by a series of predictive measures such as the percent of vehicles receiving regular preventative maintenance by the scheduled due date.³

In public health, defining what it means to be a high-performance organization is considerably more difficult. The desire to improve population health is commonly found in the mission statement of public health departments. It is immediately clear that population health is substantially more complex than vehicle reliability. Thus, creating a

³ CRTA TransitStat Performance Management Report, 2013 - <http://www.riderta.com/sites/default/files/pdf/budget/2013/2-2-PerformanceManagement.pdf>

performance metric for population health can be an almost impossible task for some agencies.

“In an ideal world we’d be able to say ‘this is the health level of our community over time’ and create a database that let’s us track that. The problem is our community is so diverse and people disagree on what overall health is and what type of health indicators we should prioritize.” (Individual Interview, 2016)

“The LRH really needs to track outcome measures. Right now, it’s basically bean counting. It’s nice to know how many inspections were done, but we need to know what the effect of our efforts are on health.” (Individual Interview, 2017)

As is often the case, each health department established its own definition of health through what is called a “community health assessment.” This is a process whereby the health department conducts a jurisdiction-wide evaluation of various public health conditions. These can include data from statistical agencies on area morbidity to reviews of all the recreational and fitness activities available to citizens. These data are then compiled and an overall picture of community well-being is created. Naturally, the results of these evaluations are highly specific to the jurisdiction. This creates large inconsistencies across departments with regard to defining population health.

Some progress in this area is being made, however. The State of New Jersey conducts its own state health assessment and sets targets for health across the state. This overall effort is called “Healthy New Jersey,” with the most recent iteration being for the

year 2020. This report provides population health data in a relatively user-friendly format for local and county health departments to use in their own health improvement efforts.

In addition to acting as an information resource, a secondary goal of Health New Jersey is to increase consistency of health prioritization across agencies in the state. This report prioritizes five major health categories; (1) Access to Primary Care, (2) Birth Outcomes, (3) Childhood Immunization, (4) Heart Disease, (5) Obesity.⁴ Few local health departments have adopted these priorities wholesale, but it has led to increases in the uniformity of outcome definitions.

This contributes to one of the primary barriers to the Local Health Report system acting as a statewide performance management tool for local health agencies. New Jersey is a tremendously diverse state and this diversity is reflected in the community health assessments provided by health departments. Given the standardized nature of the LHR data collection instrument, there is a strong sentiment that it does not fit with the priorities and preferences of the individual health jurisdictions. Participants noted that it both asked questions about services not provided by a particular health department and at the same time it lacked comprehensiveness with some health departments.

“The big problem with the LHR is that it doesn’t really measure what we do. We end up leaving a lot of the sections blank.” (Individual Interview, 2016)

⁴ Health New Jersey 2020 - http://www.state.nj.us/health/chs/hnj2020/ship2012_2015.shtml

“The things that we’re most excited about aren’t captured in the LHR. The special programs that are specific to our community are points of pride that we’d like to share with other departments, but the LHR isn’t a great tool to do that.”

With higher service complexity comes challenges to how public health departments communicate the results of their activities. A fundamental limitation to the Local Health Report is that it lacks context. That is, it does not provide any built in rationale or reasoning behind why an organization is performing at certain levels. This is true of many data reporting systems, but the issue appears to be more pronounced in the case of public health primarily because their activities are so heavily influenced by forces outside of their control. Major external influences of both population health and access to care are things like federal and state healthcare policy changes, rapid changes in the profile of drug addiction, and fluctuations in the viral profile of illnesses.

The Affordable Care Act has caused significant change in the service delivery of local health departments, thus creating a need for additional explanations in any presentation of operational metrics to an external stakeholder groups. A vivid example of this came from a medium-sized health department that offered a relatively robust series of direct health services. This was one of the last remaining local health departments in the state that offered clinical and dental services directly out of the department. Each year, they use the LHR data to report to their governing body regarding all of their activities. In recent years, there has been a precipitous decline in the number of

constituents seeking care at the department's clinic. Without additional context, an external evaluator may conclude that the agency is not doing enough to promote their services, and therefore they are underperforming. However, those who were most likely to receive insurance under the Affordable Care Act were also one of the most likely groups to seek treatment through the local health department. This additional context is crucial for making an accurate assessment of the LHR data, although there is no uniform way of providing that context to the report.

“We almost always have to either add additional data or our own narrative to the LHR report to make it relevant. Otherwise it's just numbers on a paper that don't make much sense to someone who doesn't know the ins and outs of what we do.” (Individual Interview, 2016)

Public Health is a highly dynamic field of public service. It needs to react to rapidly changing population health concerns and policy dynamics. The recent and rather rapid rise in opioid addiction is an example of this. Local health departments have had to make significant changes to their outreach and prevention efforts in an attempt to stem the rise in opioid overdoses; however, in order to make changes to the LHR data, there is a rather time-consuming process and review of statutory requirements. The same is true for other diseases such as the flu. Efforts to mitigate the spread of the flu change every year depending on the nature of the disease. The LHR relies on stagnant service delivery styles in order to collect longitudinal data; however, the activities of public health professionals necessarily change with the needs of the public. Performance management systems are best when they are nimble and can adjust targets in real-time to match

organizational priorities (Behn, 2014). The LHR, however, is a state-wide policy that takes times to evolve, thus reducing its overall relevance.

The final challenge of note that arose in this study is a pronounced feeling that both internal and external stakeholders lack a firm understanding of what, in fact, public health departments do. Many of the departments that use the LHR as a reporting tool for their governing bodies get little to no feedback, which many feel results from a lack of understanding and interest in the importance of public health activities. This can impede efforts to fully implement performance management, particularly in organizations which use an integrated performance management style that includes members from all the departments in a unified discussion. Public health professionals note that the performance discussions often focus on the more traditional service areas such as transportation and policing, possibly due to the conceptual clarity in setting targets for those areas. This has the effect of de-prioritizing public health objectives, thus reducing resources and time spent on improving the operations of health departments. There appears to be a cycle of neglect in some organizations. Organizational leaders have less of an understanding of public health activities, which leads them to focus more time and efforts on other service areas. This results in them having even less of an understanding of public health activities, thereby focusing even more on other service areas.

State and Local Relations - The Need for a Cooperative Dialogue

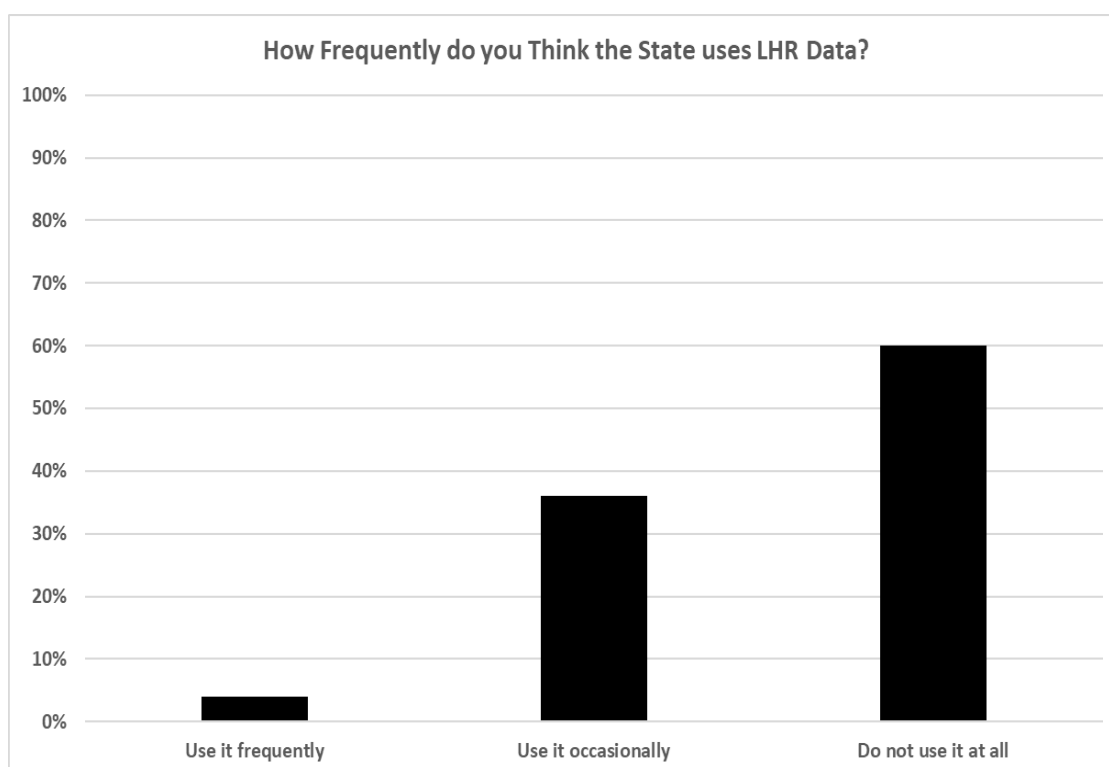
The structure of the Local Health Report program is what is commonly referred to as state-supervised, locally administered. This means that the state department of health oversees the program while the local health departments execute the data collection components. Each year, the state department of health sends out a series of notifications to local health representatives indicating a timeframe for data collection, which is typically January through March of the following year. Then, the state provides ongoing technical assistance for filling out the annual data collection instrument. Local health departments are tasked with aggregating, validating, and formatting all of their operational data to fit the state template. Once the final data is submitted, the state will create an aggregate data file and distribute it to various state-level agencies and offices for them to use however they choose.

Sub-national units of government are well versed in the area of regulatory mandates, most of which are either totally or partially unfunded by the mandating organization (Wright, 1978). A fairly common mechanism for regulatory growth with increasing expenditures is to pass along the cost of programmatic administration to a lower level of government. The Reagan presidency saw a major effort towards regulatory reduction at the federal level which inevitably led to more responsibility passed to state and local authorities (T. J. Conlan, 1991).

As discussed earlier, the majority of the administrative burden falls on local departments, and overall they see a relatively small amount of benefit from the program.

As expressed in the purposes of the LHR program, the data is meant to assist state and local health stakeholders in identifying trends, focusing on gaps in services, promoting public health funding, sharing data with other state agencies, populating contact databases, and determining response readiness. For many of these items, an overseeing agency with access to each individual department's historic data is the only entity in position to perform the desired analysis. This means that much of the analysis and communication burden falls on the supervising entity, which in this case is the state department of health. Many of the local stakeholders realize this and express a general frustration with the lack of reciprocal communication from the state.

Figure 2.4 – Health Officer (Manager) Perceptions of State LHR Utilization



Source – 2016 Survey of NJ Local Health Officers (Population: 92, Overall Response: 61)

Figure 2.4 indicates the extent to which local health managers feel the state utilizes the Local Health Report program data for any purpose. Some 60% of respondents report that the state does not use the data at all. This has contributed to the overall lack of enthusiasm around the LHR and a sense that the program is an unnecessary drain on financial and personnel resources. In the past, the state has made attempts to communicate the purpose and value of the program to participants with little effect. One event was mentioned by numerous participants that provided clear insights into the current dynamic between the state and local entities:

“Years ago the state organized a meeting with local health officers to talk about the LHR. This was when it was done on a paper survey. We asked the state rep what the state does with the data after they collect it and the response was ‘we basically put it in a box’.”

This event, referenced by several local departments, seemed to create a rather strong path dependency for local perceptions of the program. Even during this reform effort, there was little confidence that much benefit will come from attempts to improve the LHR. This assessment of state data use is not entirely accurate, though. Some level of state programmatic data was found. Each year, once the local health data is collected and compiled by the supervising office, the data tables are sent to a distribution list of health offices as well as other state agencies. One of the members of the distribution list utilizes the LHR data quite frequently.

“One of our most common tasks here at (name of office) is to (answer questions from the media and public about a particular activity involving environmental monitoring). Before the LHR, we would have to collect this data from locals ourselves and it was a pretty big burden. Now I get the data emailed to me and it makes things a lot easier. It’s really

reduced our reporting efforts and allowed us to focus on other activities.”

This is a clear example of state utilization; however, it does little to provide value to local health departments. Furthermore, there is little communication from the state explaining this type of value added activity taking place at the state level. Thus, even though there is a positive effect resulting from state activities, local authorities are mostly unaware of it.

Two considerations established by previous research clearly fit into this context. The first is the notion of cooperative intergovernmental relations, as explained by Tim Conlan (2006). The evolution of federalism in recent decades has been one of responsibility diversion and passing the burden of programmatic administration to lower levels of government. This is a major shift from earlier efforts which involved direct cooperation between federal, state, and local governments, often in the form of grants and technical support to aid in the delivery of services (T. J. Conlan, 1988). This earlier approach would help to mitigate many of the damaging effects of this performance mandate. By providing organizations with less capacity for direct technical support and even financial assistance, the resource burden would be reduced, thereby leaving public health managers with more time to consider the strategic implications of the LHR data. Expectations from local authorities of state aid should be moderated, however. The state of New Jersey has experienced significant cuts in government expenditures and large reductions in staffing levels through an extended hiring freeze in many of the state agencies, including the Department of Health.

The second consideration for this program is the need for an interactive dialogue, as discussed by Donald Moynihan (2008) as well as Bob Behn (2001, 2014).

Performance as an interactive dialogue involves moving beyond a system of collecting operations data and then reporting that data to varying degrees of regularity, to a system where a majority of the conversations within an organization are informed by performance data. It also involves transforming the notion of accountability. Instead of a traditional hierarchical accountability structure, where the executive sets targets and the various service areas are accountable for success and/or failure, both success and failure spur opportunities for conversations between all members of the organization in an attempt to learn from both situations. Accountability for performance is as much a function of line worker effectiveness as it is a function of leadership. Questions can be asked of anyone, by anyone, in an attempt to learn and shift organizational norms to better improve operations.

In the context of the LHR, the onus for spurring on this dialogue rests mostly on the shoulders of the state supervisors. Local health departments appear to need additional data to make use of the program. For example, a classic performance metric is longitudinal efficiency data. This might take the form of the percent of a particular restaurant in a selected risk category that has been inspected annually for several years. This would allow organizations to have a greater sense of their internal performance. Additionally, numerous participants suggested the development of peer groups in an effort to compare performance across similar agencies, sometimes referred to as

benchmarking. Benchmarking your own performance with another similar organization gives greater context to the data and can aid in the establishment of both meaningful and achievable targets (D. Ammons, 2014). In addition, a benchmarking effort may indeed spur on an interactive dialogue across different local health departments.

Limitations

The primary limitation of this study stems from the choice of case to examine. As the phenomenon being explored is specific to New Jersey and the methodology is very much case-centric, the ability to generalize across all public health agencies is limited. Additionally, as with any qualitative study, there is more room for researcher bias to enter into the collection and analysis of information (Berg et al., 2004). I attempt to address this potential limitation through the use of a town hall forum where initial findings were presented back to participants to assess the relevancy and validity of the conclusions.

Another potential limitation for this study is the involvement of the New Jersey State Department of Health in the recruitment of participants. As the NJDOH is the regulatory body overseeing the activities of participants, there may have been a fear of reporting with some and their opinions and responses to questions may have been moderated. I clearly stated that I was operating as an independent investigator and that their answers would be collected confidentially and reported anonymously but there may have been subconscious effects produced by this relationship.

Conclusions and Considerations for Policy Formation and Future Research

The Local Health Report program was created, and has been maintained, at least in part, with the assumption that by requiring local health departments to collect performance data, they will then use it to make strategic decisions. What is clear from both previous research and this study is that the process of implementing a performance management system is complex, and simply having the requisite data is only one small component of that process. Organizations need the capacity, leadership, and both internal and external support to foster a meaningful performance dialogue.

Capacity, and the lack of it, is a major barrier to truly utilizing the LHR data and any performance data. If an organization attempts to adopt a performance system without recognizing the need for dedicated resources, they may end up reducing the overall productivity of the organization by shifting already full-time employees to managing data collection and reporting as an overlay on their existing responsibilities. Larger organizations are better able to absorb a mandated data collection system such as this, but they may lack the leadership to foster a true performance-involved culture. Committed leadership can even produce positive results in smaller organizations within the bounds of their finite resources. With this in mind, such policies should be developed with the least capable organization in mind. This requires a shift to a cooperative intergovernmental approach rather than simply an unfunded mandate approach; performance systems developed under the pressure of an unfunded mandate accentuate the perverse effects of performance rather than the positive attributes.

Internal structures also play an important role is the use of performance data by public health departments. Many organizations choose an integrated approach to performance, meaning that the regular meetings involve representatives from all service areas and priorities are set at the organizational level. This can result in an under-prioritization of health goals because many government leaders lack a firm understanding of what public health departments actually do. Municipalities often prefer focusing performance efforts on traditional services such as transportation, sanitation, and police. The LHR program may act as a useful educational tool for governing bodies in terms of informing them as to the full range of services provided by the health professionals. Concerted efforts to educate governing bodies and executive leaders on the operations and importance of public health may help enhance the voice of health departments in integrated performance systems.

Public Health is a highly complex field of public service, with both a dynamic approach to the work and a dynamic environment within which public servants operate. A standardized series of performance indicators that are not able to quickly adjust to a changing priority landscape will be less relevant than those which can adjust to meet the demands of the individual organizations and constituent health needs. A nimbler approach to adjusting required data through the LHR may improve the relevance and value of such a system. For example, reducing the standard data points that must be collected, and adding in the ability for users to add information detailing special programs and emerging health risks, may help to incentivize use and better inform state supervisors of the on-the-ground status of health department programs.

Finally, in a state-supervised, locally-administered program, there is a shared responsibility for creating value. State supervisors need to focus on building an interactive dialogue between the state and local entities, as well as among local entities, to enhance the overall utility of such a program. Otherwise, many participants may adopt the sentiment that such an endeavor is simply collecting data for the sake of collecting data. This can be done through enhanced reporting of the annual data back to local stakeholders, through things like longitudinal analysis and benchmarking, as well as increased communication regarding how this data is used at the state level to improve the way that department operates and interacts with the local health system. Programs such as the Local Health Report offer a tremendous opportunity for the expansion of performance management throughout the public health system. However, without proper support and communication, they risk fostering resentment between the participants rather than encouraging a performance-informed dialogue.

This study will hopefully encourage an expansion of performance management research in public health. First, a major limitation in the traditional way of measuring public agency performance biases performance evaluations towards large agencies. The development of a more unbiased measure of performance is critical for future studies. An interim option may be to adopt the practice of “perceived performance” as measured by surveys might serve this purpose as it relies on subject expert opinion rather than a measure of the type of services provided.

Additionally, this study exposes the potential of collaborative performance management between levels of government, specifically when paired with technical

support and training. Future research might explore different arrangements of collaborative performance management and help identify best practices in how these policies are developed and how resources are shared. The sharing of resources is also related to the final area of future study. This case study further highlighted the issue of the “performance paradox” first identified by Holzer et. al (2018), which is when agencies adopt performance without dedicating sufficient resources for the collection and reporting of operational data. As both studies examining this issue are qualitative in nature, a more generalizable study of the relationship between performance system resource dedication and effectiveness is important.

Chapter 3

The Visual Display of Public Performance Information

Introduction

Contrary to popular belief, data has little inherent value. Unlike other valuable resources like oil and gold, which have important industrial purposes even before a refinement process, data requires a mechanism to communicate findings so as to provide any utility to decision-makers. In the previous chapter of this report, local health officials show a strong preference for aggregated reporting from the state of New Jersey. This need for reporting of performance information is found throughout the performance management literature (Behn, 2014; Moynihan & Lavertu, 2012). As those collecting and aggregating operational metrics are rarely those also using such information for policy-making, there will almost inevitably be a transfer of information from reporting agents to decision-making agents. In this transmission of information via a reporting framework, there exists the possibility of miscommunication, and thus the possibility of reducing the overall effectiveness of the performance system overall.

Herein lies the importance of a robust evaluation of how exactly public organizations are designing their performance reporting frameworks. An abundant supply of research exists in how individuals respond to the visual display of information (Edward, 2001; Hildon, Allwood, & Black, 2011; Ogiela & Ogiela, 2009). However, a pronounced gap is evident in the field of public organization performance. Given the intense reliance on reporting routines and the known role played by how information is visually presented, the study of performance has apparently suffered from a critical oversight, and this chapter seeks to contribute to resolving that issue. In this chapter, bureaucrats are presented with several experimental treatments and asked to evaluate the

value of information for organizational decision-making. The chapter begins with a brief review of the literature on the visual display of quantitative information, then reviews the methodological approach to the study. Next, findings of the survey experiment are reviewed and conclusions are drawn. Finally, as an examination of the potential limitations of the study and finally considerations for future research are presented.

Review of Literature: The Visual Display of Quantitative Information

Research into data interpretation has extended across numerous fields and areas of specialization. As a basic understanding, we know that the visual display of quantitative information can profoundly influence how that information is received and processed (Edward, 2001). Significant research has been conducted evaluating how individuals process data based on how it is presented in areas like communicating health risks (Price, Cameron, & Butow, 2007), recommending medical treatments (Hildon et al., 2011), and organizational decision-making performance (Schaubroeck & Muralidhar, 1991). In all these fields of study, the way in which information is presented has been found to influence how individuals interpret and use that information.

Significant research in the area of risk communication has been conducted, attempting to understand how best public health and medical professionals can present information to individuals in a way that promotes both the understanding and utilization of such data. For example, a study around the interaction between general practitioners and patients suggests that using medical charts with visual displays of health risks aids in

patient understanding of information and may increase the likelihood of individuals following prescribed guidelines (Edwards, Elwyn, & Gwyn, 1999) Another example using physicians as the test group found that the visual display of clinical trial progress, in this case pictographs over numerical tables, improved the ability to judge patient progress in experiments and reduced cognitive load associated with information interpretation (Elting, Martin, Cantor, & Rubenstein, 1999).

Several studies have shown meaningful results when comparing numerical data to graphical data in comprehension and utilization tests. The inclusion of visual cues like charts has been shown to reduce mental burden, and processing load for citizens and professionals and can create a reporting framework where automatic visual perception aids in the decision-making process rather than obscures it (Hibbard, Slovic, Peters, & Finucane, 2002). Simply adding positive or negative symbols to information as it relates to risk behavior has been shown to improve response time and favorability of reports (Hibbard, Peters, Slovic, Finucane, & Tusler, 2001). Additionally, providing the information in ranked order can increase the rate at which individuals make correct judgements around a set of data (Ancker, Senathirajah, Kukafka, & Starren, 2006).

There is not, however, a complete consensus around whether the difference between graphical and tabular information is always significant. Much of the debate and inconstancy in results resides in managerial studies (Schaubroeck & Muralidhar, 1991). Some studies do indeed show an effect on decision making when information is

presented graphically (DeSanctis, 1984). Others, though, have shown no statistically significant difference in the way individuals process data presented as a table versus as a graph (Greenwood, Ellis, & Gross, 1991; Jarvenpaa & Dickson, 1988). When considering all fields, rather than just managerial research or health in isolation, the bulk of research suggests there is strong evidence to support the use of visually displayed information. This study aims to expand our understanding of this phenomenon into the field of public performance management, particularly in the context of public health management.

***H₁** – Public health professionals will rate graphically displayed raw number indicators higher than numerically presented raw number indicators*

***H₂** – Public health professionals will rate graphically displayed ratio indicators higher than numerically presented ratio indicators*

***H₃** – Public health professionals will rate graphically displayed benchmarking indicators higher than numerically presented benchmarking indicators*

Data and Methods

Sampling

The sample for this study consists of New Jersey public health professionals that interact with the statewide public health performance reporting system explored in the previous chapter. The survey frame is a comprehensive list of individuals across all local health departments that either create, collect, report, or use the information in the Local Health Report program. The list, called the New Jersey Red Book, is maintained by the New Jersey State Department of Health, and access to the list was granted for the purposes of this study. The total population size for this study is 775 individuals. The reason for only using New Jersey public servants for this study was to increase the likelihood of utilization by policymakers. Findings of this study, as well as the two other

studies, have been presented to the State policymakers (Department of Health leadership and State House and Senate subcommittees on public health). By using a New Jersey-oriented sample, the recommendations have a higher level of relevant context than would a study using a national sample of local health officers.

A mixed-mode approach to contacting individual participants was employed in this study. Specifically, a strategy often referred to as mail push-to-web was used (Weiner, Puniello, & Noland, 2016). In this strategy, individuals were mailed an introduction letter that described the purpose of the study and why their participation is important. The letter was printed on official letterhead and included a shortened URL that they could copy and paste into an internet browser to access the anonymous questionnaire. An example letter is provided in the appendix. Rather than using a URL shortening service, participants are asked to go to the URL “www.RutgersData.org” which is owned by the researcher. This communicates greater creditability than either the native link produced by the survey program or a link provided by a shortening service, likely resulting in increased response rates (Dillman et al., 2014).

Three days after the sample frame received their introduction letter, they were sent an electronic request for participation via email. This message repeated much of the information conveyed in the letter and included a clickable link directing them to the questionnaire. An example email request is presented in the appendix. The email contact strategy is a modified variant of the recommended timeline presented by Dillman (2014). The sample frame received an email three days following the mailer, then 7 days following the initial email, 14 days following the initial email, 18 days following the

initial email, and a final notice 25 days after the initial email. As expected, very few individuals responded through the direct letter, with the vast majority responding via the email requests. A total of 264 individuals responded to the survey in some form and after removing incomplete responses, a final response rate of 197 individuals or 25% was achieved.

Table 2.1 provides a series of descriptive statistics for the survey sample. The sample is a majority female, with 58% of respondents reporting female as the gender variable. For the most part, a rather normal distribution of populations served is observed with the exception of cities over 100,000 residents which exhibit a dense clustering of respondents. As New Jersey has a rather small number of jurisdictions with populations over 100,000, this is likely due to the large number of employees in public health departments serving these populations. This may bias responses towards larger agencies and, given ideal conditions, an under sampling of these organizations would have taken place. However, in order to preserve a sufficient sample size, a normal sampling procedure was utilized.

Agency leadership represents the largest individual position classification in the sample. This stands to reason as agency management are the most active participants in the Local Health Report program. This is also important for general relevance as much of the performance literature suggests information use and decision making happens primarily at the top of the organization (Behn, 2007). However, other research suggest

that performance related responsibilities are dispersed throughout the organization, and thus having a mix of positions is important for exposing the nuances in perceptions (Holzer et al., 2017). There is also a logical connection between this and the relatively high level of education and experience in the sample with over half of participants possessing a master's degree or above and 42% possessing over 20 year of public health experience. The level of education is also generally in alignment with public health overall, as around 64% of agency leadership in national samples possess and master's degree or higher⁵.

Table 3.1 – Survey Sample Descriptive Statistics

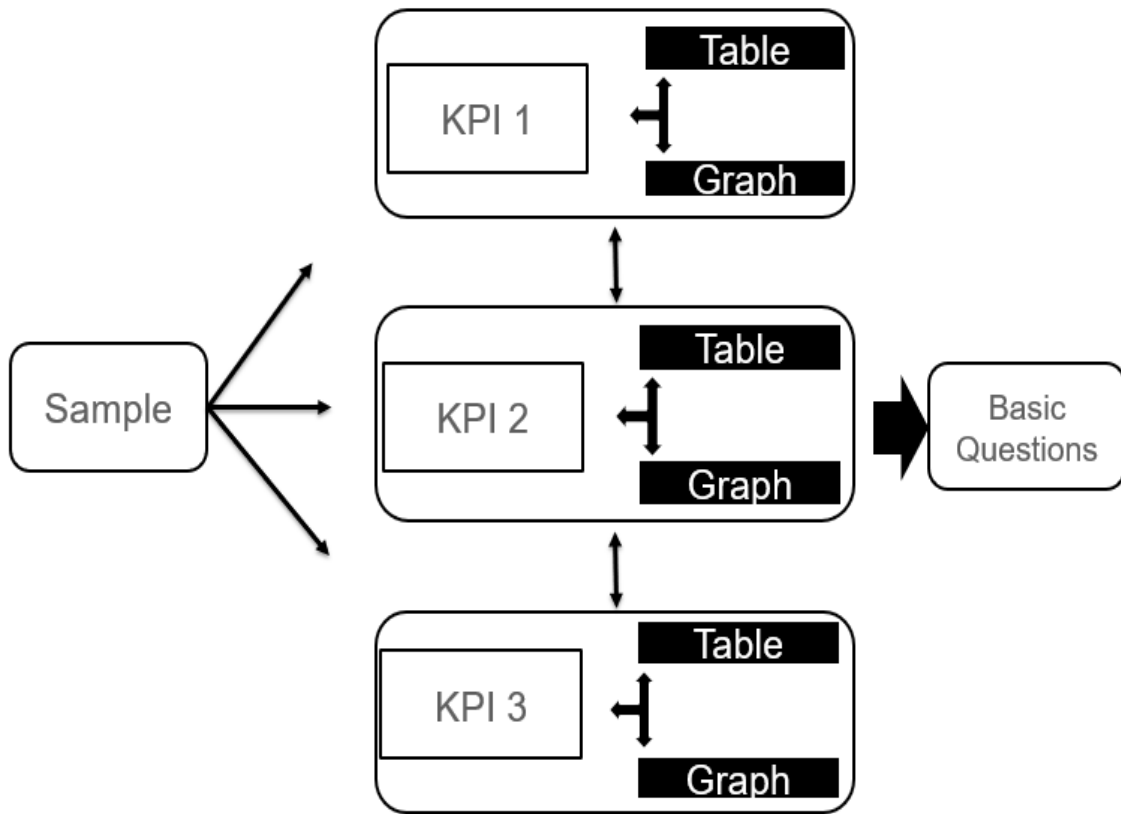
Gender	%	Population	%	Education Level	%
Female	58%	<10,000	1%	Some College	3%
Male	42%	10,000 - 24,999	15%	2-year College	2%
				Degree	
		25,000 - 49,999	30%	4-year College	
		50,000 - 74,999	24%	Degree	38%
		75,000 - 99,999	8%	Master's Degree	52%
		100,000+	23%	PhD/JD/MD	5%
Position	%	Experience	%	Performance Familiarity	%
Agency Leadership	61%	Less than 1 year	1%	Not familiar at all	4%
Environmental Health	33%	1-3 years	8%	Slightly familiar	12%
Nurse/Nursing Aid	22%	4-5 years	12%	Moderately familiar	37%
Inspections	13%	6-10 years	8%	Very familiar	34%
Education	9%	11-20 years	28%	Extremely familiar	12%
Staff/Support	8%	20 years+	42%		
Other	8%				
Epidemiology	5%				

⁵ Figure provided by the National Association of City and County Health Officers
http://nacchoprofilestudy.org/wp-content/uploads/2017/10/Summary_Report_Oct2017_Final.pdf

Experimental Design

The use of experimental survey vignettes is a popular approach to examining causal relationships between a treatment of some sort and individual perceptions (Atzmüller & Steiner, 2010). Although there has been some debate over the power of such designs to truly identify causality, several studies have indeed validated the approach as a relatively robust tool that can illustrate real-world behavior given sufficient design rigor (Hainmueller, Hangartner, & Yamamoto, 2015). Experimental vignette designs involve randomly assigning participants to one or more experimental treatment groups that are then exposed to some sort of information. Typically, the process involves presenting each group with the same initial information and making a small number of changes throughout to isolate the treatment effect from other design effects. The fewer the changes in the presentation between each group, the stronger the causal inference can be (Alexander & Becker, 1978). Electronic survey tools, in this case Qualtrics, offer a powerful series of tools to design such studies as they allow for not only complex randomization schemes but the ability to insert multi-media elements to test things like graphical treatments (Dillman et al., 2014).

Figure 3.1 – Experimental Design



In Figure 3.1, the experimental design is presented. The sample of participants is developed containing an initial sample size of 197 individuals. After a brief introduction, participants are randomly assigned to their first vignette. Three experimental vignettes are utilized in the study. All three presentations use restaurant inspections as the service area. Utilizing one service area is meant to reduce any design effects that may arise from changing the context of the performance evaluation. There are two randomizations in this study. The first is the order in which they see the vignettes. Each participant is asked to evaluate all three performance indicator types; however, the order in which they see them is randomized to reduce any question as to order effects that may occur in a set-order format. The next randomization is whether they see the example indicator presented as a bar chart or as a numerical table.

Each respondent will see a short introduction paragraph that describes the program and how performance indicators are used, then asked to view either a table or a graph of an example indicator. After reviewing the hypothetical data, they are asked to rate the value of the metric possesses for organizational decision-making. The wording of each vignette is presented in Table 3.2. The question used to probe for information value is “how valuable is this information for organizational decision-making?” After completing each experimental question, respondents are then asked to complete a series of categorical questions that collect demographic, work experience, and organizational characteristic questions.

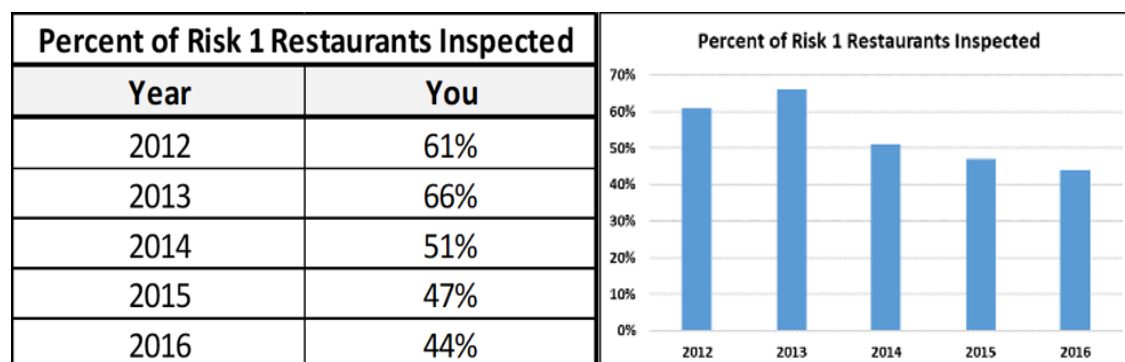
Table 3.2 – Experimental Treatment Vignette Wording

Treatment Groups	Treatment wording
Graphical	The Local Health Report (LHR) contains data describing local health activities during the previous year. Below is an example (using hypothetical data) of the type of data collected by the program. This graph shows the number of risk 1 restaurants that were inspected within each reporting year. <i>Q - How valuable is this information for organizational decision-making?</i>
Tabular	The Local Health Report (LHR) contains data describing local health activities during the previous year. Below is an example (using hypothetical data) of the type of data collected by the program. This table shows the number of risk 1 restaurants that were inspected within each reporting year. <i>Q - How valuable is this information for organizational decision-making?</i>
Graphical	The Local Health Report (LHR) contains data describing local health activities during the previous year. Below is an example (using hypothetical data) of the type of data collected by the program. This graph shows the percent of all risk 1 restaurants that were inspected within each reporting year. <i>Q - How valuable is this information for organizational decision-making?</i>
Tabular	The Local Health Report (LHR) contains data describing local health activities during the previous year. Below is an example (using hypothetical data) of the type of data collected by the program. This table shows the percent of all risk 1 restaurants that were inspected within each reporting year. <i>Q - How valuable is this information for organizational decision-making?</i>
Graphical	Comparing your own performance against similar organizations, sometimes called benchmarking, is a common technique used by public organizations. Peer groups are typically made up of agencies with similar numbers of employees, residents, and jurisdiction characteristics so that comparisons can lead to meaningful sharing of best practices. Below is an example (using hypothetical data) of a peer group comparison using Local Health Report (LHR) data. This graph shows the percent of all risk 1 restaurants in each jurisdiction that were inspected within each reporting year. <i>Q - How valuable is this information for organizational decision-making?</i>
Tabular	Comparing your own performance against similar organizations, sometimes called benchmarking, is a common technique used by public organizations. Peer groups are typically made up of agencies with similar numbers of employees, residents, and jurisdiction characteristics so that comparisons can lead to meaningful sharing of best practices. Below is an example (using hypothetical data) of a peer group comparison using Local Health Report (LHR) data. This table shows the percent of all risk 1 restaurants in each jurisdiction that were inspected within each reporting year. <i>Q - How valuable is this information for organizational decision-making?</i>

The three types of performance indicators used in the vignettes are; raw number, ratio, and benchmarking. These three forms of key performance indicators are used as they are very common in public organization performance systems (Parmenter, 2012). The commonality of format is meant to increase the overall cognition of the information presented and reduce measurement error due to confusion caused by the question itself

(Groves et al., 2011). Figure 3.2 shows an example of the difference between the graphically presented performance indicator and a numerical table presentation. Each example uses the same underlying data and performance levels. The full survey questionnaire is available in the Appendix.

Figure 3.2 – Graphical and Numerical Display of Performance Indicator



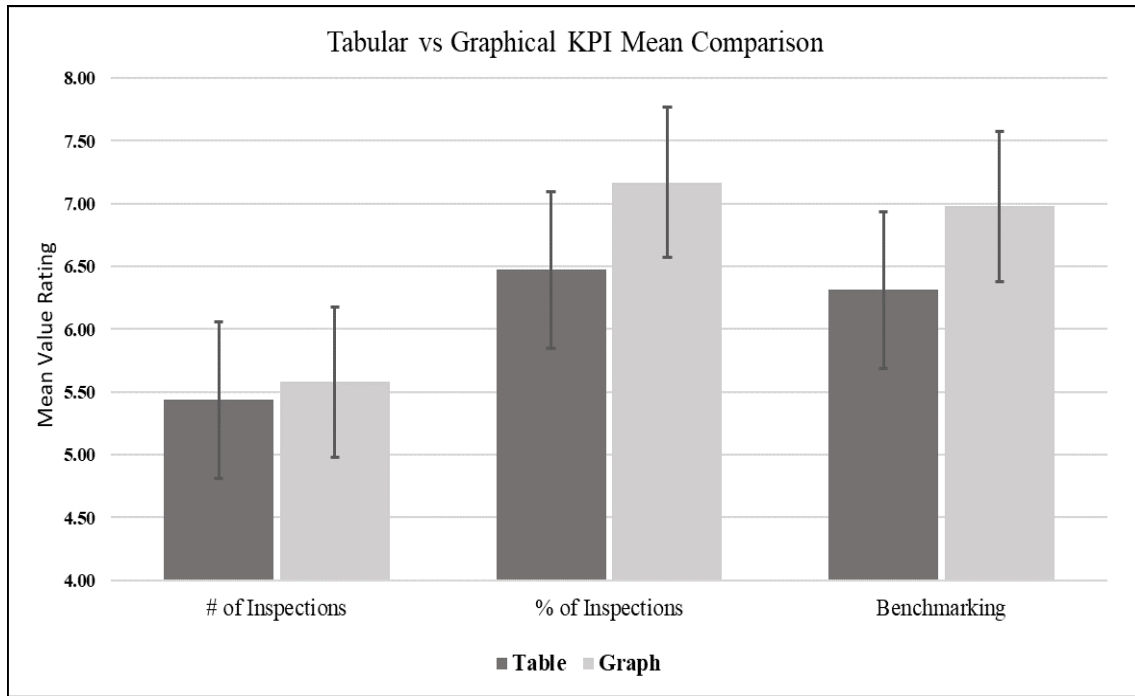
The randomization process is meant to produce statistically equivalent treatment groups. This means that both treatment groups should have a similar makeup in terms of important individual characteristics. Statistical equivalency helps control for any variation in responses due to influences other than the experimental treatment, such as gender or position. Previous research into the performance of public health organizations suggests that the size of the population served is a strong contributor to overall performance of the organization (Remler & Van Ryzin, 2010). Additionally, the gender agency leadership shows a relationship to performance and overall innovation. Female leadership is connected with greater utilization of quality improvement information and the promotion of innovative practices (Erwin, 2008). For these reasons, the variables of interest for statistical equivalency are population served and the gender of the respondents. In Table 3.3, the makeup of each experimental group for both of these key variable is presented.

Table 3.3 – Experimental Group Statistical Equivalencies

% Female (Overall Sample: 58%)							
Group		# of Inspections		% of Inspections		Benchmarking	
Treatment (Graphical)		57%		56%		60%	
Control (Tabular)		59%		60%		57%	
Population Served							
Population	Sample	# Inspections		% Inspections		Benchmarking	
		Treat	Control	Treat	Control	Treat	Control
<10,000	1%	1%	1%	1%	1%	1%	1%
10,000 - 24,999	15%	16%	13%	14%	15%	12%	17%
25,000 - 49,999	30%	31%	29%	25%	34%	28%	32%
50,000 - 74,999	24%	22%	26%	24%	23%	29%	19%
75,000 - 99,999	8%	8%	8%	9%	7%	6%	10%
100,000+	23%	22%	24%	26%	19%	22%	23%

Results

The first analysis conducted is a simple comparison of means between the various experimental group responses. Figure 3.3 shows the mean scores for each performance indicator. The left bar (dark grey) indicates the mean response for the tabular display of information and the right bar (light grey) indicates the mean response from those presented with the graphical information. The black up-down marks represent the 95% confidence intervals for the responses. As you can see, there is a pronounced effect observed in the ratio indicator and the benchmarking indicator, but not the raw number example, suggesting the graphically displayed information possessed a higher perceived value for certain types of performance data points.

Figure 3.3 – Comparison of Mean Responses

Next, two-sample t-test to compare the means of each vignette. For example, the mean response for those shown the tabular presentation of the number of restaurants inspected is compared to the mean response from those shown the graphical display of the same information. The equation to produce this test statistic, assuming equal

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

variances, is as follows:

$$s^2 = \frac{\sum_{i=1}^{n_1} (x_i - \bar{x}_1)^2 + \sum_{j=1}^{n_2} (x_j - \bar{x}_2)^2}{n_1 + n_2 - 2}$$

where \bar{x}_1 and \bar{x}_2 are the sample means, s^2 is the pooled sample variance, n_1 and n_2 are the sample sizes and t is a participant t quantile with $n_1 + n_2 - 2$ degrees of freedom.

Table 3.4 – Two Sample t-Test for Experimental Mean Comparison

Variable	Obs	Mean	Std. Err.	Std. Dev.	T > t	95% Conf. Int
# Table	101	5.443	0.313	3.132	0.212	5.508 6.752
# Graph	96	5.586	0.300	3.003		5.934 7.126
% Table	94	6.476*	0.291	2.984	0.097	5.899 7.054
% Graph	102	7.168*	0.290	2.827		6.593 7.744
Benchmark Table	94	6.312**	0.264	2.761	0.046	5.788 6.836
Benchmark Graph	92	7.168**	0.290	2.827		6.593 7.744

The t-test indicates the statistical significance of mean scores to determine whether there is some external force causing the difference or if the difference happened randomly in the data. For this experiment, the ratio indicator as well as the benchmarking indicator exhibit statistical significant. The first at the .1 level and the second at the .05 level. However, the raw number indicator does not show statistical significance with a test statistic of .122. The reason for this difference is not known, but a hypothesis is that participants ascribe little inherent value to the raw number indicator in terms of organizational decision-making (D. N. Ammons & Rivenbark, 2008). This may result in respondents employing a more random assignment of value as they would not naturally use such a measure in their own performance efforts.

Next, ordinary least squares regression analysis is performed in a series of different models to test for both statistical significance of the overall effect as well as to

control away any effects from other variables. Table 3.4 presents the results from the regression analysis. In the first model, only the treatment and response are included in the equation. In the second model, for all three experimental treatments, additional control variables are added to the equation. In model 2, the level of experience with performance management, highest education level achieved, age, and population served are controlled for, as well as dummy variables for gender and whether or not they are agency leadership.

Table 3.4 – OLS Regression of Visual Display Experimental Treatment

	# of Inspections		% of Inspections		Benchmarking	
	<i>Model</i>	<i>Model</i>	<i>Model</i>	<i>Model</i>	<i>Model</i>	<i>Model</i>
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
Treatment (1=graphical)	0.011 (0.012)	0.011 (0.012)	0.021* (.012)	.021* (.012)	0.019** (.012)	.018** (0.012)
Performance Experience		.011 (.036)		-.006 (.036)		-0.023 (0.036)
Education		.002 (.046)		.032 (.045)		-0.042 (0.045)
Constant	0.432 (0.084)	0.387 (.251)	0.337 (0.012)	0.205 (.247)	0.32 (.088)	0.597 (0.255)
Adjusted R	0.004	0	0.014	0.017	0.01	0.01
N	197	169	196	169	186	169

*p<0.1, **p<0.05, ***p<0.01, Model 2 also controls for age, gender, position, and population served. The n is smaller for the regression analysis due to response drop-off later in the survey.

The results of the regression analysis confirm previous findings in the comparison of means. A statistically significant result in the predicted direction can be found for the ratio indicator and the benchmarking indicator but not in the raw number indicator. In these two cases, presenting information graphically produced higher evaluations of data value than those by individuals to whom the same information is presented numerically. Even after controlling for the other variables, this result remains consistent across both of

the statistically significant treatments. Thus, we can reject the null hypothesis for the ratio indicator and the benchmarking indicator, but not in the case of the raw number example.

Limitations

Clear limitations exist in this study. The first of which, common among public administration research, is the issue of common source bias. This occurs when both an independent (treatment) and dependent (response) variable are derived from the same source, in this case a survey. This is a sub-category of measurement correlation error (Meier & O'Toole, 2013). This is often found in performance research as “true measures” of performance are often replaced by a subjective evaluation of organizational performance, meaning individuals are asked to rate how well an organization is improving performance. In this case, individuals are asked to present a subjective evaluation of how valuable data is for their own organizational decision-making. This limitation is difficult to avoid for both logistical and ethical reasons. A researcher may work with many different organizations and randomly assign some to a graphical reporting framework and the rest to a numerical framework, but this process would be prohibitively costly and time consuming. Additionally, there are potentially high levels of risk involved in changing organizational reporting systems as many service areas directly effect individuals in the population.

The second limitation to consider is data comprehension. Previous research has suggested that the presentation of information may improve how individuals understand the data (Hildon et al., 2011). For organizational researchers, it is important to know whether or not a particular reporting framework will encourage both the correct comprehension usage and the correct usage of information. That is, will presenting information graphically improve policy-makers' understanding of the information and not just encourage them to use the information. This study does not address the comprehension issue with data reporting, simply the likelihood of use.

Finally, the nature of the performance indicator or the service area may influence how individuals rate its value and usefulness. Only one service area, restaurant inspections, was tested in this study. Given the breadth of work done by public health agencies, other higher-risk activities may change the results of the study. For example, a very high-risk area may influence individuals to more thoroughly evaluate the information regardless of how it is presented as the potential harm caused by mental shortcuts is greater. Additionally, other key performance indicators common to performance management systems were not included in this study and may yield different results.

Conclusions and Future Research

This study expands previous research on the visual display of quantitative information into the field of public performance management for the first time. It suggests that by simply presenting information graphically, rather than numerically, decision-makers will attach higher levels of value to that data, which in turn may encourage use. Although the effect of size is rather small across the various statistically

significant treatments, the effort required to induce the treatment in a real-world setting is minimal, thus almost certainly creating a net positive outcome in a reporting framework.

Researchers have noted the gap between adopting a performance system and actually using the information produced for managerial purposes (Julnes & Holzer, 2001), and this study may provide a simple technique to make incremental progress towards bridging that gap. Data literacy is not universal; however, performance management requires at least a baseline understanding and appreciation for quantitative information. Simplifying the reporting scheme may indeed reduce the effects of data overload in some organizations.

This study also presents interesting opportunities for future research in the area. The idea of data literacy is rather under-examined in the context of public performance management and may be one of the many causes of the adoption-use gap. As stated previously, this study does not address whether or not individuals comprehended the data presented, meaning whether they were able to accurately evaluate the information reported. Additional research into the ability of decision-makers to make accurate assessments of performance data may further our understanding of why so much information is collected, but few examples of truly data-driven public organizations exist relative to the overall number of governments that have in some way “adopted” performance.

Chapter 4

Framing Effects and Perceptions of Public Health Performance

Introduction

Not only is the visual presentation of performance information important to the way individuals interpret its value and meaning, but the way that information is linguistically framed can also influence perceptions. In the previous chapter, I examined the effect of changing the visual display of performance metrics on the way public health professionals rate the value of that information. In this chapter, I will explore the context that surrounds a performance metric measure--whether or not that plays a role in how individuals perceive the operations of a public health agency.

The study of performance in public health agencies has often focused on factors influencing organizational performance and managerial reforms such as accreditation (Carman & Timsina, 2015; Erwin, 2008). However, little attention has been paid to the study of information cognition and interpretation. There exists a growing body of literature that explores framing effects and data interpretation, both in the public sector and elsewhere (Kühberger, 1998; Levin, Schnittjer, & Thee, 1988; Olsen, 2015; Tversky & Kahneman, 1981); however, little research has applied these types of behavioral techniques to the way public health professionals view performance and quality improvement. This study extends the study of equivalency framing effects into the field of public health practice and investigates potential traps in the reporting of performance that could lead to less than optimal decision-making.

Information Framing – Review of the Literature

Within psychology, prospect theory suggests that the point of reference individuals use to judge whether information is perceived as a benefit or a harm to some

individual or organization can be shifted by framing the information in a positive or negative light. That is, if you present probabilistically equivalent information in a positive light it will be interpreted differently than it would had you presented it in a negative light (Kahneman & Tversky, 1979). This notion of equivalency framing has been expanded and adopted in experimental research to explore numerous fields ranging from public management to health behavior. This study intends to test this theory in the field of performance management in public health, a novel area of study for prospect theory.

The very concept of performance management relies on an assumption that information is objective and decision-makers are able to receive operational reports and design policy reforms around those. The flaw in this assumption is that we know, through decades of psychological research, that information has a fluid meaning depending on the context and presentation. For example, by changing the valence of a particular data point, you can change the meaning individuals derive from it (Levin, Schneider, & Gaeth, 1998). Testing for these valence change effects involves presenting different individuals with the same underlying data, but placing that information within either a positive or negative context. For example, consumers have been shown to rate a product higher if presented with product information in a positive frame in contrast to consumers presented the same product and information in a negative frame (Levin & Gaeth, 1988).

Fields outside of consumer behavior have also shown a relationship between informational valence and comprehension. For example, when patients are presented with behavioral risk factors as relative ratings among a series of potential behaviors, they tend to perceive that information as more useful than information presented as absolute risk (Edwards, Elwyn, Covey, Matthews, & Pill, 2001). In another study published in the *New*

England Journal of Medicine, patients were more likely to view surgery as a preferable treatment to cancer (the riskier option) than radiation (the less riskier option) when the outcomes information of this option were presented positively rather than negatively.

Equivalency framing in the field of public administration, however, is relatively underexplored compared to other fields. This is particularly true when considering performance information in public health management. A previous study utilizes Danish citizens to measure the perceptual shift of performance information. It showed that the citizens initial evaluation of performance information is highly susceptible to framing effects (Olsen, 2015). Similarly, citizen evaluation of performance information is also influenced by the physical positioning of the information, specifically a left-most digit bias in information preferences (Olsen, 2013).

H₁ – *Placing public health performance target data in a positive frame will result in a higher rating of organizational performance than performance data placed in a negative frame.*

H₂ – *Placing public health training and outreach data in a positive frame will result in a higher rating of organizational performance than training and outreach data placed in a negative frame.*

Data and Methods

The sample for this study, as is also the case for the previous study on data visualization, consists of New Jersey public health professionals that interact with the New Jersey Local Health Report. The survey frame is a comprehensive list of individuals across all local health departments that either create, collect, report, or use the information in the Local Health Report program. The list, called the New Jersey Red Book, is maintained by the New Jersey State Department of Health, and access to the list

was granted for the purposes of this study. The total population size for this study is 775 individuals. The reason for only using New Jersey public servants for this study was to increase the likelihood of utilization by policymakers. Findings of this study, as well as the two other studies, have been presented to the State policymakers (Department of Health leadership and State House and Senate subcommittees on public health). By using a New Jersey-oriented sample, the recommendations have a higher level of relevant context than would a study using a national sample of local health officers.

The contact strategy employed for this survey mirrors the methods employed in the previous chapter, see pages 84-85 for detail. A total of 264 individuals responded to the survey in some form, and after removing incomplete responses a final response rate of 173 individuals (or 22%) was achieved. The response rate for this study is slightly lower than the previous due to line-item drop-off as respondents completed the survey. Due to this lower response rate, the descriptive characteristics of the sample changed slightly.

Table 4.1 provides a series of descriptive statistics for the survey sample. The sample is a majority female, with 58% of respondents reporting female as the gender variable. For the most part, a rather normal distribution of populations served is observed, with the exception of cities over 100,000 residents which exhibit a dense clustering of respondents. As New Jersey has a rather small number of jurisdictions with populations over 100,000, this distribution is likely due to the large number of employees in public health departments serving these populations. This may bias responses towards larger agencies, and given ideal conditions, an under sampling of these organizations would

have taken place. However, in order to preserve a sufficient sample size, a normal sampling procedure was utilized.

Table 4.1 – Framing Experiment Descriptive Statistics

Gender	%	Population	%	Education Level	%
Female	58%	<10,000	1%	Some College	3%
Male	42%	10,000 - 24,999	15%	2-year College	2%
		25,000 - 49,999	30%	4-year College	38%
		50,000 - 74,999	24%	Master's Degree	52%
		75,000 - 99,999	8%	PhD/JD/MD	5%
		100,000+	23%		
Position	%	Experience	%	Performance Familiarity	%
Agency Leadership	61%	Less than 1 year	1%	Not familiar at all	4%
Environmental Health	33%	1-3 years	8%	Slightly familiar	12%
Nurse/Nursing Aid	22%	4-5 years	12%	Moderately familiar	37%
Inspections	13%	6-10 years	8%	Very familiar	34%
Education	9%	11-20 years	28%	Extremely familiar	12%
Staff/Support	8%	20 years+	42%		
Other	8%				
Epidemiology	5%				

Agency leadership represents the largest individual position classification in the sample. This stands to reason as agency management are the most active participants in the Local Health Report program. This is also important for general relevance as much of the performance literature suggests information use and decision making happens primarily at the top of the organization (Behn, 2007). However, other research suggest that performance related responsibilities are dispersed throughout the organization, thus

having a mix of positions is important for exposing the nuances in perceptions (Holzer et al., 2017). There is also a logical connection between this and the relatively high level of education and experience in the sample, with 57% of participants possessing a master's degree or above and 42% possessing over 20 years of public health experience. The level of education is also generally in alignment with public health overall as around 64% of agency leadership in national samples possess a master's degree or higher⁶.

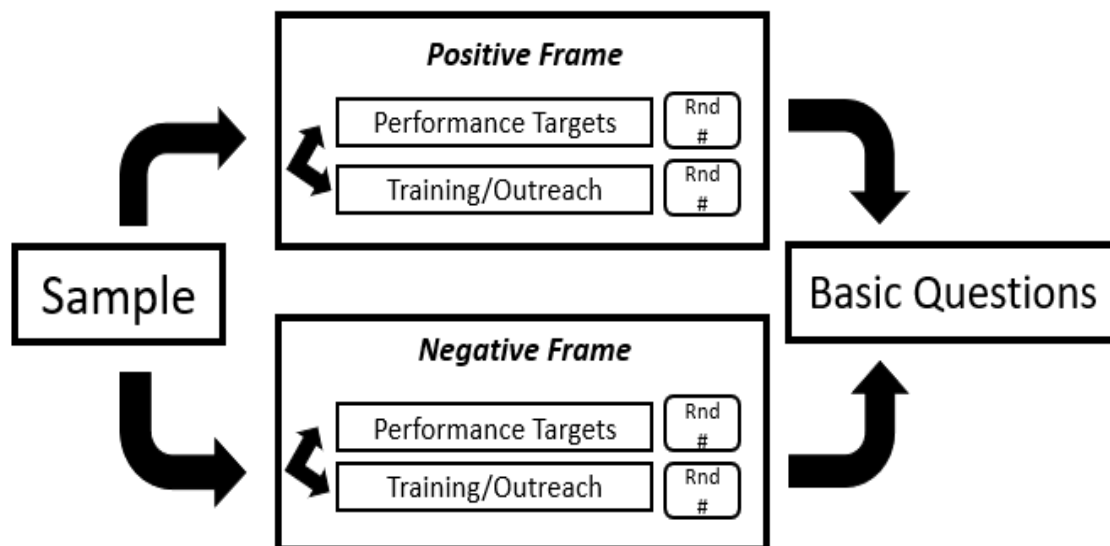
Experimental Design

In much the same fashion as the previous chapter, this study utilizes an experimental vignette survey design. This allows the study to randomly assign individuals into groups and present them with the same structure of information with a small number of changes (Atzmüller & Steiner, 2010). This study utilizes relatively few structural changes to the information presented to individuals so that the causal mechanism may be isolated from other extraneous effects from the design or the information itself. In this particular study, individuals are placed into two general experimental groups, a “positive framing” group and a “negative framing” group. They are then exposed to two separate presentations of performance information from a hypothetical local public health department. The types of performance information presented are: (1) a summary statement of performance target achievement, and (2) citizen satisfaction with an emergency preparedness training and outreach event held by a local public health department.

⁶ Figure provided by the National Association of City and County Health Officers
http://nacchoprofilestudy.org/wp-content/uploads/2017/10/Summary_Report_Oct2017_Final.pdf

The treatment occurs when participants are exposed to different information “frames,” meaning when the information is presented in a positive light or a negative light. For example, some participants may see “....successfully achieved 90% of their targets” while other may see “....did not meet 10% of their performance targets.” The underlying reality of the organizational performance is the same; however, the context of the information changes thus influences individual perceptions. Figure 4.1 illustrates the overall experimental design. After the performance information is presented, participants are asked to evaluate the hypothetical agency’s performance on a linear scale of 0 to 100, with 0 being the worst possible performance and 100 being the best possible performance.

Figure 4.1 – Framing Effects Experimental Design



As you can see, there are three points of randomization participants experience when completing the questionnaire. The first is when they are assigned to the “positive” group or the “negative” group. Once in these groups, they will view both vignettes of the same frame and respond to each. This randomization is meant to achieve statistical equivalency

between the two treatment groups. The second point of randomization is the order in which they see the vignettes. Some will randomly see the performance targets presentation first while others will see the training and outreach presentation first. This is meant to control away any unintended question ordering effects (Groves et al., 2011). Finally, within each vignette, participants are randomly assigned a number used to describe the key performance indicator. For example, positive framing respondents will see a number attached to their vignette between 80-95% ($X_p = 80,95$), while negative framing respondents will see a random number between 5-20% ($X_n = 5,20$). The purpose of this randomization is twofold: first to attempt to reduce effects of common source bias that are inherent in survey experiments (Meier & O'Toole, 2013), and second to test whether the severity or level of the frame influences the way individuals perceive the framed information. Table 4.2 presents the full text of the experimental vignettes with the points of randomization. The first and the third randomizations are set to equal distributions, meaning each possible event is equally likely to occur.

Table 4.2 – Treatment Frames and Vignette Wording

Treatment frame	Treatment wording
Positive	The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments develop measurable performance and quality improvement objectives. Suppose one of these departments successfully met ($X_p = 80,95$) percent of its performance objectives. How would you rate the performance of this department? (Scale 0-100) (n=85)
	The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments provide emergency preparedness training to members of their community. Suppose one of these departments conducted a post-training survey and ($X_p = 80,95$) percent of attendees were satisfied with the event. How would you rate the performance of this department? (Scale 0-100) (n=88)
Negative	The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments develop measurable performance and quality improvement objectives. Suppose one of these departments did not meet ($X_n = 5,20$) percent of its performance objectives. How would you rate the performance of this department? (Scale 0-100) (n=84)
	The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments provide emergency preparedness training to members of their community. Suppose one of these departments conducted a post-training survey and ($X_n = 5,20$) percent of attendees were unsatisfied with the event. How would you rate the performance of this department? (Scale 0-100) (n=81)

Equal distribution randomization for the two framing groups was used to ensure statistical equivalency between the treatment groups. Statistical equivalency refers to two groups having similar characteristics in terms of group demographics that may influence their response to the experimental treatments. This helps to design away any potential confounding variables which may be confusing the identification of a causal mechanism and to isolate the effect of the treatment (Remler & Van Ryzin, 2010). Below, in table 4.3, you can see the treatment groups with important descriptive statistics for each.

Across gender, position, familiarity with performance management and familiarity with training and outreach, each treatment group varies very little, thus suggesting the presence of statistically equivalent groups.

Table 4.3 – Framing Experiment Treatment Group Characteristics

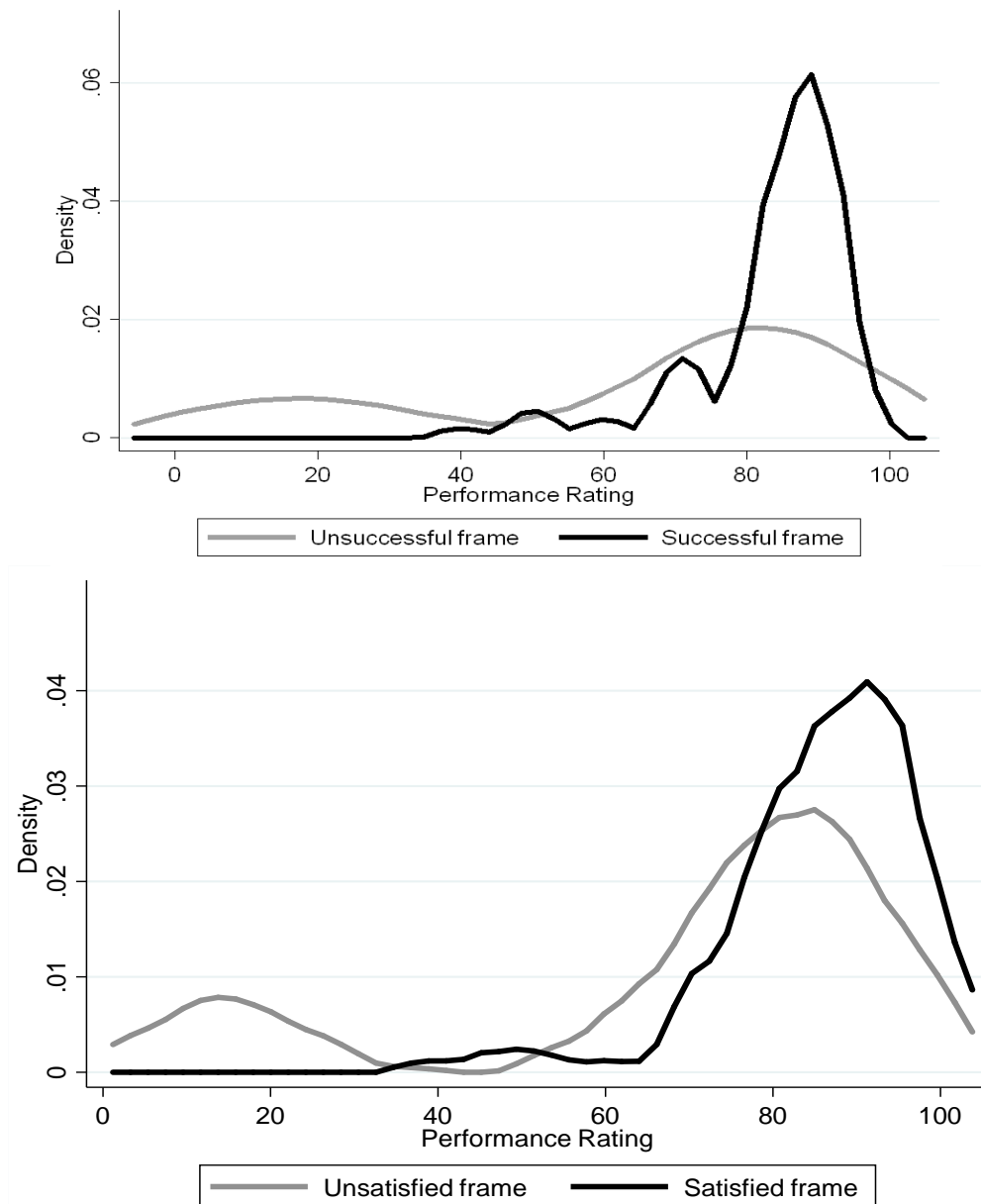
Treatment Group Statistical Equivalency (n=173)			
<i>Gender</i>	<i>Overall Sample</i>	<i>Positive Frame</i>	<i>Negative Frame</i>
Female	60%	58%	62%
Male	40%	42%	38%
<i>Position</i>	<i>Overall Sample</i>	<i>Positive Frame %</i>	<i>Negative Frame %</i>
Agency Leadership	40%	42%	39%
Environmental Health	20%	18%	21%
Nurse/Nursing Aid	13%	15%	12%
Inspections	8%	7%	9%
Education	6%	8%	5%
Operations Support	6%	5%	7%
Other	5%	6%	4%
Epidemiology	2%	0%	4%
<i>Performance Familiarity</i>	<i>Overall Sample</i>	<i>Positive Frame %</i>	<i>Negative Frame %</i>
Not familiar at all	5%	6%	4%
Slightly familiar	12%	11%	12%
Moderately familiar	38%	36%	39%
Very familiar	33%	32%	34%
Extremely familiar	13%	15%	12%
<i>Training Familiarity</i>	<i>Overall Sample</i>	<i>Positive Frame %</i>	<i>Negative Frame %</i>
Not familiar at all	1%	1%	1%
Slightly familiar	5%	5%	6%
Moderately familiar	19%	25%	13%
Very familiar	46%	40%	53%
Extremely familiar	28%	30%	27%

Results

In figures 4.2 and 4.3, density plots are presented, representing the frequency of responses across the total 0-100 distribution for the positive and negative frame groups.

Each category--performance targets and training--are combined into one density plot so as to compare the responses for the positive and negative frames.

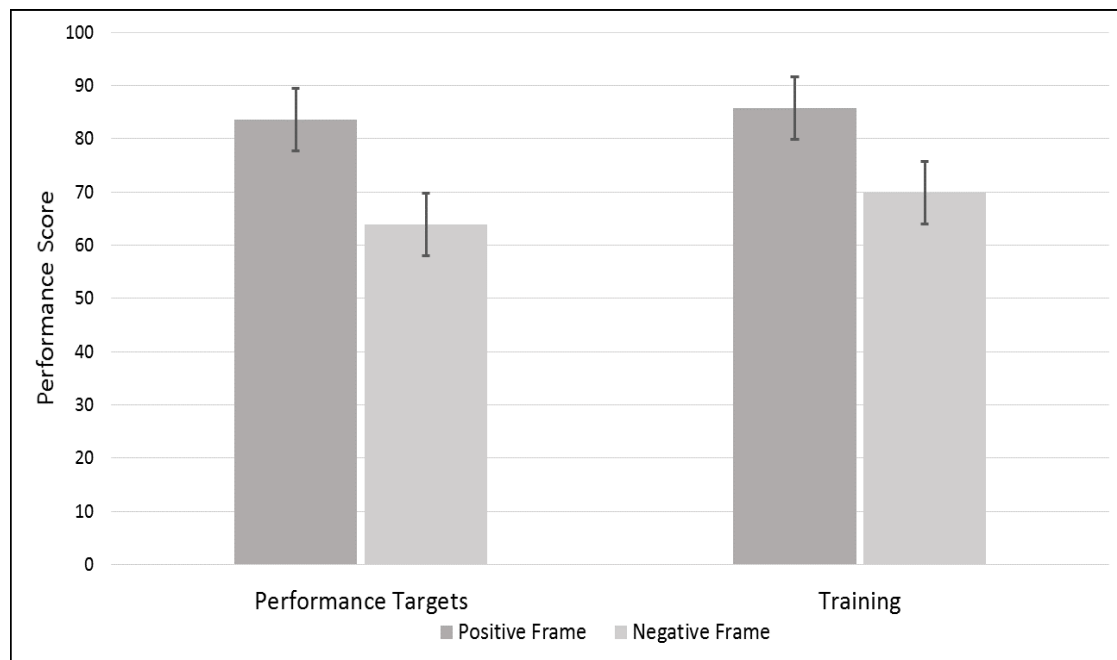
Figure 4.2/4.3 – Density Plot of Performance Target Treatment (Top) Training (Bottom)



Both figures suggest a greater density of responses at the higher performing end of the distribution by those individuals presented with a positive framed treatment. In Figure 4.2, which illustrated the responses to the performance targets vignette, those who were

in the positive frame exhibit a pronounced spike in density at the high end of the distribution, while those in the negative framing group show a rather subtler spike at the high end with a larger density towards the poor performance end of the distribution. Much the same is seen in figure 4.3; however there appear to be less of a strong dichotomy between the two experimental groups. Figure 4.3 shows the responses to the training and outreach vignette, and there is a clear difference in responses between the positive and negative framing groups, with the positive framing respondents reporting higher performance while there is a spike in density towards the low end of the distribution by those in the negative framing group.

Shown another way in figure 4.4, there is a clear difference in mean responses between the positive and negative framing groups. The left two vertical bars represent mean responses to the performance target vignette, while the right two illustrate the mean responses to the training and outreach vignette. The dark grey bar shows those in the positive framing group, while the light grey bar shows those in the negative framing group, with the black topped and bottomed lines indicating the 95% confidence intervals for the mean ratings. Both difference in mean ratings are statistically significant at the ($P > 0.001$ level).

Figure 4.4 – Mean Ratings by Performance Metric Type

To try to further clarify the underlying variable influencing the difference in responses between the two frames, additional classification information was collected from respondents. The level of experience with performance management and the level of experience with training and outreach activities were obtained using a 5-point Likert scale ranging from “Not at All Familiar” to “Extremely Familiar.” This may serve as an “alternative source of information” that may inform these individual evaluations beyond simply the framing treatment. Previous research has argued that individuals will be informed by both the experimental treatment as well as their empathy for that particular activity. A high level of experience with performance management may act as a moderator for the positive and negative treatments, just as a high level of experience with training and outreach may moderate the effects of the framing treatment. Those with little to no experience in these areas are likely to be informed to a greater degree solely by the information presented to them and less by their individual expertise (Olsen, 2015).

Table 4.4 - OLS Regress Results for Performance Target Vignette

	Model A	Model B	Model C	Model D	Model E
Framing (1=Successful)	19.58*** (3.43)	19.74*** (3.42)	19.72*** (3.38)	19.72*** (3.39)	19.73*** (3.41)
Treatment Percent		-0.53* (.42)	-1.34* (.56)	-1.35* (.57)	-1.35* (.57)
Frame*Treatment Percent			1.76 (.84)	1.8 (.84)	1.8 (.85)
Performance Experience				-0.47 (1.69)	-0.47 (1.69)
Education					0.12 (2.19)
Intercept	63.94***	63.86***	63.74***	65.31***	64.76
Adjusted R2	0.16	0.16	0.18	0.17	0.16
F-statistic	32.7	17.16	13.21	9.87	7.85
N	169	169	169	169	169

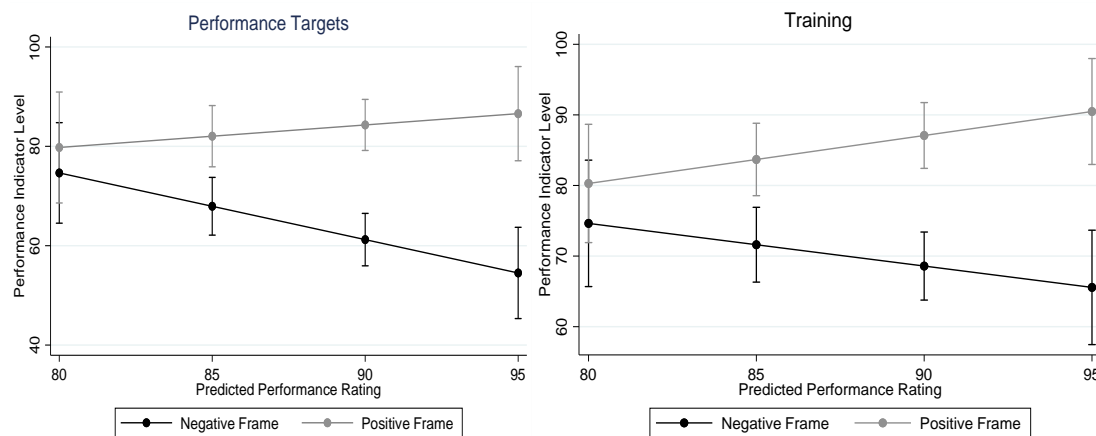
St. Error in parenthesis. *** denotes $p < .001$, * denotes $p < .05$ Model E also includes control variables for gender, in a leadership position, population served, and number of employees.

Table 4.5 - OLS Regress Results for Training Vignette

	Model A	Model B	Model C	Model D	Model E
Framing (1=Successful)	15.99*** (3.15)	16.09*** (3.16)	16.08*** (3.15)	16.08*** (3.17)	16.02*** (3.18)
Treatment Percent		-0.32 (.39)	-0.64 (.53)	-0.66 (.53)	-0.65 (.53)
Frame*Treatment Percent			0.693 (.78)	0.71 (.79)	0.72 (.79)
Training Experience				-0.65 (1.57)	-0.63 (1.53)
Education					-0.69 (2.05)
Intercept	69.79***	69.73***	69.70***	71.89***	74.99***
Adjusted R2	0.13	0.12	0.12	0.12	0.11
F-statistic	25.74	13.19	9.04	6.79	5.43
N	169	169	169	169	169

Notes: St. Error in parenthesis. *** denotes $p < .001$. Model E also includes control variables for gender, in a leadership position, population served, and number of employees.

Figure 4.6 – OLS Predictions for Performance Targets (Left) and Training Vignettes (Right)



Note: The light grey line represents the predicted level for positive framed evaluations across the lower and upper bounds of the stated achievement level from 80% to 95%. The black line represents the predicted level for negative framed evaluations across the lower bounds of the stated achievement level; however, the figures along the horizontal axis are inverted. 95 represents a 5% stated achievement level and 80 represents a 20% achievement level.

Across all the models and both experiments, the main treatment effect is statistically significant at the $p < 0.001$ level. As the treatment variable is structured as a dummy, with 1 denoting a positive frame and 0 denoting a negative frame, this means that a positive framing of operational information results in public health professionals assigning a higher evaluation of performance to that organization. As a note, the treatment percent variable is constructed by taking the difference between the individual random numbers assigned and the mean random number assigned to the entire sample. Interestingly, in the performance target experimental vignette, the effect of the treatment percent is negative and statistically significant at the $p < 0.05$ level. This suggests that as the number increases (or decreases in the event of negative framing), the effect declines, which is contrary to what intuition would suggest. Additionally, these studies show no relationship between alternative sources of information and the overall treatment effect. In a 2015 paper by Asmus Olsen using Danish citizens, this type of related experience

moderated the effect of negative framed information (Olsen, 2015). This paper does not confirm this finding.

Limitations

As is the case in the previous study, this experiment naturally suffers from common source bias which results from both the independent (treatment) and dependent (response) variables deriving from the same source, in this case a survey (Meier & O'Toole, 2013). Given the subjective nature of the requested performance evaluation, that is a common issue in this type of study. As stated before, the risk of altering randomly selected organizational reporting schemes presented to operational decision-making and potentially the public prevents the ethical completion of such a study without a more indirect study taking place first. Another limitation of this study is the relatively small sample size; the Olsen study (2015) had a total sample of over 3,000 individuals, which produces much broader conclusions in terms of representativeness. However, one explicit purpose of this study is to inform state-level decision making, thus a smaller sample will invariably result.

Finally, a control variable may have been constructed in which individuals who were presented a performance assessment with both a positive and negative frame may have informed the study in terms of a potential solution to the issue arising from framing effects. However, creating a third (control) group would have further diluted an already small sample. The recommendations to be discussed are then based on a hypothetical control group not included in this study.

Conclusions and Future Research

This study expands previous research into the effects of information framing into public health practice for the first time and confirms many of the previously established findings in other fields. In this sample of local public health professionals, positively framed operational data will result in a more positive assessment of organizational performance, and the opposite for negatively framed data. These findings have important implications for the reporting of performance and quality improvement information in public health. Much of the existing research in performance highlights the importance of reporting in a performance management framework; this paper, however, sheds lights on potential shortcomings public health agencies should avoid.

This study did not observe major deviations from the treatment effect size observed in previous studies using citizens as the sample. This provides a rather interesting source of deliberation. Presumably, those working in public health agencies have received more specialized training in quality improvement, performance information, and general numeracy, and therefore would be expected to exhibit less vulnerability in terms of framing effects. However, this study does not support this hypothesis; public health professionals experience a similar level of sensitivity to framing effects as do citizen samples even while controlling for those who report higher experience in performance and training activities. This might suggest a possible weakness in the current state of performance in public health, and that to truly adopt such a system additional specialized training in the area is needed.

These results suggest a need to fully contextualize information when it is being presented to even a professional audience so as to avoid less than optimal decision-

making. Perhaps a solution to this issue is to provide both a positive and a negative frame when presenting such data. For example, rather than saying “this unit has successfully achieved 80% of its targets” or “this unit failed to meet 20% of its targets,” combining these into one singular statement of fact may provide important nuance and robustness to the information.

The limitations of this study provide interesting and potentially meaningful avenues for future research. The most natural next study would be to extend the sample to the entire public health population in the U.S. Given a large enough sample, variations across states may be observed and potential contributors to those variations may be identified and communicated to educational institutions. Additionally, the two selected areas of performance were rather low-risk, which may have resulted in individuals using more heuristics in their evaluations than they would have otherwise. A potentially valuable study might present a different series of indicators that vary in terms of “risk” to the public, and might evaluate whether bureaucrats are less likely to exhibit framing effects or other mental shortcuts.

Overall, this type of research is valuable to the study and indeed practice of performance management. Many scholars have suggested the difficulty in actually using performance information to make decisions beyond simply collecting routine organizational information (Julnes & Holzer, 2001; Moynihan, 2008). The routine of reporting performance information is a critical component to this process, and identifying best practices in this regard may help eliminate the adoption-utilization gap.

Chapter 5

Summative Discussion

In this dissertation, the concept of performance management in public health practice was explored through three individual studies. This first study, a qualitative case study, examined a unique statutory mandate in the State of New Jersey. Under this mandate, the Local Health Report (LHR), local health departments are required to report an extensive series of performance measures to state health authorities. This intent of this program is to allow state regulators to aggregate and analyze statewide operational metrics to identify performance trends, needs for training and technical support, and potential gaps in public health service delivery. An extensive series of interviews, focus groups, and documentation reviews provided substantive insights into the dynamics of performance management in New Jersey Local Public Health.

Performance as an unfunded mandate, although in alignment with federalism philosophy of recent decades, has severe unintended consequences. Smaller and less well-resourced agencies are disproportionately burdened by programs designed to fit the average agency. These organizations likely shift existing staff to reporting duties, thus taking time away from their service delivery responsibilities. In some cases, this can result in an organization's performance worsening due to the resource strain. In large agencies, the requirements and goals of the mandate are often less robust than within existing performance efforts. The culmination of this is a program that is only relevant to a few organizations and produces frustration in the rest.

The primary source of programmatic value comes from a centralized agency collecting, analyzing, and disseminating the programmatic information back to the reporting agencies. This can be as simple as trend analysis in a more robust series of benchmarking reports, and sharing of best practices. At any rate, the onus of value

creation is on the mandator, not the mandated. In certain local health departments, entrepreneurial leadership can moderate the resentment and frustration, and thus move the agency in the direction of fully implementing performance via the LHR. Importantly, though, leaders need to gauge the existing culture of the organization and adopt a leadership style that complements rather than agitates.

The need for a strong and centralized reporting apparatus was abundantly clear in the first study. The issue in the context of the LHR is that this system needs to be created from the group up, and typically there is no such reporting system in place. This poses several challenges to state health officials, namely in the area of data utilization, interpretation, and cognition. Reporting information that no one will use is a waste of finite resources, and reporting information that leaves room for individual bias and misinterpretation can lead to harmful outcomes. These issues inspired the second and third study of the dissertation.

In Chapter Three, the visual display of performance information was examined to test whether presenting the key performance indicators graphically would produce a greater appreciation for the information than had the information been presented numerically. This study utilized an experimental vignette design that presented randomized treatment groups with three typical performance indicators in either graphical or numerical form. Both the ratio and benchmarking indicators showed statistically significant and positive results, meaning individuals placed a greater value on the graphical data than the numerical data. The raw number indicator did not show statistically significance in this test.

The effect of size was small; however, the effort required to make this change in reporting practice is rather insignificant, thus producing a net positive outcome in terms of return on time investment. This study shows that small changes in the way performance information is reported can contribute to eliminating the adoption-use gap so frequently seen in public organizations. Additionally, it expands the field of visual analysis into public health practice where it had not been explored prior. Along with the practical implications of this study itself, it may inspire additional work in the area of data display in public performance settings that could further reduce the gap in implementation of performance.

Along with considering how performance information is to be displayed, decision-makers need also to be conscious of how they contextualize the data. It is this issue that leads to the third and final study, an examination of equivalency framing effects in public health practitioner interpretation of performance data. Information valence refers to the language that surrounds a piece of information. The same piece of underlying information (90% success/10% failure) can be perceived very differently depending on which verbs and numbers are used.

Another experiment with public health professionals was conducted to measure whether presenting equivalent data in a positive or negative frame. The tests find that public health managers are indeed susceptible to framing effects as the positively framed information resulted in a higher evaluation of organizational performance than the negatively framed information. This can have serious consequences for anyone creating reports for both policy makers and citizens. Care should be taken when drafting reports to

fully contextualize information and reduce the likelihood of mental shortcuts being taken in the evaluation of performance data.

This dissertation is an effort to identify a real-world issue, identify areas of cost and opportunity, and draw meaningful conclusions that advance both the practical and academic worlds. As the Local Health Report in the state of New Jersey has a history of frustration and underutilization, the case study identifies potential areas of improvement as well as theoretical implications. The third and fourth chapters provide incremental recommendations for how program administrators can report information to their various stakeholder groups that both encourages use and ensures accurate interpretation.

References

- Aday, L. A., Begley, C. E., Lairson, D. R., & Slater, C. H. (1993). Evaluating the medical care system: Effectiveness, efficiency and equity.
- Agranoff, R. (2006). Inside collaborative networks: Ten lessons for public managers. *Public Administration Review*, 66(s1), 56-65. doi:DOI 10.1111/j.1540-6210.2006.00666.x
- Agranoff, R., & McGuire, M. (2001). Big questions in public network management research. *Journal of Public Administration Research and Theory*, 11(3), 295-326.
- Agranoff, R., & McGuire, M. (2004). *Collaborative public management: New strategies for local governments*: Georgetown University Press.
- Alexander, C. S., & Becker, H. J. (1978). The use of vignettes in survey research. *Public opinion quarterly*, 42(1), 93-104.
- Ammons, D. (2014). *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards*: Routledge.
- Ammons, D. N. (1995). Overcoming the inadequacies of performance measurement in local government: The case of libraries and leisure services. *Public Administration Review*, 37-47.
- Ammons, D. N. (1999). A proper mentality for benchmarking. *Public Administration Review*, 105-109.
- Ammons, D. N. (2002). Performance measurement and managerial thinking. *Public Performance & Management Review*, 25(4), 344-347.
- Ammons, D. N. (2004). Productivity barriers in the public sector. *PUBLIC ADMINISTRATION AND PUBLIC POLICY-NEW YORK-*, 107, 139-164.

- Ammons, D. N., & Rivenbark, W. C. (2008). Factors influencing the use of performance data to improve municipal services: Evidence from the North Carolina benchmarking project. *Public Administration Review*, 68(2), 304-318.
- Ancker, J. S., Senathirajah, Y., Kukafka, R., & Starren, J. B. (2006). Design features of graphs in health risk communication: a systematic review. *Journal of the American Medical Informatics Association*, 13(6), 608-618.
- Andrews, M., & Moynihan, D. P. (2002). Why Reforms do not Always Have to “Work” to Succeed: A Tale of Two Managed Competition Initiatives. *Public Performance & Management Review*, 25(3), 282-297.
- Atzmüller, C., & Steiner, P. M. (2010). Experimental vignette studies in survey research. *Methodology*.
- Baekgaard, M., & Serritzlew, S. (2016). Interpreting performance information: Motivated reasoning or unbiased comprehension. *Public Administration Review*, 76(1), 73-82.
- Barnard, C. (1938). 1.(1938). The functions of the executive. *Cambridge/Mass*.
- Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public administration quarterly*, 112-121.
- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership*: Psychology Press.
- Behn, R. D. (2001). *Rethinking democratic accountability*: Brookings Institution Press.
- Behn, R. D. (2003). Why measure performance? Different purposes require different measures. *Public Administration Review*, 63(5), 586-606.

- Behn, R. D. (2007). What all mayors would like to know about Baltimore's CitiStat performance strategy. *Washington, DC: IBM Center for the Business of Government.*
- Behn, R. D. (2014). *The PerformanceStat potential: A leadership strategy for producing results*: Brookings Institution Press and Ash Center for Democratic Governance and Innovation.
- Berg, B. L., Lune, H., & Lune, H. (2004). *Qualitative research methods for the social sciences* (Vol. 5): Pearson Boston, MA.
- Berman, E., & Wang, X. (2000). Performance measurement in US counties: Capacity for reform. *Public Administration Review*, 60(5), 409-420.
- Blatter, J., & Haverland, M. (2012). *Designing case studies: Explanatory approaches in small-N research*: Palgrave Macmillan.
- Bouckaert, G. (1993). Measurement and meaningful management. *Public Productivity & Management Review*, 31-43.
- Bourdeaux, C., & Chikoto, G. (2008). Legislative influences on performance management reform. *Public Administration Review*, 68(2), 253-265.
- Burke, J. P. (2000). *The institutional presidency: Organizing and managing the White House from FDR to Clinton*: Johns Hopkins University Press.
- Carman, A. L., & Timsina, L. (2015). Public health accreditation: rubber stamp or roadmap for improvement. *American journal of public health*, 105(S2), S353-S359.

- Cavalluzzo, K. S., & Ittner, C. D. (2004). Implementing performance measurement innovations: evidence from government. *Accounting, organizations and society*, 29(3), 243-267.
- Chen, L.-W., Nguyen, A., Jacobson, J. J., Gupta, N., Bekmuratova, S., & Palm, D. (2015). Relationship between quality improvement implementation and accreditation seeking in local health departments. *American journal of public health*, 105(S2), S295-S302.
- Congress, U. S. (1993). *Government Performance and Results Act*. Retrieved from <https://www.dol.gov/ocfo/media/regs/GPRA.pdf>.
- Conlan, T. (2006). From Cooperative to Opportunistic Federalism: Reflections on the Half- Century Anniversary of the Commission on Intergovernmental Relations. *Public Administration Review*, 66(5), 663-676.
- Conlan, T. J. (1988). *New federalism: Intergovernmental reform from Nixon to Reagan*: Brookings Inst Pr.
- Conlan, T. J. (1991). And the beat goes on: Intergovernmental mandates and preemption in an era of deregulation. *Publius: The Journal of Federalism*, 21(3), 43-57.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage publications.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*: Sage.
- Davis, M. V., Cannon, M. M., Corso, L., Lenaway, D., & Baker, E. L. (2009). Incentives to encourage participation in the national public health accreditation model: a systematic investigation. *American journal of public health*, 99(9), 1705-1711.

- DeHaven- Smith, L., & Jenne, K. C. (2006). Management by inquiry: A discursive accountability system for large organizations. *Public Administration Review*, 66(1), 64-76.
- Denzin, N. K. (2008). *Collecting and interpreting qualitative materials* (Vol. 3): Sage.
- Deroose, S. F., Schuster, M. A., Fielding, J. E., & Asch, S. M. (2002). Public health quality measurement: concepts and challenges 1. *Annual review of public health*, 23(1), 1-21.
- DeSanctis, G. (1984). Computer graphics as decision aids: Directions for research. *Decision Sciences*, 15(4), 463-487.
- Destler, K. N. (2016). A Matter of Trust: Street Level Bureaucrats, Organizational Climate and Performance Management Reform. *Journal of Public Administration Research and Theory*, muw055.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: the tailored design method*: John Wiley & Sons.
- Dimock, M. E. (1945). *The executive in action*: Harper & brothers.
- Donabedian, A. (1980). The definition of quality and approaches to its assessment. *Explorations in quality assessment and monitoring*.
- Dull, M. (2009). Results-model reform leadership: Questions of credible commitment. *Journal of Public Administration Research and Theory*, 19(2), 255-284.
- Edward, T. (2001). The visual display of quantitative information. *Graphics Press, Cheshire, USA*, 4(5), 6.

- Edwards, A., Elwyn, G., Covey, J., Matthews, E., & Pill, R. (2001). Presenting risk information a review of the effects of framing and other manipulations on patient outcomes. *Journal of health communication*, 6(1), 61-82.
- Edwards, A., Elwyn, G., & Gwyn, R. (1999). General practice registrar responses to the use of different risk communication tools in simulated consultations: a focus group study. *Bmj*, 319(7212), 749-752.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550.
- Elms, B., & Wogan, J. (2016). Peak performance: How Denver's Peak Academy is saving money, boosting morale, and just maybe changing the world: Washington, DC: Governing.
- Elting, L. S., Martin, C. G., Cantor, S. B., & Rubenstein, E. B. (1999). Influence of data display formats on physician investigators' decisions to stop clinical trials: prospective trial with repeated measures. *Bmj*, 318(7197), 1527-1531.
- Erwin, P. C. (2008). The performance of local health departments: a review of the literature. *Journal of Public Health Management and Practice*, 14(2), E9-E18.
- Erwin, P. C., & Brownson, R. C. (2016). Macro Trends and the Future of Public Health Practice. *Annual review of public health*(0).
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative inquiry*, 12(2), 219-245.
- Follett, M. P. (1926). The giving of orders. *Scientific foundations of business administration*, 156-162.

- Freund, C. G., & Liu, Z. (2000). Local health department capacity and performance in New Jersey. *Journal of Public Health Management and Practice*, 6(5), 42-50.
- Gallo, N., & Lewis, D. E. (2012). The consequences of presidential patronage for federal agency performance. *Journal of Public Administration Research and Theory*, 22(2), 219-243.
- George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences*: Mit Press.
- Gerring, J. (2004). What is a case study and what is it good for? *American political science review*, 98(02), 341-354.
- Green, C. G., Harrison, M., Henderson, K., & Lenihan, A. (1998). Total quality management in the delivery of public health services: a focus on North Carolina WIC programs. *Journal of Public Health Management and Practice*, 4(5), 72-81.
- Greenwood, P. J., Ellis, L., & Gross, C. R. (1991). *Knowledge gains from a computer-based health risk appraisal*. Paper presented at the Proceedings of the Annual Symposium on Computer Application in Medical Care.
- Greiner, J. M. (1996). Positioning performance measurement for the twenty-first century. *Organizational performance and measurement in the public sector*, 11-50.
- Greitens, T. J., & Joaquin, M. E. (2010). Policy typology and performance measurement: Results from the Program Assessment Rating Tool (PART). *Public Performance & Management Review*, 33(4), 555-570.
- Groves, R. M., Fowler Jr, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2011). *Survey methodology* (Vol. 561): John Wiley & Sons.
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*: Sage.

- Gueorguieva, V., Accius, J., Apaza, C., Bennett, L., Brownley, C., Cronin, S., & Preechyanud, P. (2009). The Program Assessment Rating Tool and the government performance and results act: Evaluating conflicts and disconnections. *The American review of public administration*, 39(3), 225-245.
- Hainmueller, J., Hangartner, D., & Yamamoto, T. (2015). Validating vignette and conjoint survey experiments against real-world behavior. *Proceedings of the National Academy of Sciences*, 112(8), 2395-2400.
- Handler, A., Issel, M., & Turnock, B. (2001). A conceptual framework to measure performance of the public health system. *American journal of public health*, 91(8), 1235-1239.
- Handler, A. S., & Turnock, B. J. (1996). Local health department effectiveness in addressing the core functions of public health: essential ingredients. *Journal of public health policy*, 460-483.
- Hartley, J. (2004). Case study research. *Essential guide to qualitative methods in organizational research*, 323-333.
- Hibbard, J. H., Peters, E., Slovic, P., Finucane, M. L., & Tusler, M. (2001). Making health care quality reports easier to use. *The Joint Commission journal on quality improvement*, 27(11), 591-604.
- Hibbard, J. H., Slovic, P., Peters, E., & Finucane, M. L. (2002). Strategies for reporting health plan performance information to consumers: evidence from controlled studies. *Health services research*, 37(2), 291-313.

- Hildon, Z., Allwood, D., & Black, N. (2011). Impact of format and content of visual display of data on comprehension, choice and preference: a systematic review. *International Journal for Quality in Health Care*, 24(1), 55-64.
- Ho, A. T.-K. (2006). Accounting for the value of performance measurement from the perspective of Midwestern mayors. *Journal of Public Administration Research and Theory*, 16(2), 217-237.
- Ho, A. T. K. (2011). PBB in american local governments: it's more than a management tool. *Public Administration Review*, 71(3), 391-401.
- Holzer, M., Ballard, A., Kim, M., Peng, S., & Deat, F. (2017). Obstacles and opportunities for sustaining performance management systems. *International Journal of Public Administration*, 1-12.
- Hou, Y., Moynihan, D. P., & Ingraham, P. W. (2003). Capacity, management, and performance exploring the links. *The American review of public administration*, 33(3), 295-315.
- Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), 1277-1288.
- James, O., Jilke, S. , & Van Ryzin, G. G. (2017). *Experiments in Public Management Research: Challenges and Contributions*: Cambridge University Press.
- Jarvenpaa, S.-L., & Dickson, G. W. (1988). Graphics and managerial decision making: Research-based guidelines. *Communications of the ACM*, 31(6), 764-774.
- Jensen, J. L., & Rodgers, R. (2001). Cumulating the intellectual gold of case study research. *Public Administration Review*, 61(2), 235-246.

- Julnes, P. D., & Holzer, M. (2001). Promoting the utilization of performance measures in public organizations: An empirical study of factors affecting adoption and implementation. *Public Administration Review*, 61(6), 693-708. doi:10.1111/0033-3352.00140
- Jung, C. S. (2013). Navigating a rough terrain of public management: Examining the relationship between organizational size and effectiveness. *Journal of Public Administration Research and Theory*, 23(3), 663-686.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263-292.
- Kaplan, B., & Maxwell, J. A. (2005). Qualitative research methods for evaluating computer information systems *Evaluating the organizational impact of healthcare information systems* (pp. 30-55): Springer.
- King, G., Keohane, R. O., & Verba, S. (1994). *Designing social inquiry: Scientific inference in qualitative research*: Princeton university press.
- Kroll, A. (2015). Explaining the use of performance information by public managers: A planned-behavior approach. *The American review of public administration*, 45(2), 201-215.
- Kroll, A., & Moynihan, D. P. (2015). Does training matter? Evidence from performance management reforms. *Public Administration Review*, 75(3), 411-420.
- Kühberger, A. (1998). The influence of framing on risky decisions: A meta-analysis. *Organizational behavior and human decision processes*, 75(1), 23-55.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological bulletin*, 108(3), 480.
- Kuzel, A. J. (1992). Sampling in qualitative inquiry.

- Landrum, L. B., & Baker, S. L. (2004). Managing complex systems: performance management in public health. *Journal of Public Health Management and Practice, 10*(1), 13-18.
- Levin, I. P., & Gaeth, G. J. (1988). How consumers are affected by the framing of attribute information before and after consuming the product. *Journal of consumer research, 15*(3), 374-378.
- Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational behavior and human decision processes, 76*(2), 149-188.
- Levin, I. P., Schnittjer, S. K., & Thee, S. L. (1988). Information framing effects in social and personal decisions. *Journal of experimental social psychology, 24*(6), 520-529.
- Lewis, D. E. (2010). *The politics of presidential appointments: Political control and bureaucratic performance*: Princeton University Press.
- Long, E., & Franklin, A. L. (2004). The paradox of implementing the government performance and results act: top- down direction for bottom- up implementation. *Public Administration Review, 64*(3), 309-319.
- Lovelace, K. (2001). Multidisciplinary top management teamwork: Effects on local health department performance: LWW.
- Madamala, K., Sellers, K., Beitsch, L. M., Pearsol, J., & Jarris, P. (2012). Quality improvement and accreditation readiness in state public health agencies. *Journal of Public Health Management and Practice, 18*(1), 9-18.

- Mahler, J. (1997). Influences of organizational culture on learning in public agencies. *Journal of Public Administration Research and Theory*, 7(4), 519-540.
- Mauer, B. J., Mason, M., & Brown, B. (2004). Application of quality measurement and performance standards to public health systems: Washington State's approach. *Journal of Public Health Management and Practice*, 10(4), 330-337.
- Mays, G. P., Halverson, P. K., & Miller, C. A. (1998). Assessing the performance of local public health systems: a survey of state health agency efforts. *Journal of Public Health Management and Practice*, 4(4), 63-78.
- Mays, G. P., McHugh, M. C., Shim, K., Lenaway, D., Halverson, P. K., Moonesinghe, R., & Honoré, P. (2004). Getting what you pay for: public health spending and the performance of essential public health services. *Journal of Public Health Management and Practice*, 10(5), 435-443.
- Mays, G. P., McHugh, M. C., Shim, K., Perry, N., Lenaway, D., Halverson, P. K., & Moonesinghe, R. (2006). Institutional and economic determinants of public health system performance. *American journal of public health*, 96(3), 523-531.
- McNab, R. M., & Melese, F. (2003). Implementing the GPRA: Examining the prospects for performance budgeting in the federal government. *Public Budgeting & Finance*, 23(2), 73-95.
- Meier, K. J., & O'Toole, L. J. (2013). Subjective organizational performance and measurement error: Common source bias and spurious relationships. *Journal of Public Administration Research and Theory*, 23(2), 429-456.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*: sage.

- Moynihan, D. P. (2005). Goal- based learning and the future of performance management. *Public Administration Review*, 65(2), 203-216.
- Moynihan, D. P. (2006). What do we talk about when we talk about performance? Dialogue theory and performance budgeting. *Journal of Public Administration Research and Theory*, 16(2), 151-168.
- Moynihan, D. P. (2008). *The dynamics of performance management: Constructing information and reform*: Georgetown University Press.
- Moynihan, D. P. (2009). The response to hurricane Katrina. *Internactional Risk Governance Council. Geneva*, 1-11.
- Moynihan, D. P., & Lavertu, S. (2012). Does involvement in performance management routines encourage performance information use? Evaluating GPRA and PART. *Public Administration Review*, 72(4), 592-602.
- Moynihan, D. P., & Pandey, S. K. (2010). The big question for performance management: Why do managers use performance information? *Journal of Public Administration Research and Theory*, 20(4), 849-866.
- Moynihan, D. P., Pandey, S. K., & Wright, B. E. (2011). Setting the table: How transformational leadership fosters performance information use. *Journal of Public Administration Research and Theory*, mur024.
- Nielsen, P. A. (2013). Performance management, managerial authority, and public service performance. *Journal of Public Administration Research and Theory*, mut025.
- Ogiela, L., & Ogiela, M. R. (2009). *Cognitive techniques in visual data interpretation* (Vol. 228): Springer.

- Olsen, A. L. (2013). Leftmost-digit-bias in an enumerated public sector? An experiment on citizens' judgment of performance information. *Judgment and Decision Making*, 8(3), 365.
- Olsen, A. L. (2015). Citizen (dis) satisfaction: An experimental equivalence framing study. *Public Administration Review*, 75(3), 469-478.
- Parmenter, D. (2012). *Key performance indicators for government and non profit agencies: implementing winning KPIs*: John Wiley & Sons.
- PHAB, P. H. A. B. (2017). Accreditation Activity.
- Poister, T. H., & Streib, G. (1999). Performance measurement in municipal government: Assessing the state of the practice. *Public Administration Review*, 325-335.
- Pollitt, C. (2000). How do we know how good public services are. *Governance in the Twenty-First Century: Revitalizing the Public Service (McGill/Queens University Press, Montreal)*, 119-154.
- Price, M., Cameron, R., & Butow, P. (2007). Communicating risk information: The influence of graphical display format on quantitative information perception—Accuracy, comprehension and preferences. *Patient education and counseling*, 69(1), 121-128.
- Radin, B. A. (1998). The Government Performance and Results Act (GPRA): Hydra-headed monster or flexible management tool? *Public Administration Review*, 307-316.
- Radin, B. A. (2000). The Government Performance and Results Act and the tradition of federal management reform: square pegs in round holes? *Journal of Public Administration Research and Theory*, 10(1), 111-135.

- Radin, B. A. (2006). *Challenging the performance movement*.
- Remler, D. K., & Van Ryzin, G. G. (2010). *Research methods in practice: Strategies for description and causation*: Sage Publications.
- Richards, T. B., Rogers, J. J., Christenson, G. M., Miller, C. A., Taylor, M. S., & Cooper, A. D. (1995). Evaluating local public health performance at a community level on a statewide basis. *Journal of Public Health Management and Practice*, 1(4), 70-83.
- Rohlfing, I. (2012). *Case Studies and Causal Inference: an integrative framework*: Palgrave Macmillan.
- Rosenbaum, H. D., & Ugrinsky, A. (1994). *The presidency and domestic policies of Jimmy Carter* (Vol. 327): Praeger.
- Schaubroeck, J., & Muralidhar, K. (1991). A meta-analysis of the relative effects of tabular and graphic display formats on decision-making performance. *Human Performance*, 4(2), 127-145.
- Schein, E. H. (2010). *Organizational culture and leadership* (Vol. 2): John Wiley & Sons.
- Scutchfield, F. D., Knight, E. A., Kelly, A. V., Bhandari, M. W., & Vasilescu, I. P. (2004). Local public health agency capacity and its relationship to public health system performance. *Journal of Public Health Management and Practice*, 10(3), 204-215.
- Selznick, P. (1957). *Leadership in administration: A sociological interpretation*. Berkeley, Cal.

- Suen, J., Christenson, G. M., Cooper, A., & Taylor, M. (1995). Analysis of the current status of public health practice in local health departments. *American Journal of Preventive Medicine*, 11(6 Suppl), 51-54.
- Tansey, O. (2007). Process tracing and elite interviewing: a case for non-probability sampling. *PS: Political Science & Politics*, 40(04), 765-772.
- Taylor, J. (2001). The impact of performance indicators on the work of university academics: evidence from Australian universities. *Higher education quarterly*, 55(1), 42-61.
- Taylor, J. (2011). Factors influencing the use of performance information for decision making in Australian state agencies. *Public administration*, 89(4), 1316-1334.
- Terry, L. D. (2015). *Leadership of public bureaucracies: The administrator as conservator*: Routledge.
- Turnock, B. J., Handler, A., Hall, W., Lenihan, D. P., & Vaughn, E. (1995). Capacity-building influences on Illinois local health departments. *Journal of Public Health Management and Practice*, 1(3), 50-58.
- Turnock, B. J., & Handler, A. S. (1997). From measuring to improving public health practice. *Annual review of public health*, 18(1), 261-282.
- Turnock, B. J., Handler, A. S., & Miller, C. A. (1998). Core function-related local public health practice effectiveness. *Journal of Public Health Management and Practice*, 4(5), 26-32.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453-458.

- Wang, X., & Berman, E. (2001). Hypotheses about performance measurement in counties: Findings from a survey. *Journal of Public Administration Research and Theory: J-PART*, 403-427.
- Weiner, M. D., Puniello, O. T., & Noland, R. B. (2016). *Conducting Efficient Transit Surveys of Households Surrounding Transit-Oriented Developments*. Paper presented at the Transportation Research Board 95th Annual Meeting.
- Whitehouse. (2008). Expect More - PART. Retrieved from <https://georgewbush-whitehouse.archives.gov/omb/expectmore/part.html>
- Wolff, J. A., & Pett, T. L. (2006). Small- firm performance: modeling the role of product and process improvements. *Journal of Small Business Management*, 44(2), 268-284.
- Wright, D. S. (1978). *Understanding intergovernmental relations*: Duxbury Press.
- Yang, K., & Holzer, M. (2006). The performance–trust link: Implications for performance measurement. *Public Administration Review*, 66(1), 114-126.
- Yang, K., & Hsieh, J. Y. (2007). Managerial effectiveness of government performance measurement: testing a middle- range model. *Public Administration Review*, 67(5), 861-879.
- Yeager, V. A., Ferdinand, A. O., Beitsch, L. M., & Menachemi, N. (2015). Local public health department characteristics associated with likelihood to participate in national accreditation. *American journal of public health*, 105(8), 1653-1659.
- Yin, R. K. (2013). *Case study research: Design and methods*: Sage publications.
- Yin, R. K. (2015). *Qualitative research from start to finish*: Guilford Publications.

- Zahner, S. J., & Vandermause, R. (2003). Local health department performance: compliance with state statutes and rules. *Journal of Public Health Management and Practice*, 9(1), 25-34.
- Zammuto, R. F., & Krakower, J. Y. (1991). *Quantitative and qualitative studies of organizational culture*: JAI Press Inc.

Appendix

Appendix A – Local Health Department Interview Protocol

LOCAL HEALTH REPORT - PROGRAM EVALUATION: INTERVIEW PROTOCOL

PROJECT INTRODUCTION

The Rutgers University School of Public Health (SPH) and the School of Public Affairs and Administration (SPAA) have proposed a complete review of the Local Health Report (LHR) program within the New Jersey Department of Health Office (NJ DOH) of Local Health.

The purpose of the review is:

1. Provide a complete overview of the program from inception to deployment.
 2. Investigate the current state of the program both at the state level and at the local level.
 3. Issue proposed revisions and updates to various components of the program for consideration in the next round of updates.
 4. Develop a proof-of-concept for using the LHR data to predict performance outcomes.
-

QUESTION FORMAT

This format of questions is designed to organize the interviewer's thoughts and make finding appropriate questions less time consuming.

1. Data Category

- a. Topic Subcategory
 - i. Question

1. Possible probe/follow-up
-

INTERVIEW QUESTIONS

1. Current LHR Program Conditions

- a. Involvement in development of program
 - i. *What was your level of involvement in the initial design or subsequent redesigns of the Local Health Report program?*
 1. If no involvement – Were you asked to be involved and did not?
- b. Process of completing LHR
 - i. *What kind and how many resources do you dedicate each year to completing the LHR?*
 1. How time consuming is the overall process of completing the LHR?
 2. Overall, how burdensome do you consider this program to be?
 - ii. *Do you fill on the LHR continually throughout the year or during a shorter period of time close to when the report is due?*
 1. Why do you use this process?
- c. Usage of LHR data
 - i. *Do you have any examples of when you used the LHR data?*
 1. If YES – please describe
 2. If NO – Why have you not used the data?
 - ii. *Is your staff familiar with the LHR data?*
 1. If YES, how do they perceive its usefulness?

2. If NO, why not?
 - iii. *If you had more time and/or resources, how could you use the current LHR data in your decision making process?*
 1. Why is this the case?
 - iv. *Overall, how relevant is the data collected by the LHR to your agencies work and desired outcomes?*
 1. Why is this the case?
 - v. *To what extent do you think the State uses the LHR data?*
 1. What makes you feel that way?
2. **Potential Revisions to LHR Program**
- a. Revisions to type of data
 - i. *What would you change about the type of data being collected by the LHR program?*
 1. Anything else?
 - ii. *How much potential is there in local public health to improve operations and performance through the collection and analysis of this kind of data?*
 - b. Revisions to the process of collecting data
 - i. *What are your thoughts on the Hippocrates program?*
 - ii. *What suggestions do you have for improving the process of collecting and reporting LHR data to the state?*
 1. Anything else?
 - c. General thoughts
 - i. *What is the potential value of a system like this?*
 1. Could you elaborate on why that is?
3. **Performance Management in Public Health**
- a. Individual knowledge of performance management
 - i. *How familiar are you with performance management?*
 - ii. *Could you explain what performance management means to you?*
 - iii. *Do you currently collect and use performance data for your agency?*
 1. If NO, why not?
 2. If YES. What kind of data do you collect? How do you use that data?
 - b. *What was the state of performance management at your organization prior to the creation of the LHR program?*
 - c. Potential Value in Local Public Health
 - i. *What is the potential value of performance measurement and management in local public health?*
 1. Why is that?
 - ii. *How do the activities of local public health help or hinder the usage of performance measurement and management?*
 - d. Performance Information Sharing and Networking
 - i. *To what extent do you communicate with other public health agencies regarding your agencies activities?*
 - ii. *What potential value do you see in sharing performance information and data with other health agencies, whether they be local, state, or federal?*

1. Why is this the case?
- iii. *What do you see as the best way of facilitating the sharing of data and best practices among local health agencies?*
 1. Do you think the LHR has the potential to serve this purpose?

Appendix B – State Health Stakeholder Interview Protocol

LOCAL HEALTH REPORT - PROGRAM EVALUATION: INTERVIEW PROTOCOL – NJ STATE PERSONNEL

PROJECT INTRODUCTION

The Rutgers University School of Public Health (SPH) and the School of Public Affairs and Administration (SPAA) have proposed a complete review of the Local Health Report (LHR) program within the New Jersey Department of Health Office (NJ DOH) of Local Health.

The purpose of the review is:

5. Provide a complete overview of the program from inception to deployment.
6. Investigate the current state of the program both at the state level and at the local level.
7. Issue proposed revisions and updates to various components of the program for consideration in the next round of updates.
8. Develop a proof-of-concept for using the LHR data to predict performance outcomes.

QUESTION FORMAT

This format of questions is designed to organize the interviewer's thoughts and make finding appropriate questions less time consuming.

2. Data Category

- a. Topic Subcategory
 - i. Question
 1. Possible probe/follow-up
-

INTERVIEW QUESTIONS

4. Current LHR Program Conditions

- a. Involvement in development of program
 - i. *What was your level of involvement in the initial design or subsequent redesigns of the Local Health Report program?*
 1. If no involvement – Were you asked to be involved and did not?
- b. Process of Administering the Program
 - i. *How do you assist in the collection and organization of LHR data?*
 - ii. *How resource intensive do you think the program is for local health departments?*
- c. Usage of LHR data
 - i. *Do you have any examples of when you used the LHR data?*
 1. If YES – please describe
 2. If NO – Why have you not used the data?
 - ii. *Is your staff familiar with the LHR data?*
 1. If YES, how do they perceive its usefulness?
 2. If NO, why not?

- iii. After all the data is collected, what are your discussions like with local department regarding the annual findings?*
- iv. If you had more time and/or resources, how could you use the current LHR data in your decision making process?*
 - 1.** Why is this the case?
- v. Overall, how relevant is the data collected by the LHR to your agencies work and desired outcomes?*
 - 1.** Why is this the case?
- vi. To what extent do you think the local departments use the data?*
 - 1.** What makes you feel that way?

5. Potential Revisions to LHR Program

- a.** Revisions to type of data
 - i. What would you change about the type of data being collected by the LHR program?*
 - 1.** Anything else?
 - ii. How much potential is there in local public health to improve operations and performance through the collection and analysis of this kind of data?*
- b.** Revisions to the process of collecting data
 - i. What are your thoughts on the Hippocrates program?*
 - ii. What suggestions do you have for improving the process of collecting and reporting LHR data to the state?*
 - 1.** Anything else?
- c.** General thoughts
 - i. What is the potential value of a system like this?*
 - 1.** Could you elaborate on why that is?

6. Performance Management in Public Health

- a.** Individual knowledge of performance management
 - i. How familiar are you with performance management?*
 - ii. Could you explain what performance management means to you?*
 - iii. Do you currently collect and use performance data for your agency?*
 - 1.** If NO, why not?
 - 2.** If YES. What kind of data do you collect? How do you use that data?
- b.** *What was the state of performance management at your organization prior to the creation of the LHR program?*
- c.** Potential Value in Local Public Health
 - i. What is the potential value of performance measurement and management in local public health?*
 - 1.** Why is that?
 - ii. How do the activities of local public health help or hinder the usage of performance measurement and management?*
- d.** Performance Information Sharing and Networking
 - i. To what extent do you communicate with other public health agencies regarding your agencies activities?*

- ii. *What potential value do you see in sharing performance information and data with other health agencies, whether they be local, state, or federal?*
 - 1. Why is this the case?
- iii. *What do you see as the best way of facilitating the sharing of data and best practices among local health agencies?*
 - 1. Do you think the LHR has the potential to serve this purpose?

Appendix C – Case Study Survey Questionnaire

Q1 <p>Rutgers University has been commissioned to complete a review of the Local Health Report (LHR) program within the New Jersey Department of Health Office of Local Health. Your insights and expertise are critical to the success of this project and we ask for your support in this endeavor. <o:p></o:p></p> <p>
</p> <p>The purpose of the review is:<o:p></o:p></p> <p>1. Provide a complete overview of the program from inception to deployment.<o:p></o:p></p> <p>2. Investigate the current state of the program both at the state level and at the local level.<o:p></o:p></p> <p>3. Propose revisions and updates to the program for consideration in the next round of updates.</p><p>
</p><p>Your answers will only be reported in aggregate and any identifying information will be housed separately from the survey data and destroyed once the study is completed. This survey should only take around 20 minutes to complete.</p>

Q2 To what extent were you involved in the most recent revisions of the LHR?

- ☐ Not involved at all
- ☐ Somewhat involved
- ☐ High Involved

If Not involved at all Is Selected, Then Skip To These next few questions refer to the...

Q3 What impact do you feel you had on the revision of the report?

- ☐ None
- ☐ Little
- ☐ Some
- ☐ Substantial

Q4 These next few questions refer to the CURRENT LHR.

Q5 How do you complete the LHR?

- ☐ Gradually throughout the year
- ☐ All at once, close to the date it is due
- ☐ Other (Please explain) _____

Q6 How resource intensive is the completion of the LHR?

- ☐ Not very resource intensive at all
- ☐ Somewhat resource intensive
- ☐ Highly Resource Intensive

Q7 Overall, how effective is the Hippocrates reporting system?

- ☐ Very Inneffective
- ☐ Somewhat inneffective
- ☐ Somewhat effective
- ☐ Very effective

Q8 Please use the space below to describe your experience with Hippocrates.

Q9 Outside of reporting to the Department of Health, for what purpose(s) do you use the LHR?
(Check all that apply)

- ☐ Reporting to your governing body
- ☐ Evaluating internal organizational performance
- ☐ Facilitating discussions with other health agencies/experts
- ☐ Communicating public health activities with constituency
- ☐ None
- ☐ Other (Please explain) _____

Q10 To what extent do you use the data collected by the LHR to inform your decisions?

- ☐ Not at all
- ☐ Very little
- ☐ Somewhat
- ☐ Greatly

Q11 If you had the time and resources to fully investigate the data, how valuable do you think the current LHR data could be to your agency?

- ☐ Not at all valuable
- ☐ Somewhat Valuable
- ☐ Highly Valuable

Q12 To what extent do you think the State DOH or other state agencies use the data collected by the LHR?

- ☐ Do not use it at all
- ☐ Use it occasionally
- ☐ Use it frequently

Q13 The next few questions are about your thoughts on what could improve the LHR.

Q14 Which area do you think is in most need of improvement?

- ☐ The type of data collected
- ☐ The method the data is collected and reported
- ☐ Communication/assistance from the State DOH
- ☐ Other (Please explain) _____

Q15 Please use this space to describe your ideal changes to the program to the LHR. The more specific and detailed you are, the more valuable and impactful your insights will be to the program.

Q16 If appropriate changes are made, what is the potential value of the LHR to your agency?

- ☐ Not at all valuable
- ☐ Somewhat valuable
- ☐ Highly valuable

Q32 Please use this space to discuss how you might use LHR data in your agency, if the changes you discussed above are implemented.

Q18 These next few questions are about the usage of performance data, in general, in public health.

Q19 How familiar are you with performance measurement and management?

- ☐ Not at all familiar
- ☐ Slightly familiar
- ☐ Moderately familiar
- ☐ Very familiar

Q20 To what extent do you collect and use performance data in your agency?

- ☐ Not at all
- ☐ Very little
- ☐ A moderate amount
- ☐ A great deal

Q21 How frequently do you currently communicate with other health agencies regarding performance information?

- ☐ Not at all
- ☐ Infrequently
- ☐ Somewhat frequently
- ☐ Very frequently

Q22 How valuable might this type of communication be for your organization? (Sharing data, best practices, etc)

- ☐ Not at all valuable
- ☐ Very little value
- ☐ Somewhat valuable
- ☐ Highly valuable

Q33 Did you complete the most recent NAACHO "National Profile of Local Health Departments"

- ☐ Yes
- ☐ No

If Yes Is Selected, Then Skip To When making organization decisions, h...

Q35 Why was the most recent NAACHO profile not completed for you agency?

Q36 When making organizational decisions, how useful is the information and data contained in the NAACHO profile?

- ☐ Not at all valuable
- ☐ Somewhat valuable
- ☐ Valuable
- ☐ Very valuable

If Not at all valuable Is Selected, Then Skip To If there is any additional informatio...

Q39 Please describe any example(s) of when you have used NACCHO profile data in your decision making. (If any)

Q37 If the NACCHO profile had additional questions specific to New Jersey, might that be a good alternative to the LHR?

- ☐ Yes
- ☐ No

Q23 These next few questions ask about you and are simply used for categorizing the survey results.

Q24 How many years of experience do you have in public health?

Q25 Please enter the highest level of education you have achieved.

- ☐ Four year degree
- ☐ Graduate Degree (MPH)
- ☐ Graduate degree (Other)
- ☐ MD/PhD/JD

Q26 What is the population served by your agency?

Q27 How many full time employees (FTEs) work in your department? (regular, contracted and other)

Q28 What is your department's estimated annual operating budget?

Q29 About how long have you been in your current position?<div><i>Years</i></div>

Q30 If there is any additional information regarding your experiences with the LHR, please use the space provided to share it.

Q31 You're finished! Thank you very much for your time and expertise. The insights you have provided are invaluable. We will be conducting a series of individual interviews with local public health professionals to gather additional information and context for our report. If you would like to participate in an interview, please provide the following information below:<div>1. Your Name</div><div>2. Your Organization</div><div>3. Your email address & Telephone Number</div>

Appendix D – Case Study IRB Protocol**ATTACHMENT 1: RESEARCH PROTOCOL****New Jersey Department of Health Local Health Report Program Evaluation****Objectives**

This project will investigate the effectiveness of a state mandated local health agency data-reporting and performance measurement program in New Jersey (LHR program). The goal is to determine the overall benefit of the program for state and local health agencies as well as the overall burden the program places on those tasked with administering it. Additionally, a series of recommendations for revisions and improvements will be provided. These recommendations will be made based on the research findings as well as existing research in the field.

Background and Rationale

The topic of performance measurement and management in public agencies has been well studied in recent decades. Research suggests that many local agencies are, at least in some fashion, measuring their performance (Behn, 2003; Julnes & Holzer, 2001). Beyond that, the conditions under which local agencies are most likely to actually use the measures they collect in their decision making processes have been studied (D. N. Ammons & Rivenbark, 2008). These performance systems are traditionally home grown, developed within the context of each individual organization (Behn, 2014). This system of disparate data collection systems and styles results in wide variation of the type of information being analyzed by each organization, thus making cross-organization comparison difficult (D. N. Ammons, 1999). This condition also makes the formation of performance and management networks a challenging task to complete (R.

Agranoff, 2006; R. Agranoff & McGuire, 2001; Robert Agranoff & McGuire, 2004). Several major questions remain unanswered regarding how to create a performance measurement system that; (1) allows for standardized data collection, promoting the usage of benchmarking and networking and; (2) fulfills the unique needs of the various agencies within the system. This study will explore the usage of state mandated performance data reporting policies as a method of creating widely used performance systems and a method of promoting the networking and benchmarking of data across the various agencies covered by the policy. The New Jersey Department of Health currently administered one such reporting policy, within which all local and county health authorities in the state are required to report the same type of performance data. This study will serve as an evaluation for this program, describing the strengths and weaknesses and developing a proof of concept for a centralized performance data reporting system. This system, a first of its kind in the country, has the potential to serve as a model for all other state health departments and give health agencies a practical tool to use in their efforts to improve service delivery while containing costs.

Procedures

RESEARCH DESIGN

This study will employ a mixed-method approach including a qualitative case study analysis of the New Jersey Department of Health LHR program as well as longitudinal regression analysis of the organizational performance data collected under the LHR program.

The case study analysis of the program will utilize interviews of key individuals involved in both the creation and ongoing administration of the program. The researcher will also collect archival documentation related to programmatic design and implementation. The LHR program requires the reporting of organizational activity data, such as the number of restaurants inspected or the number of remedial actions taken for a certain sector. This data will be combined with publically available socioeconomic and organizational capacity data in order to explore potential causal relationships impacting public health agency performance.

SAMPLE

There are two distinct populations of interest in this study. The first is all those at the State of New Jersey involved in the design and implantation of the LHR program. This population is 12 individuals. An attempt will be made to interview all 12 individuals for this study. The second population is local health officers in the state of New Jersey. The size of this population is roughly 90. Two rounds of sampling will be performed for this population. The first will be volunteer sampling in which a notice will be sent from the state Department of Health asking for volunteers to assist in the study. The second will be selective direct requests to local health officers whose jurisdiction fits size and demographic characteristics not fully represented by the volunteer organizations in the first round. For this population, a target sample has been set at 20 local health officers. Individuals of varying tenure and education will be recruited as well as health officers representing agencies of varying size, competency and socioeconomic background.

MEASUREMENT / INSTRUMENTATION

A major component of the program evaluation will be to test the power of various organizational and human capital variables to predict the outcomes of the performance measures being reporting in the LHR report. These variables of interest are:

- Management education
- Management tenure
- Organizational funding
- Employee education
- Employee tenure
- Socioeconomic characteristics of the jurisdiction

Additional relevance of the performance measures in the LHR report will be conducted in the form of content validity. Subject matter experts will be consulted as to their attitudes towards the various required data points in the program. This data will be collected in the qualitative component of the study.

STUDY SITE(S)/LOCATION OF PROCEDURES:

Site 1 – Rutgers University School of Public Health, Piscataway, NJ

Site 2 – Rutgers University School of Public Affairs and Administration, Newark, NJ

Sites 2 and 3 will be used to conduct telephone interviews of the various local health officers. Interviews of New Jersey Department of Health employees will be conducted at site 1. These locations were chosen in order to increase the convenience, and therefore willingness to participate, of the subjects. The researchers will not require any subject to travel in order to conduct interviews.

DETAILED STUDY PROCEDURES

Interviews will be made in a semi-structured fashion, with a pre-designed question protocol that allows for follow-up and probing for additional information. These interviews will be targeted for 30 minutes each. Personal identification information will be stored separately from the interview transcripts and no study data will be sent via email. Initial interview recordings will be stored locally on the researcher's computer and then transferred to an external hard drive at the School of Public Affairs and Administration in Newark, NJ. No personal information is available in the quantitative section of the report. This data solely contains operational information such as the number of a specific task completed within a given period of time. No employee or citizen information is collected by the LHR program. This data is stored at the New Jersey Department of Health in Trenton, NJ.

CONSENT PROCEDURES:

The study will be explained to the subject by the Principal Investigator, the consent will be read, and the subject's questions answered. The subject will initial all pages, then sign the consent form. A dated and signed copy will be given to the subject.

The primary language of all subjects is English, eliminating the need for a translator. All subjects are noninstitutionalized adults over the age of 18 years old. The questions being asked pertain to their perceptions of a program and will not be of a sensitive nature.

INTERNAL VALIDITY

The interview protocol was developed by the research after conducting background research on the LHR program. Those involved in the program were not involved in protocol creation as to avoid biasing the questions being asked.

DATA ANALYSIS

Traditional content analysis will be used to analyze the textual data gained from the interviews. Codebooks will be included as appendixes to the final report. For the quantitative data, multivariate regression modeling will be used to identify relationships between organization capacity variables and the performance of each agency. This methods allows the researcher to control for other intervening variables and isolate the impact of each variable individually.

Appendix E – Survey Experiment IRB Protocol

NON-INTERVENTIONAL/METHODOLOGICAL RESEARCH PROTOCOL TEMPLATE

(HRP-503b)

INSTRUCTIONS

This template should be used by social-behavioral and biomedical researchers to prepare a protocol document for any research involving various types of interactional or observational methodologies: observations, interviews, focus groups, surveys, program evaluations, quality of life or interactional research.

For red sections that may not be applicable to your research: replace the instructional text in blue with "N/A"

As you are writing the protocol, you may remove all blue instructions in italics so that they are not contained in the final version of your protocol.

NOTE:

- a. This protocol uses the term, "**research**" whereas some disciplines prefer and/or methodologies dictate other terms such as "pilot", "evaluation", "inquiry", "methodologies", "investigation", "probing", "examination", "case study", "ethnographic approach", "planned methods", etc.

- b. This protocol uses the term, “**subjects**” whereas some disciplines prefer and/or methodologies dictate other terms such as “participants”, “key informants”, “stakeholders”, “respondents”, “groups”, “individuals”, etc.
- c. This protocol uses the term, “**data**” whereas some disciplines prefer and/or methodologies dictate other terms as “observations”, “narratives”, “stories”, “qualitative outcomes”, “content analysis”, “ideas/knowledge share”, “source documents”, “artifacts”, “findings”, etc.

STUDY INFORMATION

Title of Project: Motivated Reasoning in Public Managers’ Interpretation of Performance Information

Principal Investigator:

Name: Andrew Ballard

Department/School/Division: School of Public Affairs and Administration

Contact Information: Telephone Number & Email Address : (810) 429-8242, andrew.ballard@rutgers.edu

PROTOCOL VERSION NUMBER AND DATE:

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1.0 Research Design

1.1 Purpose/Specific Aims

The purpose of this research is to evaluate how presenting data in different visual and contextual arrangements influence the way in which public health employees interpret information.

A. Objectives

The results of this study will help academics and professionals frame and display information to ensure the maximum use and more accurate interpretation of performance data.

B. Hypotheses / Research Question(s)

H1: Political ideology influences the way public managers interpret public service delivery performance information.

1.2 Research Significance (Briefly describe the following in 500 words or less):

Performance information has long been viewed as a means of creating information symmetry in public organizations and encouraging decisions based on evidence rather than instinct and historical norms (Behn, 2003). However, research into how individuals interpret

information may challenge the ideals of performance management. Heuristics, or mental shortcuts, have been found in many instances of data interpretation (Kunda, 1990). This phenomenon creates a scenario where different individuals can be presented with the same information, simply presented differently, yet interpret it differently.

A growing body of research in the field of public management has shown that when considering issues of public goods and services, the context or “framing” of information can influence the way in which individuals interpret government data. It shows that citizens filter information detailing how well government programs are working through their previously established political preferences. For example, when presented with the same information detailing the performance of private schools and public schools, individuals who consider themselves politically conservative tend to interpret this information more favorably for private schools and vice versa for those who consider themselves more politically liberal. Additionally, when information is shown in a positive light, framed with words like “successfully completed”, individuals view the reporting agency in a more positive light (Baekgaard & Serritzlew, 2016; Olsen, 2015). Related to this, a strong body of literature exists showing the connect between how data is presented visually influences the perceived value of that data (Edward, 2001; Hildon et al., 2011; Price et al., 2007)

What is not known, however, is to what extend these phenomena appear in public health. Previous research does suggest these types of mental shortcuts and interpretive effects present in politicians and citizens, however, no specific study has explored them in the public health context. This study will add to the growing literature around information framing and interpretation and will help scholars and professionals design performance systems that better moderate the effects of political ideology in decision-making.

1.3 Research Design and Methods

This study will employ a two-part experimental survey methodology

A. Part 1: The Visual Display of Data

- Respondents will be asked to read a hypothetical vignette which describes a particular public health data source. They will then be presented with a control, which consists of the typical way data is reported to health agencies in tabular fashion, or one of several experimental treatments which present the data in graphical format as well as in the form of more traditional performance indicators.
- They will then be asked to report how valuable that piece of data would be to organizational decision-making on a scale of 1-10.
- All the data used in the survey is related to restaurant inspections. The information is explicitly stated as hypothetical.

B. Part 2: Equivalency Framing of Public Health Data

- Respondents will be randomly assigned one of several experimental vignettes that describe the performance of a hypothetical public health agency. The vignettes will profile the achievement of performance targets and citizen satisfaction with community outreach efforts. The treatments will be the positive or negative framing of data by either using an achievement range of “successfully completed 80-95% of their targets” or “Did not meet 12-25% of their targets.” The control will be including both the positive and negative framing of the data in the vignette.
- Respondents will then be asked to rate how well the organization is performance on a scale of 1-100.
- All the data is explicitly stated as hypothetical.

This survey will be administered online via Qualtrics and will be available for a period of 3 weeks. Outside of the filtering questions which gather general job description and characterizing information, no identifying information will be collected. Respondents will not be asked to alter their work behavior or provide an evaluation of their own organization, thereby reducing the risk of potential spillover effects. Only the research team will be able to view the data collected through the survey.

B. 1) Job type and sector, 2) Political beliefs, 3) Interpretations of hypothetical program data.

C. The survey will be available to respondents for a period of 3 weeks. The online survey will take roughly 10 minutes to complete from beginning to end. There will be no long term follow-up with respondents once the initial survey is completed.

D. There will be no secondary studies derived from this survey data. All divergent and convergence points in the survey will contribute to the primary study.

1.4 Preliminary Data

No preliminary data has been collected at this time outside of the previous research referenced in section 1.2.

1.5 Sample Size Justification

The survey's sample frame consists of roughly 3,500 public health managers and employees around the U.S. The National Association of County and City Health Officers provides a comprehensive list of contact information for public health managers in the U.S. and this will be used to populate the sample frame. I project a 9% response rate, which will result in 315 total responses. I will not be oversampling individuals of color or minority status as we do not know which health departments employ such individuals as managers.

1.6 Study Variables

(If this section does not apply to your research, replace the instructions below with "N/A")

A. Independent Variables, Interventions, or Predictor Variables

The independent variables in this study are the visual display of data (as opposed to the tabular display) and a positive or negative framing of performance information.

B. Dependent Variables or Outcome Measures

The dependant variable will be a measure how hypothetically valuable the graphical data is versus the non-graphical data and how good or poorly individuals report the organization to be performing. I hypothesize that graphically displayed data will be rated as more useful to organizational decision making and that positively framed information will result in organizations being reported as performing better than organizations with data framed in a negative light. This will be done using experimentally framed survey questions which present the same introductory statements but randomly alter how the data to be evaluated is displayed and framed.

1.7 Specimen Collection as a Primary Source

(If this section does not apply to your research, replace the instructions below with "N/A")

N/A

1.8 Interviews, Focus Groups, Surveys, and/or Observations

(If this section does not apply to your research, replace the instructions below with "N/A")

A. Administration

▪ Timing and Frequency

The survey is estimated to take 10 minutes to complete. Respondents will have 3 weeks to complete the survey. The researcher will send out reminder notifications after 3, 7, 14, and 21 days.

- **Location**

The survey will be administered online using the survey platform Qualtrics.

- **Procedures For Audio And Visual Recording**

NA

- **Person Identifiers**

NA – Survey data will be collected anonymously

B. Study Instruments

- The major study instruments (survey questions) we are using have been validated by numerous other studies in the field.

Our primary dependent variables have been used in the following peer-reviewed studies and books:

2.0 Project Management

2.1 Research Staff and Qualifications

Andrew Ballard, Principal Investigator (Lead Investigator)– Andrew Ballard is the Managing Director of the Center for Public Performance and a part-time lecturer for the School of Public Affairs and Administration. Andrew works closely with government analysts and managers in the design and implementation of performance information systems and brings a high level of practical information to the research project.

2.2 Resources Available

Facilities- The research will be developed and deployed from the School of Public Affairs and administration at Rutgers University. The completion of the survey itself will take place online at the convenience of each respondent.

B. Medical Or Psychological Resources

N/A

C. Research Staff Training

The investigator has been trained in research ethics (CITI training) and developed the research protocol.

2.3 Research Sites

School of Public Affairs and Administration (SPAA)

Rutgers University-Newark

111 Washington Street | Newark, NJ 07102

-

Online

3.0 Multi-Site Research Communication & Coordination

(If this section does not apply to your research, replace the instructions below with "N/A")

- N/A

4.0 Research Data Source/s

4.1 Primary Data: Subjects and Specimens

(If this section does not apply to your research, replace the instructions below with “N/A”)

4.1 Primary Data-Subjects and Specimens

The subjects of this study are adult professionals working in public organizations in the United States.

They serve in some managerial or decision-making capacity.

4.2 Subject Selection and Enrollment Considerations

A. Recruitment Details

Completion of the survey will be voluntary. Sampled respondents will receive a series of invitation emails over a period of three weeks asking to participate in the online survey. No additional recruitment will take place.

B. Source of Subjects

The survey's sample frame consists of roughly 3,500 public health managers and employees around the U.S. The National Association of County and City Health Officers provides a comprehensive list of contact information for public health managers in the U.S. and this will be used to populate the sample frame. I project a 9% response rate, which will result in 315 total responses. I will not be oversampling individuals of color or minority status as we do not know which health departments employ such individuals as managers.

C. Method to Identify Potential Subjects

- Potential subjects must:
 - Be an adult.

- Currently work in a local or county public health agency in the United States.
- Be of a managerial or decision-making rank.

D. Subject Screening

▪ Inclusion Criteria

The target population is public health managers and programmatic decision-makers in the United States. They must be an adult currently working in the public service and be of some managerial authority. No other demographic information will be used for filtering respondents.

▪ Exclusion Criteria

Individuals will be excluded from the study if they are not currently employed or if they are employed in a sector other than government. Additionally, if they are not a manager or in some capacity to make programmatic decisions, they will be excluded from the study. Respondents must be over the age of 18 to participate. No individuals will be excluded based on their sex, gender, national origin, race, ethnicity, sexual orientation, or religious affiliation.

E. Recruitment Materials

Potential respondents will receive a series of emails requesting participation in the study. The text of the emails is as follows:

1. Dear “Respondent”

The Rutgers University School of Public Affairs and Administration and the National Center for Public Performance would like to invite you to participate in an important study concerning performance information in public health. Your opinion and insights into this matter are highly valuable and will help better understand this subject. We know your time is valuable, so we have devised a survey that should take no longer than 10 minutes to complete.

Again, your help in this matter is greatly appreciated and the insights of subject matter experts such as yourself will benefit not only the academic community but hopefully the way public organizations make decisions.

To complete the survey, please follow the link below:

[Survey URL]

If you have any questions about the study or the research team, please feel free to contact the principal investigator, Andrew Ballard, at Andrew.Ballard@rutgers.edu.

Thank you for your time and consideration,

Andrew Ballard

Rutgers University

4.1 Primary Data-Subjects and Specimens

The subjects of this study are adult professionals working in public organizations in the United States. They serve in some managerial or decision-making capacity.

4.3 Subject Randomization

After completing a series of filtering questions to determine eligibility, included participants will go through two randomizations. First, participants will be randomly assigned (using simple random sampling) to one of a series of different visualization treatments. One group will receive a tabular formatted data set with raw restaurant inspection numbers. The others will receive either a graphical representation of the control data, the data presented as a percentage, or the data presented as a benchmarking against similar organizations.

The second randomization, using simple random sampling, will place people into one of three groups.

First will view a vignette with positively framed data. The second will view a vignette with negatively framed data. The third group will view a control vignette with both the positive and negative frame. Once these primers are administered, the participants will converge and complete descriptive questions.

Random assignment will use simple random selection from the pool of eligible participants.

4.4 Secondary Subjects

N/A

4.5 Number of Subjects

A. Total Number of Subjects

315 total subjects

B. Total Number of Subjects If Multicenter Study

NA

4.6 Consent Procedures

A. Consent

▪ Documenting Consent

N/A

▪ Waiver of Documentation Of Consent

Prior to beginning the online survey, all participants will receive informed consent for anonymous data collection language. The informed consent language will be the only language presented on the screen and participants must click “Agree and continue” to proceed with the survey.

▪ **Waiver or Alteration of Consent Process**

(i) **Waiver or Alteration Details**

N/A

(ii) **Destruction of Identifiers**

N/A

(iii) **Use of Deception/Concealment**

N/A

B. Consent Process

▪ **Location of Consent Process**

The landing page of the online survey. It will be the first language participants are presented with.

▪ **Ongoing Consent**

N/A – No long term follow-up to be conducted.

▪ **Individual Roles for Researchers Involved in Consent.**

1. Consent Discussion Duration

Questions received from participants regarding consent will be received only by the PI for deliberation. The time dedicated to consent discussion will vary depending on the nature of the question, if any are received.

2. Coercion or Undue Influence

The researcher will clearly state that participation is voluntary and that no identifying information will be collected. Communication will come from the research team only.

3. Subject Understanding

Subjects will be given contact information for the PI for the study. Thorough confidentiality language will be presented and participants are encouraged to contact the research team if instructions are unclear.

4.7 Special Consent/Populations

N/A

- **Parental/Guardian Permission**

N/A

- **Assent Process**

N/A

- a. **Documentation of Assent**

N/A

B. Non-English Speaking Subjects

N/A

C. Economic Burden and/or Compensation for Subjects

- **Expenses**

No direct costs will be assigned to participants

- **Compensation/Incentives**

Participants will be entered into a drawing for one of two \$50 Amazon gift cards.

Participants will opt-in using their email address which will be removed from the survey data collection and used only for drawing purposes.

D. Risks and Benefits to Subjects

- **Description of Subject Risk**

- a. Most participants will likely complete the survey at work, therefor the only risk is the loss of work hours. This risk is minimal as the survey should take the average participant no longer than 20 minutes to complete.

- **Risks to Non-Subjects**

NA

- **Minimizing Risks**

- Data will be collected anonymously and reported in the aggregate. No identifying information will be collected so any risks incurred by a data breach will be negligible. Additionally, the nature of the survey questions is very non-controversial or incriminating. The survey may present a slight inconvenience to respondents but it has been designed to be short (roughly 10 minutes) to minimize this.

- **Certificate of Confidentiality (CoC)**

- a. No sensitive data will be collected.

- **Potential Benefits to Subjects**

- a. Potential benefits include a discounted admission to a conference pertaining to the topic of the survey as well as any insights gained from the publication of the research report in scholarly journals. These benefits will be relatively small.

- **Provisions to Protect the Privacy Interests of Subjects**

- a. Subjects will not be asked to interact with anyone on the research team unless such interactions are prompted by the participant. Additionally, no sensitive or personal information will be collected.

- **Research Team Access To Subject Data**

- a. Only the principal investigator will have access to the full contact list for e-mail recruitment purposes. The faculty advisor is the director of the internet panel. Usage of the full contact list for the purposes of this study will only be permitted for the PI. Any other usage will require additional IRB approval and permission for other studies.

4.8 Secondary Data

NA

A. Chart/Record Review Selection

NA

B. Secondary Specimen Collection

(If this section does not apply to your research, replace the instructions below with "N/A")

NA

- Specimen Storable Procedures

NA

- Specimen Data

NA

5.0 Special Considerations

5.1 Health Insurance Portability and Accountability Act (HIPAA)

(If this section does not apply to your research, replace the instructions below with "N/A")

NA

5.2 Family Educational Rights and Privacy Act (FERPA)

(If this section does not apply to your research, replace the instructions below with "N/A")

NA

5.3 NJ Access to Medical Research Act

NA

5.4 Code of Federal Regulations Title 45 Part 46 (Vulnerable Populations)

Review the following guidance to ensure you have provided sufficient information when specific populations are included in your research study.

*No Special Classes

A. "Special" Classes Of Subjects

- *Pregnant Women: see guidance Toolkit (HRP-412)*
- *Neonates: see guidance Toolkit (HRP-413)*
- *Neonates of Uncertain Viability: see guidance Toolkit (HRP-414)*

- *Prisoners: see guidance Toolkit (HRP-415)*
- *Children: see guidance Toolkit (HRP-416)*
- *Cognitively Impaired Adults: see guidance Toolkit (HRP-417)*

6.0 Research Data Protection and Reporting

6.1 Data Management and Confidentiality

- A. Regression analysis will be used to test statistical significance of variable relationships.
- B. We will ne using linear analysis to test power in this multiple regression
- C. Data collected through the survey will only be accessible to the research team. Once gathered through the online survey tool “Qualtrics,” the data will be stored locally on the campus computer of the principal investigator. The data will not be shared via cloud storage services.
- D. NA
- E. Describe how data be handled study-wide:
 - Data will be stored locally on the campus computer of the principal investigator for no less than 3 years and up to 10.
 - Only the researcher will have access to the data.
 - The PI is responsible for the receipt and transmission of data.
 - Data will not be transmitted via email.

6.2 Data Security

Data collected through the survey will only be accessible to the research team. Once gathered through the online survey tool “Qualtrics,” the data will be stored locally on the campus computer of the principal investigator. The data will not be shared via cloud storage services. Raw data will be accessible via the Qualtrics system which is password protected and can only be accessed by individuals granted view/edit permission by the PI. Only members of the research team will be given such permission.

6.3 Data and Safety Monitoring

(This section is required when research involves more than Minimal Risk to subjects)

A. Periodic Data Evaluation

There is no foreseeable risk of harm to participants. Each participant will be given contact information for the research team and communication between participants and the research team will be regularly monitored for activity on a daily basis.

B. Type of Data Evaluated

Direct communications between participants and the research team will be monitored.

6.4 Reporting Results

A. Sharing of Results with Subjects

Individual results will not be shared with subjects. Research findings will be made available through scholarly journals.

B. Individual Results

NA

C. Aggregate Results

Research findings will be made available through scholarly journals.

D. Professional Reporting

Research findings will be made available through scholarly journals and discussed at professional conferences.

7.0 Data and/or Specimen Banking

A. Storage Methods

- NA

B. Storage Data

NA

C. Releasing Data/Specimens

NA

8.0 Other Approvals/Authorizations**Appendix F: Experimental Survey Protocol**

Q37 In 2016, Rutgers University partnered with the New Jersey Department of Health to review the current state of the Local Health Report (LHR). The project has completed it's first round of data collection and one of the major findings was that local stakeholders desire more feedback from state authorities. Things like aggregated performance reports, trend analysis, opportunities for technical assistance and training, etc.

This survey is meant to help us better understand how local public health professionals in New Jersey use and interpret performance and quality improvement data from the Local Health Report (LHR). In the first section, you will be asked to evaluate the potential value of a few example LHR data presentations. In the second, you will be asked to evaluate the performance of a hypothetical public health agency.

From this information, we will construct template reports for the NJDOH to use in their annual LHR data evaluation. Our hope is that these reports will be relevant to local stakeholders and help them understand their performance as well as that of their peers.

This is a short survey and should take less than 10 minutes to complete. Your input is extremely important for improving this program. At the end, you will have the opportunity to enroll in a drawing for one of two \$50 amazon gift cards. If you choose to enter the drawing, your entrance information will be removed from the survey responses to protect anonymity. No personal information will be collected for the purposes of survey analysis and all responses will be recorded anonymously.

End of Block: Introduction

Start of Block: LHR Experiment Intro

Q49 The next questions ask you to evaluate how potentially useful example LHR data might be to your organizational decision-making. The LHR questions are directly from the annual survey, but the data itself is hypothetical.

End of Block: LHR Experiment Intro

Start of Block: LHR Control 2

Q52 The Local Health Report (LHR) contains data describing local health activities during the previous year. Below is an example (using hypothetical data) of the type of data collected by the program. This **table** shows the **number of risk 1 restaurants** that were inspected within each reporting year.

How valuable is this example data to making organizational decisions?

(0=No Value Whatsoever, 10=Extremely Valuable)

0 1 2 3 4 5 6 7 8 9 10

Slide the bar to rate the value of the indicator. (1)	
--	--


End of Block: LHR Control 2

Start of Block: LHR Control 1

Q55 The Local Health Report (LHR) contains data describing local health activities during the previous year. Below is an example (using hypothetical data) of the type of data collected by the program. This chart shows the **number of risk 1 restaurants** that were inspected within each reporting year.

How potentially valuable is this example data to making organizational decisions?
(0=No Value Whatsoever, 10=Extremely Valuable)

0 1 2 3 4 5 6 7 8 9 10

Slide the bar to rate the value of the indicator. (1)	
--	--


End of Block: LHR Control 1

Start of Block: LHR Longitudinal Treatment - Tabular

Q50 The Local Health Report (LHR) contains data that can be displayed as a performance indicator over a series of years. Below is an example (using hypothetical data) of such a performance indicator. This table shows the **percent of all risk 1 restaurants** in your jurisdiction that were inspected within each reporting year.

How potentially valuable is this example indicator to making organizational decisions?
(0=No Value Whatsoever, 10=Extremely Valuable)

0 1 2 3 4 5 6 7 8 9 10

Slide the bar to rate the value of the indicator. (1)	
--	--


End of Block: LHR Longitudinal Treatment - Tabular

Start of Block: LHR Longitudinal Treatment - Graphical

Q56 The Local Health Report (LHR) contains data that can be displayed as a performance indicator over a series of years. Below is an example (using hypothetical data) of such a performance indicator. This table shows the **percent of all risk 1 restaurants** in your jurisdiction that were inspected within each reporting year.

How potentially valuable is this example indicator to making organizational decisions?
(0=No Value Whatsoever, 10=Extremely Valuable)

0 1 2 3 4 5 6 7 8 9 10

Slide the bar to rate the value of the indicator. (1)	
--	--

End of Block: LHR Longitudinal Treatment - Graphical

Start of Block: LHR Benchmarking Treatment - Tabular

Q54 Comparing your own performance against similar organizations, sometimes called benchmarking, is a common technique used by public organizations. Peer groups are typically made up of agencies with similar numbers of employees, residents, and jurisdiction characteristics so that comparisons can lead to meaningful sharing of best practices. Below is an example (using hypothetical data) of a peer group comparison using Local Health Report (LHR) data. This table shows the **percent of all risk 1 restaurants in each jurisdiction that were inspected** within each reporting year.

How potentially valuable is this example indicator to making organizational decisions?
(0=No Value Whatsoever, 10=Extremely Valuable)

0 1 2 3 4 5 6 7 8 9 10

Slide the bar to rate the value of the indicator. (1)	
--	--

End of Block: LHR Benchmarking Treatment - Tabular

Start of Block: LHR Benchmarking Treatment Graphical

Q58 Comparing your own performance against similar organizations, sometimes called benchmarking, is a common technique used by public organizations. Peer groups are typically made up of agencies with similar numbers of employees, residents, and jurisdiction characteristics so that comparisons can lead to meaningful sharing of best practices. Below is an example (using hypothetical data) of a peer group comparison using Local Health Report (LHR) data. This chart shows the **percent of all risk 1 restaurants in each jurisdiction that were inspected** within each reporting year.

How potentially valuable is this example indicator to making organizational decisions?
(0=No Value Whatsoever, 10=Extremely Valuable)

0 1 2 3 4 5 6 7 8 9 10

Slide the bar to rate the value of the indicator. (1)	
--	--

End of Block: LHR Benchmarking Treatment Graphical

Start of Block: Framing Experiment Intro


Q38 The next 2 questions ask you to evaluate how well a public health department is doing using their performance information. Health departments frequently collect data to monitor both the efficiency and quality of their work. The next few measures are taken from U.S. county and local health departments.

End of Block: Framing Experiment Intro

Start of Block: Positive Framing Block


Q40 The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments develop measurable performance and quality improvement objectives. Suppose one of these departments **successfully met** (Random Number) percent of its performance objectives. How would you rate the performance of this department?

0 10 20 30 40 50 60 70 80 90 100

Please slide the bar to rate the performance. 0 is the worst possible performance and 100 is the best possible performance. (1)	
---	--

Q148 The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments provide emergency preparedness training to members of their community. Suppose one of these departments conducted a post-training survey and (Random Number) percent of attendees were **satisfied** with the event. How would you rate the performance of this department?

0 10 20 30 40 50 60 70 80 90 100


Please slide the bar to rate the performance. 0 is the worst possible performance and 100 is the best possible performance. (1)	
---	--

End of Block: Positive Framing Block

Start of Block: Negative Framing Block


Q150 The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments develop measurable performance and quality improvement objectives. Suppose one of these departments **did not meet** (Random Number) percent of its performance objectives. How would you rate the performance of this department?

0 10 20 30 40 50 60 70 80 90 100

Please slide the bar to rate the performance. 0 is the worst possible performance and 100 is the best possible performance. (1)	
---	--

Q149 The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments provide emergency preparedness training to members of their community. Suppose one of these departments conducted a post-training survey and (Random Number) percent of attendees were **dissatisfied** with the event. How would you rate the performance of this department?

0 10 20 30 40 50 60 70 80 90 100


Please slide the bar to rate the performance. 0 is the worst possible performance and 100 is the best possible performance. (1)	
---	--

End of Block: Negative Framing Block

Start of Block: Control Group

Q151 The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments develop measurable performance and quality improvement objectives. Suppose one of these departments **met 82 percent** of its performance objectives and **did not meet 18 percent** of them. How would you rate the performance of this department?

0 10 20 30 40 50 60 70 80 90 100

Please slide the bar to rate the performance. 0 is the worst possible performance and 100 is the best possible performance. (1)	
---	--

Q48 The 2016 profile report from the National Association of County and City Health Officers (NAACHO) suggests that the majority of health departments provide emergency preparedness training to members of their community. Suppose one of these departments conducted a post-training survey and **92 percent** of attendees were satisfied with the event and **8 percent** were dissatisfied. How would you rate the performance of this department?

0 10 20 30 40 50 60 70 80 90 100

Please slide the bar to rate the performance. 0 is the worst possible performance and 100 is the best possible performance. (1)



End of Block: Control Group

Start of Block: Work characteristics

Q35 The next few questions are about characteristics of your job

Page Break

E2 About how many people work in your health department? (FTEs)

- ☐ <5 (1)
 - ☐ 5-9.9 (2)
 - ☐ 10-24.9 (3)
 - ☐ 25-49.9 (4)
 - ☐ 50+ (5)
-

Q61 About how many residents are served by your health department?

- ☐ (1)
 - ☐ 10,000 - 24,999 (2)
 - ☐ 25,000 - 49,999 (3)
 - ☐ 50,000 - 74,999 (4)
 - ☐ 75,000 - 99,999 (5)
 - ☐ 100,000+ (6)
-

Q59 Which type of position best describes your role in your organization?

- ☐ Agency Leadership (1)
 - ☐ Business Operations Staff/Office Support (2)
 - ☐ Environmental Health (3)
 - ☐ Nurse/Nursing Aid (4)
 - ☐ Education (5)
 - ☐ Epidemiology (6)
 - ☐ Inspections (7)
 - ☐ Other (8)
-

E4 How long have you been working in Public Health?

- ☐ Less than 1 year (1)
 - ☐ 1-3 years (2)
 - ☐ 4-5 years (3)
 - ☐ 6-10 years (4)
 - ☐ 11-20 years (5)
 - ☐ More than 20 years (6)
-

Q62 How familiar are you with Performance Measurement and/or Quality Improvement?

- ☐ Extremely familiar (16)
 - ☐ Very familiar (17)
 - ☐ Moderately familiar (18)
 - ☐ Slightly familiar (19)
 - ☐ Not familiar at all (20)
-

Q63 How familiar are you with community outreach and education?

- ☐ Extremely familiar (16)
- ☐ Very familiar (17)
- ☐ Moderately familiar (18)
- ☐ Slightly familiar (19)
- ☐ Not familiar at all (20)

End of Block: Work characteristics

Start of Block: Background questions

Q122 The last few questions are just some background facts about yourself for statistical purposes

Q55 Are you...

- ☐ Female (1)
 - ☐ Male (2)
-

Q124 What is your age?

- ☐ 19 or under (1)
 - ☐ 20-29 (2)
 - ☐ 30-39 (3)
 - ☐ 40-49 (4)
 - ☐ 50-59 (5)
 - ☐ 60-69 (6)
 - ☐ 70 or older (7)
-

Q125 Do you consider yourself to be . . .

- ☐ White (7)
 - ☐ Black or African American (8)
 - ☐ American Indian or Alaska Native (9)
 - ☐ Asian (10)
 - ☐ Native Hawaiian or Pacific Islander (11)
 - ☐ Latino, Spanish, or Hispanic Origin (13)
 - ☐ Middle Eastern or North African (14)
 - ☐ Other (15)
-



Q126 What is the highest level of education you have completed?

- ☐ Less than High School (1)
 - ☐ High School / GED (2)
 - ☐ Some College (3)
 - ☐ 2-year College Degree (4)
 - ☐ 4-year College Degree (5)
 - ☐ Masters Degree (6)
 - ☐ PhD/JD/MD (7)
-

Q60 Please use this space to provide any comments or feedback you have on the survey.

Appendix G: Recruitment Letter

Dear New Jersey Public Health Professional,

In 2016, the Rutgers University School of Public Affairs and Administration and School of Public Health partnered with the New Jersey Department of Health Office of Local Public Health to evaluate how performance information is collected in New Jersey's public health system. In 2017, the first phase of an extensive review of the annual Local Health Report was completed.

One of the major findings of this review was that local health departments desire a more interactive dialogue with state health authorities regarding LHR data. To that end, we are beginning our second and final phase of the programmatic review. We hope to design a new reporting framework that will disseminate relevant and timely information to both state and local stakeholders. This new reporting system will help local and state health agencies identify important trends, performance deficits, and share best practices between departments.

We would like to thank all of those who participated in the first phase of this project and ask for your help once again. The link below will take you to a short questionnaire in which you will evaluate various reporting styles and help us understand how you use performance and quality improvement data.

Several copies of this letter are included, please disseminate this to anyone in your organization that may be involved in either the generation or usage of organizational data. This will take less than 10 minutes to complete, your answers will be recorded anonymously, and at the end you are invited to enter a drawing for one of two \$50 Amazon gift cards.

Questionnaire Link:

www.RutgersData.org

If you have any questions, please contact the Principal Investigator, Andrew Ballard, using the contact information provided at the top of this letter.

*Sincerely,
The Public Health Data and Innovation Initiative
Rutgers University
New Jersey Department of Health*

Appendix H – Andrew Ballard CV

Andrew Ballard

Education

RUTGERS UNIVERSITY

ABD, PhD – Public Administration (Performance Management, Budgeting/Finance)

Dissertation – Performance Management or Symbolic Adoption: Mandating Performance Measurement in Public Health

Expected Graduation – May 2018

CENTRAL EUROPEAN UNIVERSITY

Certificate in Program Evaluation – Logic Models & Randomized Control Trials

Completion – July 2016

UNIVERSITY OF DETROIT MERCY

Masters of Arts – Financial Economics

Graduation – May 2013

CENTRAL MICHIGAN UNIVERSITY

Bachelors of Science – Economics, Public Administration

Graduation – December 2011 (Cum Laude)

Professional Experience

MANAGING DIRECTOR – National Center for Public Performance, Newark, NJ (1/1/15 -)

- Performance measurement/management consulting
- Supervise graduate student thesis projects
- Organize annual public performance measurement conference (2015, 2016, 2017)
 - Recruited Gov. Martin O'Malley as Keynote speaker in 2017
- Developed and implemented performance measurement software system

LECTURER – Rutgers University School of Public Affairs and Administration (1/1/15-)

- Course content design.
- Delivering course material in person and online.
- Mentoring students on thesis and capstone research.
- Grading and classroom management.

EXECUTIVE DIRECTOR (PI) – Public Health Data and Innovation Institute (05/01/17-)

- Specialized in the study of public health operational data collection and use.
- Evaluate public health performance systems.

- Advocate for public health data usage and performance system development.
- Partner with state, county, and local health agencies to provide technical support and training.

SENIOR DATA ANALYST FOR CAPITAL MARKETS – United Shore Financial Services, Troy, MI
(3/1/12 – 5/1/14)

- Market research and internal business metrics analysis
- Hedge position analysis
- Loan level data/risk analysis
- Company/Mortgage product performance
- Financial product development

Computer Skills

Advanced MS Excel SQL Fundamentals HTML C++ JavaScript
Stata

Research Interests

Performance Information Use, Performance Contracting, Performance Management, Public Health Quality Improvement, Public Management, Public Health Management, Evidence-Based Policy.

Research Publications

Holzer, M., Ballard, A., Kim, M., Peng, S., & Deat, F. (2017). Obstacles and opportunities for sustaining performance management systems. *International Journal of Public Administration*, 41(2), 1-13.

Ballard (2018). Sustaining High Performing Bureaucracies. *Global Encyclopedia of Public Administration, Public Policy, and Governance*.

Book Chapters

Ballard, A (2015). Chapter 7: Public Performance. In Marc Holzer (Ed.), *Public Administration: An Introduction, 2nd Edition*. Routledge Publications

Ballard, A (Forthcoming). Chapter 2: State of Information Privacy and Security: Principles, Trends, and Concerns. In Aroon P. Manoharan (Author), *Introduction to EGovernment, 1st Edition*. Routledge Publications

Manuscripts Under Development

1. Holzer, M & Andrew Ballard: “Post-Factual” Evidence: A New Era or Evidence of Counter-Cultural Desperation? – *Current Status: Editorial Review, Public Performance & Management Review*
2. Ballard, A; Fuenzalida, J & Gregg G. Van Ryzin: Motivated Reasoning in Public Managers’ Interpretation of Performance Data
3. Andrew Ballard: Performance-Based Contracting – Towards a Definition
4. Andrew Ballard: Factors Influencing the Use of Performance-Based Contracting

Academic Presentations

2017 NECoPA. Burlington, VT, *Collaborative Performance Measurement in New Jersey Public Health*.

2017 SECoPA. Hollywood, FL, *Performance Management or Symbolic Adoption – Mandating Performance Measures in New Jersey Public Health*.

2017 ASPA National. Atlanta, GA, “Post-Factual” Evidence: A New Era or Evidence of Counter-Cultural Desperation? (with Marc Holzer, PhD).

2016 NECoPA. Harrisburg, PA, *Punctuated Expenditures: Comparing Budget Volatility in Manager and Mayoral Cities* (with Cleopatra Charles, PhD).

Rutgers SPAA Research Colloquium, *Data-Driven Decision-Making or Symbolic Adoption: The Case of New Jersey Local Health Departments*.

Other Presentations

Young Government Leaders Association – New York, *Agendas for Performance Management in the Trump Administration*, March 6th, 2017

Young Government Leaders Association – New York, *Behavioral Limitations to Performance Management Use in Government*, December 11th, 2017

Editorial Contributions

Contributing Columnist – ASPA PATimes Magazine

- February, 2017: “Political Appointments and Government Performance: What Can Be Done?”
- March, 2017: “Interpreting Performance Information: Why it Matters”
- April, 2017: “Legislating Performance: Does Mandated Performance Measurement Really Work?”
- October, 2017: “The Landscape of Performance Measurement Education.”
- January 2018: “The Dynamics of Performance Management in Public Health.”

Courses Taught

Rutgers University

Performance Management in Public and Non-Profit Organizations (MPA). Rutgers University School of Public Affairs and Administration. Summer 2015

Applied Research Design (MPA). Rutgers University-Newark School of Public Affairs and Administration. Fall 2016, Summer 2017, Fall 2017

MPA Capstone. Rutgers University-Newark School of Public Affairs and Administration. Spring 2017, Fall 2017.

Quantitative Methods. Rutgers University-Newark School of Public Affairs and Administration. Certified Public Manager Program. Fall 2015, Spring 2016, Summer 2016, Spring 2017.

Strategic Performance Management. Rutgers University-Newark School of Public Affairs and Administration. Certificate in Strategic Performance Management Program. 2015-Present.

Professional Associations

- American Society for Public Administration
- New Jersey League of Municipalities
- Mid-Atlantic StatNet
- Socrata Community of Practice

Commissioned Projects/Research

Andrew Ballard. 2017-2018. Local Health Department Data Collection and Reporting Evaluation. New Jersey Department of Health.

Andrew Ballard. 2016-2017. Local Health Evaluation Report Policy Analysis and Reform Recommendations. New Jersey Department of Health.

Andrew Ballard. 2015. Road Salt Policy Analysis and Effectiveness Study. Bergen County, NJ.

Andrew Ballard. 2011. Bi-Annual Evaluation of Department Internal Controls. Michigan Department of Environmental Quality, Lansing, MI.

Special Appointments

Advisor - NOAA Sea Grant Program Economic Impact Evaluation Committee, National Oceanic and Atmospheric Administration, 2017-2018.

NASPAA MPA Self-Study Committee, Rutgers School of Public Affairs and Administration, Logic Model Design, 2017

Dean search committee, Rutgers University-Newark School of Public Affairs and Administration, 2016

Conference planning committee – 2016 ASPA Teaching Public Administration Conference, Newark, NJ

External Funding Raised

Total External Funding Raised - \$246,002.50

(PI) Rutgers University & Newark Community Council Seed Grant Program – New Jersey Public Health Data and Innovation Initiative, May 2017: \$54,400.00

Robert Wood Johnson Foundation – Evaluation of Performance Management Structure of New Jersey Department of Health, May 2016: \$15,750.00

Various Local/State/Federal Governments - Performance Management Training Contracts, 2015-2017: \$150,892.50

(PI) Rutgers University-Newark Professional Development Fund (Research grant) – New Jersey Public Health Data, June 2016: \$500.00

Performance Management Conference Sponsorships & Revenue (2015, 16, 17): \$24,960.0

Other Activities

Capstone Supervisor, Rutgers University-Newark MPA Program. Summer 2015, Fall 2015, Spring 2016

PMRA Conference 2017 – PhD Student Manuscript Review Workshop

Designed, built, and maintain Rutgers University National Center for Public Performance website – www.RutgersNCPP.org

Volunteer Activities

Academic mentor – Harlem Educational Activities Fund, Fall 2014 – Spring 2015

First generation college student mentor – Newark College Initiative, Spring 2016

All Figures

Figure 2.1 Proposed Dynamics of Public Health Performance Management Adoption and Use

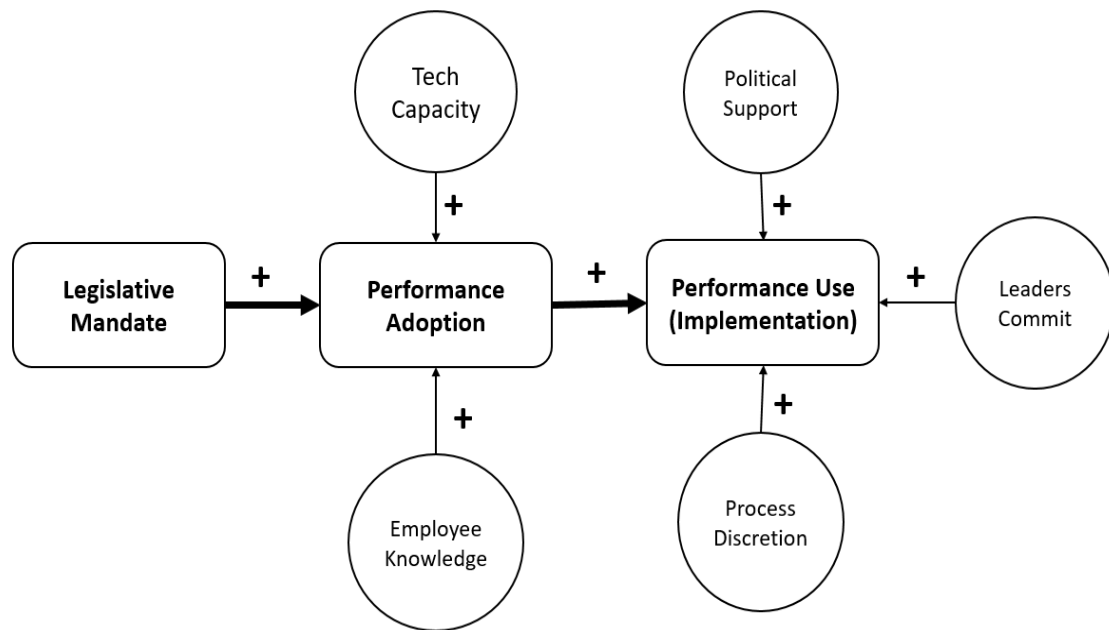


Figure 2.2 – To What Extent Do You Collect and Use Data to Inform Organizational Decisions

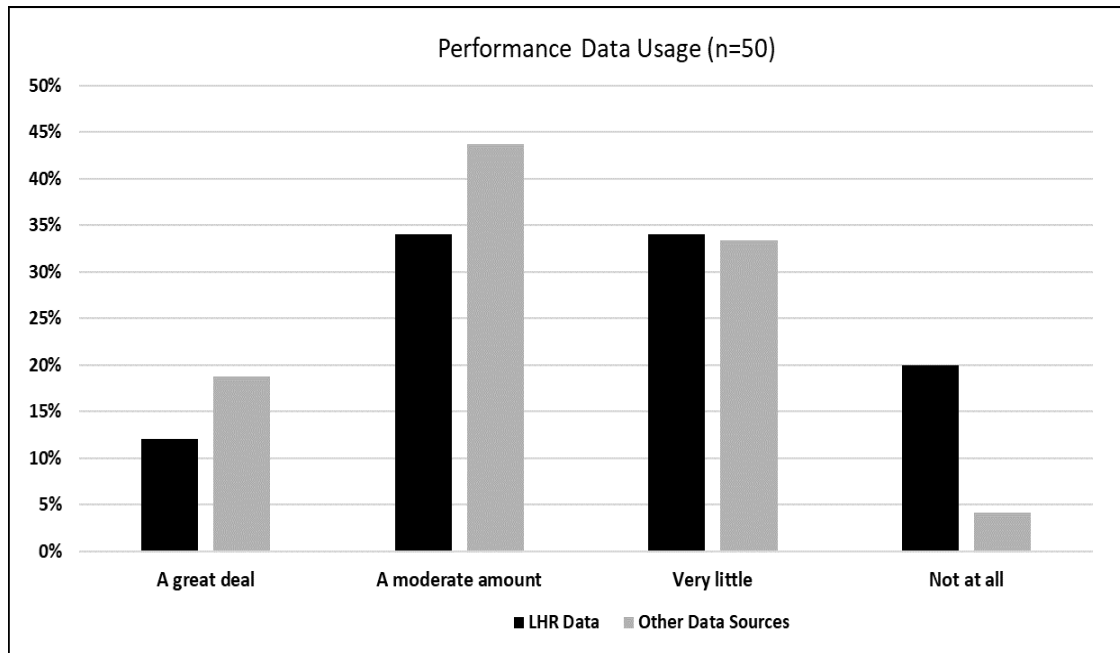


Figure 2.3 – Health Officer (Manager) Perceptions of LHR Resource Intensity

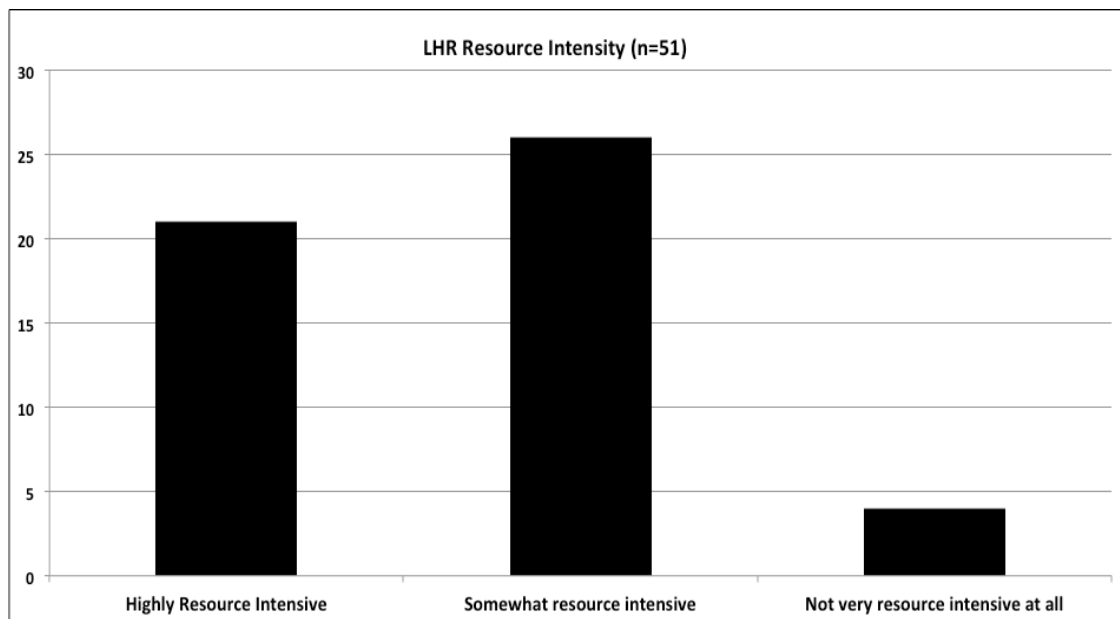


Figure 2.4 – Health Officer (Manager) Perceptions of State LHR Utilization

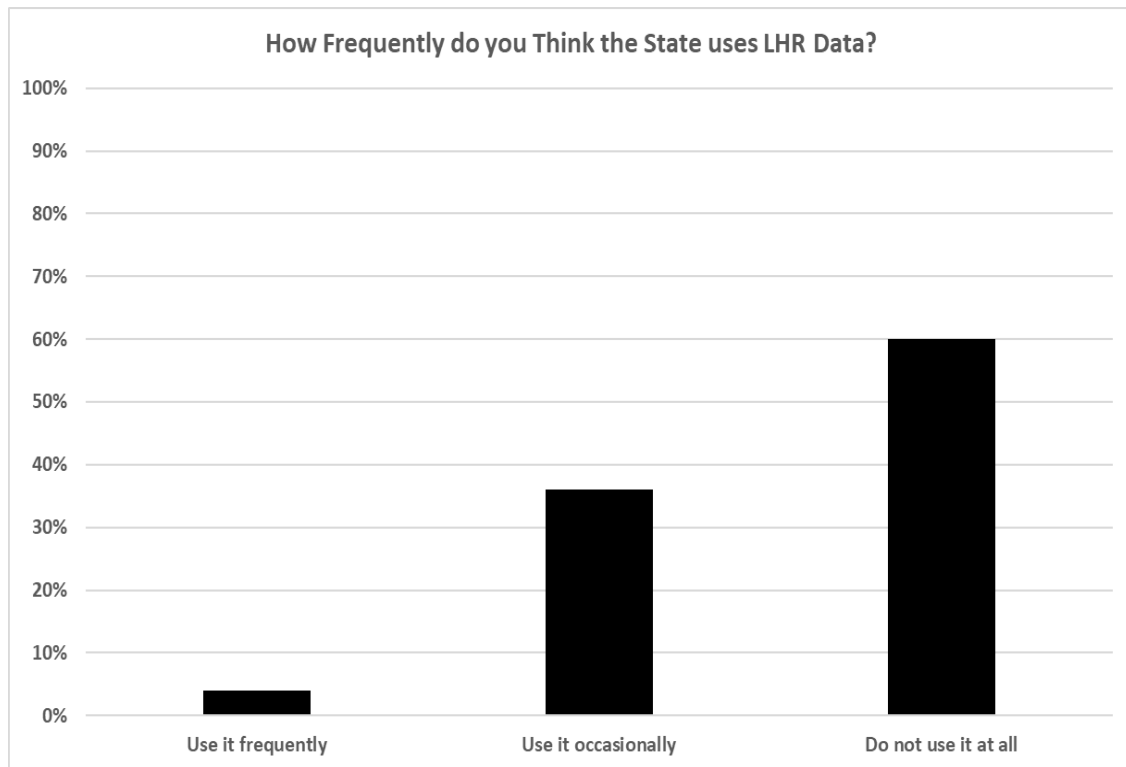


Figure 3.1 – Experimental Design

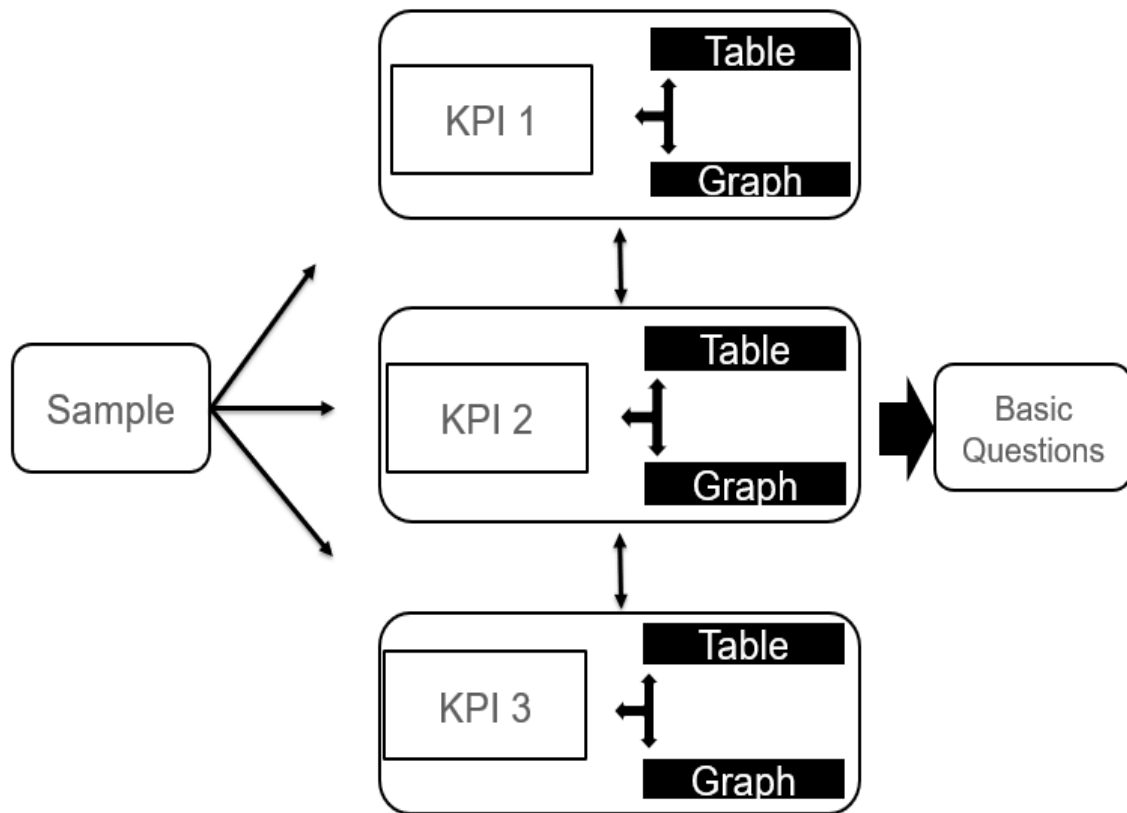


Figure 3.2 – Graphical and Numerical Display of Performance Indicator

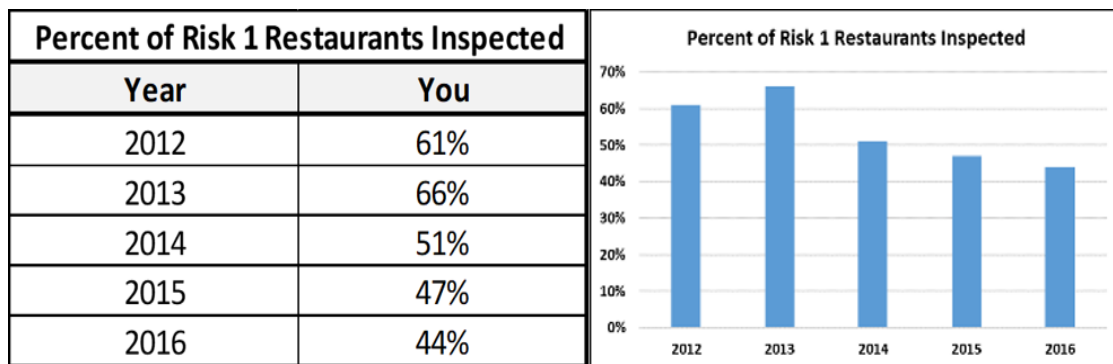


Figure 3.3 – Comparison of Mean Responses

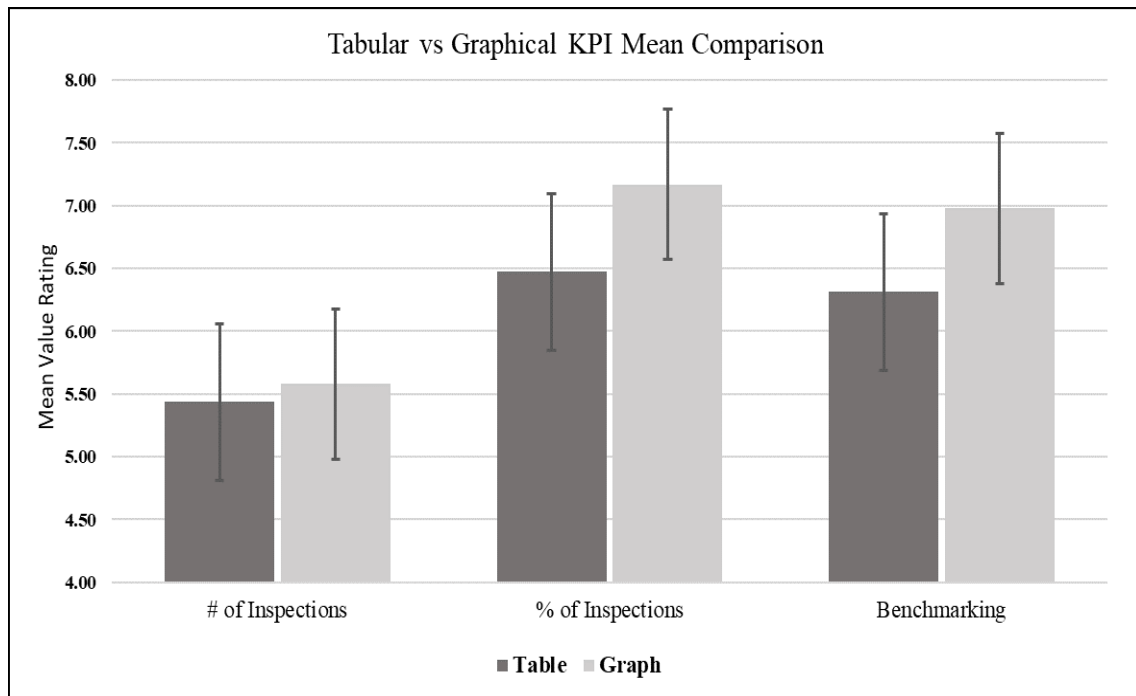


Figure 4.1 – Framing Effects Experimental Design

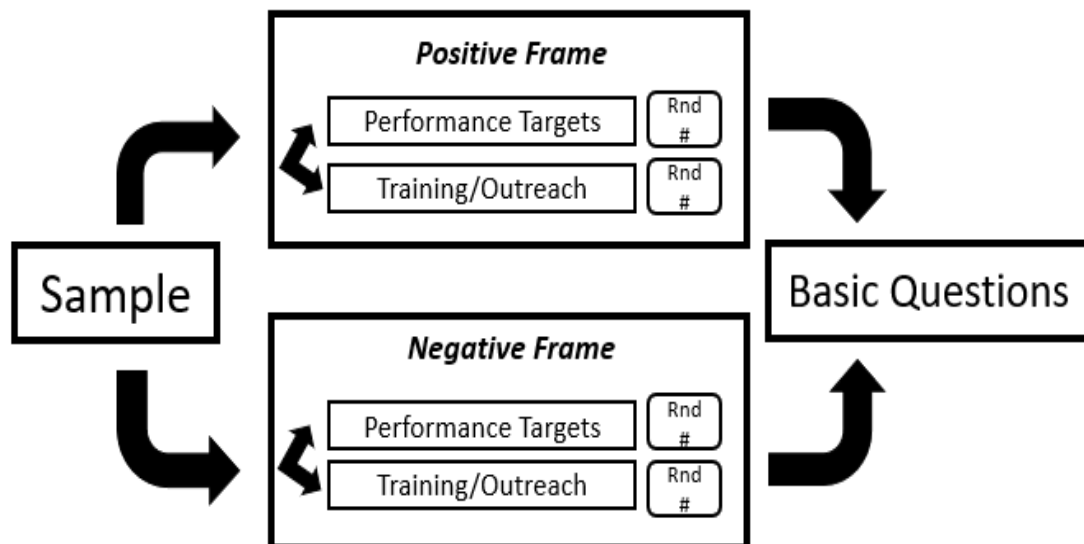


Figure 4.2/4.3 – Density Plot of Performance Target Treatment (Top) Training
(Bottom)

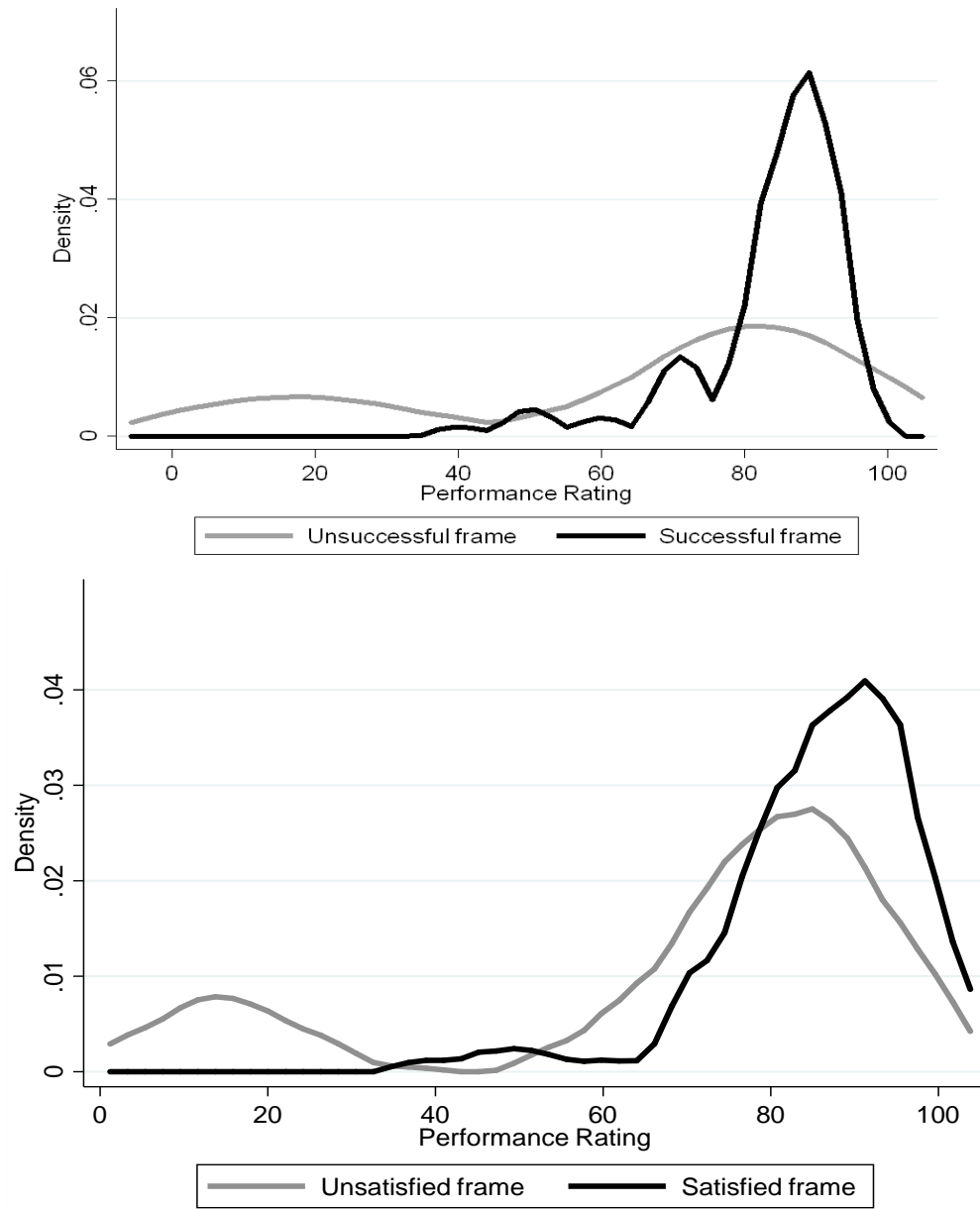
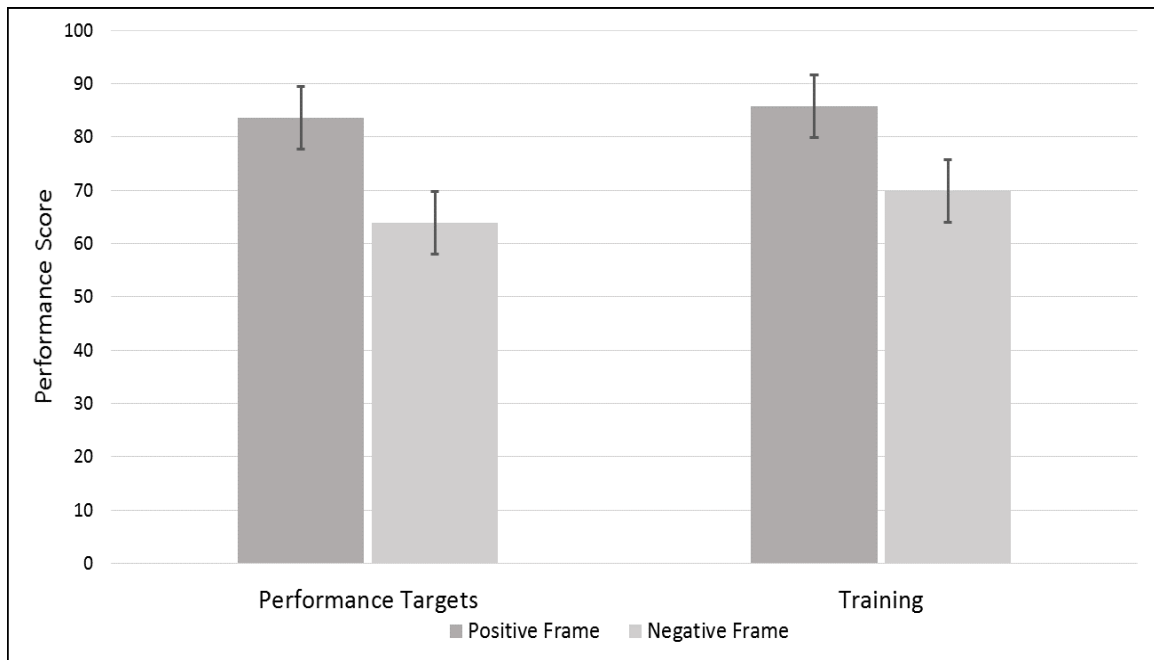
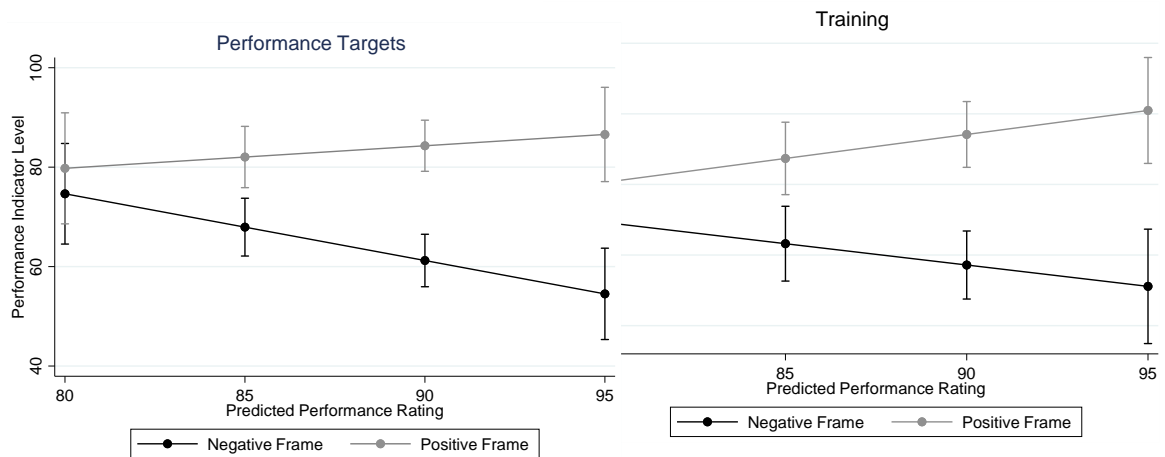


Figure 4.4 – Mean Ratings by Performance Metric Type**Figure 4.6 – OLS Predictions for Performance Targets (Left) and Training Vignettes (Right)**

End.

Thank You Mom, Dad, Katelyn, David, and Cindy.