PRINCIPAL'S LEADERSHIP, SCHOOL MANAGEMENT, AND STUDENT

LEARNING OUTCOMES: A STUDY OF NEW YORK CITY PUBLIC SCHOOLS

by

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ABSTRACT OF THE DISSERTATION

Principal's Leadership, School Management, and Student Learning Outcomes:

A Study Of New York City Public Schools

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Recent decades have witnessed administrative reforms and policy initiatives that attempt to improve the performance of organizations. The underlying assumption is that changes in management system as well as focus on results would contribute to better organizational outcomes. This philosophy is also deeply embedded in the reforms of public school systems.

This study draws upon existing public management literature to propose two research questions: to what extent and how do leadership and management influence the performance level of public organizations. I propose that principal's leadership influences student's performance in standardized exams through mediating effects of teacher's collaborative culture, performance management, school safety, and parent engagement.

The methodological approach for this research was twofold. First, Structural Equation Modeling (SEM) was used to test study models using data collected in the school year 2007-2008. The sample was comprised of all New York City (NYC) public schools. Secondary data – collected by the New York City Department of Education (DoE) – from different sources were used. These data came from survey questionnaires,

on site investigation, and traditional statistics on test scores. Second, a content analysis of key documents was conducted. Documents relevant to the sweeping change in NYC public school system during Mayor Bloomberg's administration were reviewed and coded. Through content analysis, policy evidence was uncovered to further reinforce the models identified in the first phase. Moreover, the interpretation of the texts also provides rich details about the philosophy and principles of this reform, thus presents a complete picture of the intricate process that takes place when principal's leadership and school management work together in the way that fosters high productivity.

This research makes two primary contributions: 1) it enhances our understanding of how better performance can be achieved in public schools and this has relevance for all public organizations; 2) by using data from multiple sources and different modes of analysis, the study design offers methodological advantages over prior research making it possible to draw more robust inferences.

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Psalms 16:11: You will make known to me the path of life; In Your presence is fullness of joy; At Your right hand there are pleasures forever.

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Chapter 1: Introduction

Chapter 1 presents an overview of this dissertation research. It explains the research background and purpose of the study, discusses its theoretical and practical importance, and provides the context of the research and an outline of the dissertation.

1.1 Research Background

How to improve the efficiency of operations and achieve better outcomes is a question that the public sector has grappled with for some time. In the last decades of the 20th century, an extensive antigovernment trend arose not only in the United States (U.S.) but throughout the world (Rainey, 2009). The decay in confidence is most salient on issues that include huge governmental spending, inefficiency of service delivery, and low accountability of bureaucrats (Poister & Streib, 1999). Reforming the traditional bureaucratic structure and embedding new philosophy in government administration have been widely accepted as ways to improve public organization performance and raise citizen trust.

The New Public Management movement (NPM), which is called "Reinventing Government" in some contexts, is considered an important strategy for solving government's problems. In addition, it has prevailed in the administrative reform agenda around the world (Moynihan & Pandey, 2005, 2010; Wholey, 2001, Yang & Hsieh, 2007). Two themes are salient in these surging reforms; one focuses on results and

effectiveness of public service and the other on improving the management system (Moynihan, 2006).

These assumptions underlying NPM are advocated by scholars who attempt to "dissect the black box" of government performance. For example, Ingraham, Joyce, and Donahue (2003) argued that the key to achieving service improvement is the quality and cohesion of the management system as well as the use of performance information in management activities (Pandey, Coursey, & Moynihan, 2007). Both theoretical and empirical endeavors have uncovered the components and dominant relationships among essential elements that make up high-quality organizational management (e.g., Rainey & Steinbauer, 1999; Brewer & Selden, 2000; Ingraham, Joyce, & Donahue, 2003). Despite the variation in the conceptual framework and modeling process, these studies have stressed the significance of organizational management and the extent to which managing for results has been adopted and implemented.

However, our understanding of how to improve organizational performance in the public sector is still limited. On the one hand, even though it is widely accepted that management matters to an organization's performance, the evidence in support of this is limited, especially, we have yet to see evidence from large-sample studies. Second, there have been two salient foci of the research linking management and performance. One stresses institutional bases and managerial arrangement, and the other focuses on leaders and their influence. The Government Performance Project (GPP) initiated by the Maxwell School contributes to theoretical inquiry and empirical analysis of the first line of research. However, the analysis in the second tradition is far from sufficient in the

public management research. There have few studies have examined how much influence leaders may have on performance, and how they make such a difference.

On the other hand, to large extent the evidence on whether performance management reform can actually lead to better organizational outcomes exists in case studies. This relationship has rarely been rigorously tested in empirical studies (Sun & Van Ryzin, 2014). Two reasons might contribute to the limitation of previous research. First, it is not easy to systematically assess the outcomes, particularly the change of performance in the public sector. Second, the difficulty of comparing organizations in terms of their engagement in performance management practices, including goal setting, performance measurement, analysis and reporting, and generating feedback to staff and others involved in the production of outcomes explains the a dearth of relevant research (Sun & Van Ryzin, 2014).

1.2 Purpose of the Study and Significance

The overall purpose of this study is to examine how improved organizational performance can be achieved in the "era of government by performance management" (Moynihan & Pandey, 2005, p. 421). In particular, two research questions are posed:

1) Do leadership and organizational management influence student academic performance and, if so, to what extent?

2) How do leadership and school management influence student academic performance?

The first question tries to provide more empirical evidence that leaders and managerial practices contribute to public service improvement. Furthermore, the second question seeks to examine the process through which leadership and formal management processes work.

This research makes two primary contributions: First, this study enhances our understanding of how service improvement can be achieved in public organizations. Particularly, other than the institutional management arrangement, which has been systematically examined in existing empirical studies, I have investigated another crucial predictor of administrative outcomes – leadership and how it improves performance. Third, this study sheds light on the research of performance management reforms since little research has identified the impact of the performance management system on organizational outcomes.

Second, this study design offers methodological advantages over prior research making it possible to obtain insight into performance-based management reforms in government and public schools. This study used a mixed-methods research design, which presents a comprehensive picture of the intricate process that takes place when a principal's leadership and school management work together to foster high productivity. Additionally, this study used a sample that includes all the public schools in the New York City (NYC), which helps reduce selection bias. Lastly, data were compiled from multiple sources, which greatly reduces the possibility of common method variance influencing the results.

1.3 Context of Current Study: Education Reforms Nationwide and in New York City

In the present study, data obtained from the NYC public school system provided the context and opportunity to empirically examine the hypotheses about the links among leadership, management, and performance. Schools offer an excellent setting in which to study organizational performance. The public school system is one of the biggest government-funded and -managed systems in the United States. Teachers are public education employees who provide services to customers, largely in the form of instruction to students. The following section provides contextual information on the reform of public schools and on NYC public schools.

1.3.1 Reinventing education reforms

The public school system is the biggest government-funded and -managed system in the United States. In 2012, the United States government spent $ 405.9 billion on K-12 system (Government Spending Details, n.d.). Although the U.S. public education system seeks balance equity and quality, Hill argued that "the rules, regulations, and bureaucratic machinery created to attend to the first of these goals threatens to overwhelm the second… [the current education system] hardly works at all and works well for very few" (1997, p. 11). The incentives for improving performance of the education system and narrowing the achievement gaps have brought reforms that draw upon elements of the NPM movement, such as marketization, improving management systems, and creating a focus on outcomes.

The first initiative is to introduce marketization and privatization to the school system (Miller & Alers-Tealdi, 2014). Even though presented as different approaches, these reforms all attempt to overhaul the traditional education system by the transferring of funds and/or responsibilities from government and public institutions to private companies and organizations (Belfield & Levin, 2002; Burch, 2006; Whitty & Power, 2000). Moreover, the diffusion of charter schools and implementation of vouchers work as other important instruments to reform public schools, with the expectation of providing students and parents with more choices and satisfying different interests of diverse groups. Unlike the traditional system, the reformed education system attempts to be less bureaucratic, more innovative, more efficient, and more likely to meet the needs of local communities, parents, and student (Fusarelli, 1999, 2002).

Second, the philosophy of new managerialism is also manifest in the education reforms since the 1990s. The reforms' basic idea is that school management matters to performance of the organization (Hood, 1991). Under these reforms, individual schools are delegated discretion and authority over key decision-making areas such as budget, physical plant, personnel, and curriculum (Tolofari, 2005). Meanwhile, public schools are held accountable for the best use of resources (Leithwood, 2001). For example, in 2007, the principals in NYC public schools "signed a landmark performance agreement with the City, winning increased autonomy to run their schools in exchange for increased responsibility for the outcomes of their students" (New York City Department of Education [DoE], 2013). Proponents are optimistic about its effectiveness in that "such authority, in combination with the incentive to make the best use of resources, ought to

get more of the resources of the school into the direct service of students" (Leithwood, 2001, p. 223).

Finally, another constant theme arising from education reforms in the U.S. is the emphasis on the outcomes of schools, particularly as reflected in the achievement of students. The standards-based education (SBE) movement posits that a better quality education and improved accountability can be only achieved when clear, measureable academic standards are set for all school students (Schmoker & Marzano, 1999). Differing from the ranking system, a standards-based system measures each student against the specific standard. Likewise, the teachers' class instruction and their performance assessments are all aligned to that standard (Settlage & Meadows, 2002). To a large extent, the No Child Left Behind Act (NCLB) of 2001 was driven by the SBE movement, which continues to influence the education system in the U.S. Before NCLB, the assumption of education policy was that greater resources lead to better performance, especially for the education of disadvantaged students. After NCLB was introduced, educational policy shifted focus from school input to an emphasis on performance objectives and outcomes (Hanushek & Raymond, 2005). Every state is mandated to conduct standardized tests on specified subjects. The performance of students, schools, and school districts is compared against the pre-established minimum performance standards. School leaders are held accountable for the progress of student performance and for narrowing achievement gaps between subgroup students in receiving federal aid. Goertz (2005) concluded that "the premises of NCLB—that having a uniform accountability system based on content and performance standards and focusing attention

on subgroup performance and achievement gaps will positively affect student achievement" (p 74).

The New York City (NYC) public school system, the context in which this research is conducted, is an example that has all these characteristics in education policy. It is perhaps the most diverse school system in the country, and it has had a tradition of school-level autonomy and experimentation in educational and management approaches (Ravitch, 2010). Moreover, it also largely focuses on test scores, for example, by identifying underperforming students and intervening to help them raise their test scores by the end of the year. Teachers in the system are also now assessed by the level and gains in test scores of their students (Sun & Van Ryzin, 2014).

1.3.2 New York City educational reforms under Mayor Bloomberg and Chancellor Klein's administration.

The sweeping changes Mayor Michael Bloomberg initiated in NYC public schools began in 2002 and continue to influence educational policy and service provision today. The current study relies on data obtained in the school year 2007-2008, so this part provides an overview of the policy changes during 2002-2008 period. After being elected in 2001, Mayor Bloomberg began to overhaul the NYC education system in his second year (O' Day, Bitter, & Talbert, 2011). The old system was criticized as being "broken," "bureaucratic," and unable to narrow the racial and ethnic achievement gap. In his speech on Changing the Culture of Urban Education in 2006, Chancellor Klein said that "if school reform is to succeed, we'll need to go through three major cultural shifts. We will

have to evolve from a culture of excuses to a culture of accountability, from a culture of compliance to a culture of performance, and from a culture of uniformity to a culture of differentiation".

After a brief legislative battle, in 2002, the Board of Education was replaced by the Public Education Panel (PEP), which is a system directly accountable to the mayor (O' Day, Bitter, & Talbert, 2011). This enabled Bloomberg to gain the control he sought. However, the intent of the mayor-controlled education system was not simply to put everything under the control of Bloomberg and Klein (O' Day, Bitter, & Talbert, 2011). Instead, their policies and initiatives were meant to improve instruction throughout the city system by empowering school leaders. Empowerment, along with the other two pillars (leadership and accountability) constituted the basic principles of the Bloomberg administration's school reforms. In the following section, I explain how these new changes worked and the beliefs and philosophies underpinning them.

Empowerment

The idea underlying the Bloomberg administration school reforms is that it is the individual school instead of the school district that determines the success of the education. Therefore, many of reform efforts occurred at the school level. Building a school with capacity requires strong leadership at the level of the principal. Chancellor Klein criticized the argument that "principals should be told what to do rather than given discretion to act as they think best" (Siskin, 2011, p. 190). Instead, principals in the new system are substantially empowered with new authorities and responsibilities in management and resource allocation. Principals make critical decisions in recruiting,

hiring, and supervising staff; collaborating with external partners to provide instructional and operational support; leading the inquiry team in learning from performance assessment tools, raising test scores and graduation rates; and in marketing their school to prospective students and families.

Accountability

However, it should be noted that principals are empowered with increasing authorities but at the same are expected to undertake more responsibilities and face more rigorous performance criteria. According to the agreement with the Department of Education (DoE), they must achieve predetermined performance targets in exchange for resources and power. The system that combines accountability and autonomy better explains what Klein meant in his speech to the Partnership for New York City on the Next Phase of the Children First School Reforms in 2007 when he said that "I fundamentally reject the notion that we should ask our great educators to succeed with children but deny them the authority and resources to craft the most effective path to success."

The autonomy-accountability exchange initiative started in academic year 2004-2005. Initially, only 29 joined the Autonomy Zone, which was the pilot program developed by the DoE (O' Day, Bitter, & Talbert, 2011). The initiative then expanded in subsequent years and eventually covered all public schools in 2007-2008. While allowing schools to have more discretion, the DoE established more rigorous performance criteria to hold schools accountable for the performance of all students. Moreover, it also put in place a comprehensive system to monitor results and provide more information to

teachers and principals. Schools and principals face negative consequences, including changing principals or even closing schools, if schools cannot achieve performance progress.

Leadership

Leadership as emphasized in Bloomberg's reforms not only refers to the new sweeping change that confirms the leading position of the mayor and chancellor of the Department of Education, but also means strengthening the leadership capacity of school principals. Actually, empowerment on the other side generates expanded roles, which impose great challenges for principals. They are required to make important decisions about key functions of their school. If they are unable to reach the pre-determined performance targets, the principals may be changed or the school may even be closed. Therefore, training current principals to make them adept at managing all aspects of a school's programs as well as recruiting new qualified candidates to fill positions intensively motivated the DoE to develop new sources of support.

One important decision the DoE made was to partner with the Leadership Academy, an independent, nonprofit organization; it was developed in 2003 and expanded quickly in the following years (Leadership Academy, n.d.). It provides the "Aspiring Principals Program" to select, prepare, and support candidates who want to take principal roles and "School Leadership Coaching Program" to support current principals (Leadership Academy, n.d.).

1.4 Dissertation Overview

The dissertation proceeds as follows: in Chapter 2 I review the literature related to the core concepts in the research and lay the theoretical foundation for the study. In doing so, I set the stage for development of the research hypotheses. Chapter 3 presents the research framework and develops the hypotheses of this research. Chapter 4 describes data, measurement, and data analysis. Chapter 5 reports and discusses the findings. Chapter 6 summarizes the entirety of the dissertation with theoretical and managerial implications, limitations of the current research, and directions for future research.

Chapter 2: Literature Review

This chapter provides a survey of relevant literature and set up the theoretical foundations for the study. It views the study variables from a broad perspective, particularly where the current research fits in the intellectual inquiry of public organizational performance improvement. It starts with a review of research explaining organizational performance improvement in the public sector. Next, it reviews how scholars understand the contribution of public management to organizational performance. Then two essentials performance improvement strategies are discussed: leadership and the use of performance management practices. Even though suited in the literature of performance improvement leadership is often taken as an element of effective management, the argument that leading is not the same as managing is not rare in the literature (Moynihan, Pandey, & Wright, 2012). Therefore, for the former, an overview of the literature on the difference between leadership and management is provided, while for the latter, particular attention goes to the emergence and implementation of performance management at various levels of governments. Finally, a review of controversies surrounding the real impact of performance-based education reforms is provided at the end of this chapter.

2.1 Organizational Performance in the Public Sector

2.1.1 Performance improvement in public organizations

One of the central roles of government is to develop strategies for the improvement of public services. Moynihan and Pandey (2005) asserted that "performance is the ultimate goal of public management systems and actions" (p. 422). To achieve this goal, administrative reforms used in recent years have all emphasized improving the performance and effectiveness of public organizations (Ingraham & Moynihan, 2001; Heinrich & Marschke, 2010; Moynihan & Pandey, 2005; Moynihan & Pandey, 2010). Rainey and Steinbauer (1999) found that in contrast to the antipathy toward government performance, an increasing number of studies have defended the effectiveness of government agencies. The authors argued that the stereotypical attitudes toward government agencies in the existing literature stem from incorrect description of the bureaucratic process. Therefore, it is necessary to understand the concept of "better performance" in public organizations and how it can be achieved.

Performance can be an ambiguous term for any organization, particularly for public organizations. Generally, the level of performance is defined as the extent to which an organization or policy has achieved the "intended or expected results." To a large extent, the evaluation of organizational performance is contingent on whether the mission and objectives are explicitly specified. Performance measurement in the private business sector is generally much simpler because profit and market share are straightforward gauges. However, determining the best approach to evaluating the public service performance has been debated in the public administration research. The dispute partially stems from the inherent features of public organizations. Public organizations are created to serve multiple groups of stakeholders and they have different and even competing goals and values. Every stakeholder evaluates a public organization based on

different criteria, and most of the time there is no agreement on which criterion is the most important (Boyne, 2003a, 2003b; Brewer & Selden, 2000). For example, education policy must achieve a difficult balance between equity and quality. However, these two goals can scarcely be achieved at the same time. The effectiveness of educational policy is judged based on which value the stakeholders or policy makers emphasize most. In addition to having diverse criteria, the performance of public organizations is also difficult to measure because of technical difficulty (Boyne, 2004). The evaluation largely emphasizes the quantity and quality of output and outcomes of public services. However, in some cases, these are intangible and difficult to quantify (Brewer & Selden, 2000).

In sum, rather than a pure technical process, the selection and use of criteria to examine the level of performance of public organization is more likely to be determined by the philosophy of service fields and ideology of evaluators (Campbell, 1977; Scott, 1977). Therefore, Jobson and Schneck (1982) argued that "if the selection of criteria is never purely an objective research task, then it is partially a function of choice and values: the choice…out of a number of possible alternatives, and the value judgment of the researcher" (pp. 27-28).

2.1.2 The determinants of better performance of public organizations

How better performance can be achieved in the public sector is quite complicated. Considerable effort has been made to speculate on the factors that contribute to performance improvement in the public sector, but many studies have only tested certain facets of determinants. Given the importance of specifying fundamental issues in

understanding performance improvement, some studies have developed a more systematic framework and broader hypotheses about the factors associated with better performance. Rainey and Steinbauer (1999) indicated that public organizations are more likely to perform better when they maintain good relationship with stakeholders, attain a moderate level of autonomy, have high mission valence, strong organizational culture, effective leadership, optimal task design, high work-related motivation, and use technology. Drawing from their model, an empirical study conducted by Brewer and Selden (2000) tested the relationship between performance and two bundles of factors: individual factors and organizational factors. The results indicated that at the agency level, organizational culture and leadership behavior matter to the performance of public organizations, as do individual characteristics such as autonomy, work-related motivation, and task performance. Based on a review of research explaining performance improvement in the public sector, Boyne (2003) proposed a model composed of five clusters of variables that are seen to be influential: sufficient financial resources, external regulation, greater competition in provision of public services, organizational size and structure, and managerial capacity. He concluded that in published studies resources and management are considered to be the two most important determinants of performance.

Frequently, two factors have been highlighted in the existing research on organizational performance in the public sector. The first is the external environment. In contrast to private agencies, the operations and activities of governments are constrained by their socioeconomic contexts and regulations set by oversight authorities (Boyne, 2004). The relationship with external stakeholders determines how much political support, resources, and autonomy an agency can attain (Hargrove & Glidewell, 1990;

Meier, 2000; Moynihan & Pandey, 2005). The contribution of the external environment to public organization performance has been suggested in a number of empirical studies. In O'Toole and Meier's model (1999), one assumption is that public sector performance relies heavily on the stability of the environment. By surveying managers in federal government, Moynihan and Pandey (2005) asserted that external influence, including support from elected officials and the impact from the public and the media, is closely associated with various levels of organizational effectiveness.

The other set of factors explaining why some organizations perform better is the effectiveness of organizational management. An increasing number of articles has argued that management matters to the success of public organizations (Boyne, 2003b; Brewer & Selden, 2000; Meier & O'Toole, 2002; Moynihan & Pandey, 2005; Nicholson-Crotty & O'Toole, 2004). Scholars have paid attention to those internal factors under the control of public managers and expect that reforms of management systems can improve organizational performance (Moynihan & Pandey, 2005). O'Toole defined management as "the set of conscious efforts to concert actors and resources to carry out established collective purposes" (O'Toole & Meier, 1999, p. 510). In the "black box" model, management is seen as a key to determining whether a public organization is able to transfer input to desirable outcomes. If the quality of management practices is poor, the desired organizational outcomes are unlikely to be achieved. Lynn, Heinrich, and Hill (2000) argued that factors that influence performance include not only environmental factors and client characteristics, but also levers that to varying degrees are available to managers. Their findings are consistent with the models developed by Rainey and

Steinbauer (1999) and Boyne (2003b) suggesting that organizations with better management are more likely to experience better performance.

2.2 Effectiveness of Organizational Management

Even though research has consistently found that some aspects of management quality or particular management activities positively affect agency or program performance, only a handful of attempts have been made to theorize systematically how management influences organizational performance (Boyne, 2003b). In other words, the question of what key elements make public organizations operate successfully remains unaddressed. One important incentive of the Government Performance Project (GPP) initiated by the Maxwell School is to attain a better understanding of effective management by "dissecting the black box" (Ingraham, Joyce & Donahue, 2003, p. 14). Scholars suggested that later research testing the real impact of various reform strategies will greatly benefit from better conceptualizing and specification of the notion "managerial capacity" (Moynihan & Pandey, 2005).

Despite appearing under different labels, important managerial practices have been identified in previous research. Boyne (2003b) pointed out that experience from business management can shed light on four categories of factors that are most related to better performance: the leadership style and expertise, organizational culture, human resource management (HRM), and strategy processes and content (p. 372). O'Toole and Meier (1999) conceptualized effective management as including two important but associated aspects: maintenance of internal operations and strategic interaction with the

external environment. The former represents a manager's regular activities of directing and inspiring employees, while the latter emphasizes a manager's capacity to harness complex environmental opportunities for performance improvement. Moynihan and Pandey (2005) highlight the dual roles of public managers "as both actors in a political environment and professionals who effect and are affected by administrative systems" (p. 423).

Lynn, Heinrich, and Hill (2000) highlighted "the discretionary actions" (p. 239) of public managers as an indispensable factor in organizational effectiveness. Organizations might vary in terms of their performance because they are operated based on different leadership practices, staff-management relations, arrangements for communication and decision making, professionalism, and accountability mechanisms. Not taking environmental factors and managerial factors as trade-offs, but rather as complementary to each other, Moynihan and Pandey (2005) argued that organizations would perform better if they used levers such as developing a strong organizational culture, clarifying organizational goals, and decentralizing decision authority.

The framework proposed by Hill and Lynn (2005) elaborates factors relevant to public management in a more systematic way. Their construction of the "logic of governance" was also used by Forbes and Lynn (2005) in their review of empirical research examining international cases. Hill and Lynn (2005) suggested that the term public management is composed of three aspects: the formal structure and managerial arrangement, the strategies and behavior of individual public managers, and the beliefs and values that make public organizations distinctive.

The first dimension has often been examined in the research using the concept of "managerial capacity." The GPP conducted by the Maxwell School pays significant attention to the institutional basis of public organizations and takes it as the key to the success of managerial performance (Ingraham, Joyce, & Donahue, 2003). The GPP defines capacity as the "government's intrinsic ability to marshal, develop, direct, and control its financial, human, physical, and information resource" (Ingraham, Joyce, & Donahue 2003, p. 15). Therefore, managerial capacity is determined by the quality of core management systems: financial management, human resource management, information technology management, and capital management (p. 16). With effective financial management systems, the appropriate distribution and allocation of government funding is granted (Heckman, 2007). Human resource systems are used to manage employees at various levels of hierarchies through recruiting, retaining, motivating, training, and terminating (Andrews & Boyne, 2010; Heckman, 2007). Information management plays an important role in gathering and disseminating key information to decision makers (Ingraham, Joyce, & Donahue, 2003). Capital management systems provide appropriate fiscal plans that ensure the sustainability of public programs in the long run (Andrews & Boyne, 2010). The quality of management is largely contingent on "the character of each system…and on the ways in which these management systems are interrelated" (Ingraham, Joyce, & Donahue, 2003, p. 17).

Findings from empirical studies using similar specifications have provided support for the close relationship between managerial capacity and organization effectiveness. For example, Donahue, Selden, and Ingraham (2000) found that the human resources management capacity, including workforce planning, recruiting, training, and

motivation, is positively associated with human resource performance. O'Leary and Yandle (2000) revealed that states with better institutional capacity tend to have stronger programs. Heckman's (2007) study indicated that the overall management capacity measured by GPP as capital, finance, human resource management (HRM), and information technology (IT) management in state governments has a positive impact on the effectiveness of air pollution control. Coggburn and Schneider (2003) suggested that the state management capacity would have significant influence on priorities of public policy. States with higher levels of management capacity are oriented to allocate their resources to "broad collective benefit" such as highways, parks and recreation, and housing rather than "particularized benefit-type programs" (p. 210). Jennings and Woods (2007) and Jennings and Ewalt (2003) consistently suggested that U.S. states with higher managerial capacity are likely to perform better in their welfare reforms and environmental protection programs. In contexts other than the U.S., the importance of management capacity has also been uncovered in empirical studies. For example, Andrews and Boyne (2010) found that the British local governments with higher managerial capacity also have better government performance and higher citizen satisfaction.

The second dimension of public management research involves the characteristics of individual managers and this research has suggested that organizational performance is attributable to factors under the control of managers. A large volume of research has explored the essence of leadership and treated leadership practices as the key to better performance (Riccucci, 1995; Wolf, 1993; Holzer & Callahan, 1998; Yukl, 1998). Rainey and Steinbauer (1999) even argued that "enough listings of desirable leadership skills and

qualities could be gathered to build another great pyramid" (p. 18). Those studies

contended that, given their authority and discretion over personnel and resource

allocation, public managers' capacity and skills do account for performance improvement

through mechanisms such as taking advantage of various resources and technology,

motivating and coordinating key actors, providing ongoing feedback, designing tasks and

reshaping work settings, and leveraging other inputs to performance.

Fully reviewing the empirical studies that have tested the influence that leadership

might have on the organizational performance exceeds the purpose of this chapter. I will

delve into specific dimensions of leadership, – transactional and transformational

leadership – and develop specific hypotheses on this in the next chapter. However, most

successful leaders and managers have some common competencies: initiating and

facilitating organizational reforms and innovations, managing and unifying people,

emphasizing organizational performance and being accountable for results, and

accurately estimating the environment and developing appropriate strategies (U.S. OPM,

1998).

The third building block of public management research focuses on the values and

beliefs oriented to public interests embedded in the government institution and process.

Specifically, Lynn and Hill (2005) discussed, "[they] reflect managerial choices with

respect to goals, missions, priorities, and adaptation to the institutional environment" (p.

184). Therefore, this component is critical to differentiate government agencies from

other organizations. Important insight into this category has been provided by research on

motivation related to public organizational missions. The existing literature has

repeatedly argued that the employee with a higher level of public service motivation

(PSM) tends to take a job in the public sector and performs better, even when the public organization tends to provide fewer monetary incentives (e.g., Perry & Wise, 1990; Wright, 2001; Wright & Grant, 2010).

Besides, Rainey and Steinbauer (1999) pointed out that the attractiveness and salience of the organizational mission have a direct positive impact on the agency's performance. The mission not only helps organizations maintain competence in terms of human resources, but also motivates employees to align their interests to benefit the organization and work hard to achieve the mission (Wright & Pandey, 2011). In addition, the research on organizational culture and shared values contributes to our understanding of organizational performance. Organizational culture exists either as a matter that is embedded in the consciousness of individuals, such as shared beliefs, philosophies, and values (Ouchi, 1980; Schein, 1989) or as the institutions and sets of rules that regulate and direct employee behaviors toward collective targets (Camerer & Vepsalainen, 1988). Organizations with a strong mission-based culture, which refers to the emphasis on effectiveness and results, tend to have higher levels of performance (Moynihan & Pandey, 2005; Rainey & Steinbauer, 1999). In addition, other types of values have been identified, including adaptability, surveillance of the environment, and responsiveness, which are essential to the success of public organizations (Rainey & Steinbauer, 1999).

What role does public management play in NPM? Actually, in addition to managing for results, another important theme in NPM reforms is to increase the flexibility of public managers by devolving them more authority over finance and personnel (Moynihan, 2006). As opposed to the stereotypical image of managers in the traditional Weberian structure, public managers are expected to play active,

entrepreneurial roles in achieving effectiveness and efficiency by reforming internal

practices and improving their skills (Moynihan & Pandey, 2005). In the new paradigm,

managers are no longer held accountable by excessive regulation and control. They are

motivated to pursue higher performance by the strengthened link between organizational

outcomes and managerial effort (Moynihan, 2006) and, as Moynihan and Pandey (2005)

observed, "…[public] managers face increased calls to justify their management choices

in the context of performance" (p. 422). However, the reality in the implementation of

NPM reforms is somewhat disappointing. Moynihan (2006) found that in U.S. state

governments the performance measurement has been widely adopted, but there has been

less effort to implement reforms that would increase the discretion of public managers.

In conclusion, although delineated and constructed in various ways, the studies

modeling organizational performance improvement have pointed to the contribution of an

effective management system. However, the doctrine of increasing managerial authority,

to a substantial extent, is overwhelmed by other doctrines of NPM, and thus ignored by

government. In turn, this substantially limits the influence and effectiveness of the

reforms that emphasize results (Radin, 2000). One way to solve this problem is to provide

more empirical evidence to support the influential impact of management on

organizational performance, in particular, besides a cohesive and integrated management

system, how strong leadership can make a public organization succeed.

2.3 Overview of Research on the Difference between Leadership and Management

A detailed review of research on leadership and performance has been provided by a number of book chapters and articles (e.g., Rainey, 2009; Ogbonna & Harris, 2000). Therefore it is not the focus of this section. In the last section, I used the framework proposed by Hill and Lynn (2005) to elaborate factors relevant to the public management. In essence, leadership is often considered as one component of management. However, a question remains: is leadership a special dimension of management or a concept that differs from management? If the prominent features of leadership – inspiration, vision, and human passion – are removed, what else can be left? What are the roots of leadership? This section reviews the literature to differentiate leadership and management.

Even though these two words are often used interchangeably, there have been a few attempts to differentiate leadership and management since the 1950s. One approach is to focus on the characteristic of leader's decision-making. Selznick (1957) claimed that "[o]nly some (sometimes none of) the activities of decision-makers are leadership activities…To this end…let us make a distinction between 'routine' and 'critical' decision-making" (p. 24). Some scholars have viewed this question from the distribution of power and authority as well as the interpersonal relationship. Jacobs (1970) argued that management "resides in the relationships between positions in an organization, and is derived from consensually validated role expectations for the position incumbents involved" (p. 231), while leadership is formed based somehow on power-based relationships between people; "[o]ne presents information of a sort and in such a manner that the other becomes convinced that his outcomes (benefits/costs ratio) will be improved if he behaves in the manner suggested or desired" (p. 232). Another example comes from Katz and Kahn (1978, pp. 302-303). They argued that management "is

mechanical compliance with routine directives of the organization." On the contrary, leadership is using authority in the way that exerts most influence.

The third approach pays attention to the traits of managers and leaders. Zaleznik (1977) argued that the core difference rests in their ways of perceiving the organization and the strategies by which they deal with problems from the internal and external environment. The fourth line of research takes the consequences of activities as the criteria to tell the difference between management and leadership. Leadership is more important and is seen as creating desirable outcomes, but management is about "activities of mastering routines" (Bennis & Nanus, 1985). This is, perhaps, the proposition that has been criticized most in the literature. Finally, Rost (1998) synthesized various themes and discarded the biased views in the controversies. He constructed a multi-dimensional perspective. Four salient aspects in his framework are the content of the relationship, people in the relationship, the means whereby people perform activities, and the purpose and expected consequence of the relationship. He asserted that leadership is "an influence relationship among leaders and followers who intend real changes that reflect their mutual purposes," and management is "an authority relationship between at least one manager and one subordinate who coordinate their activities to produce and sell particular goods and/or services" (p. 108).

2.4 Diffusion of Performance Management Reforms

Performance measurement is a process of collecting, reporting, and publishing quantifiable data that provide meaningful information about levels of organizational

activities and achievement (Melkers & Willoughby, 2001). The emphasis on

organizational performance and efforts to collect performance-related data are not new in

public organization administration (Poister & Streib, 1999). To improve workers'

performance to the most efficient level, measuring workload and worker efficiency has

been widely used in scientific management. Given the considerable influence of

Taylorism in the 1910s, the first performance measurement initiative was implemented at

the New York Bureau of Municipal Research (NYBMR) after 1906 (Williams, 2004).

NYBMR is considered the pioneer of modern performance measurement systems

(Bouckaert, 1992) because it emphasized the efficiency and effectiveness of

governmental activities and attempted to connect the input and resources to output and

outcomes of programs and to provide ongoing feedback for performance improvement

(Williams, 2004). The introduction of performance-based budgeting (PBB) in the 1950s

was also oriented by the similar expectation that a focus on productivity and efficiency of

programs would influence the budgetary process. The shift of emphasis from input to

results is considered to stem from rational decision making about the distribution of

financial resources among programs (Jordan & Hackbart, 2003).

Passage of the Government Performance and Results Act (GPRA) in 1993 is a

good example of sustained trends of performance management in administrative reforms

(Radin, 2000). The GPRA explicitly requires federal agencies to develop long-term

strategic plans to specify mission and goals, to set performance targets for the applicable

fiscal year, and to measure performance to evaluate agencies' success or failure (Radin,

2000). The trend toward performance management has been witnessed also at state and

local governments, which in turn has created an impact on their operations and performance.

With regard to implementation at the state level, the research from the 1990s to the 2000s indicates that the performance management system has permeated the various functions of state governments, even though enormous variation exists in the extent of actual use. Melkers and Willoughby (1998) found that by the late 1990s, except for three states – Arkansas, Massachusetts, and New York – most state governments had adopted performance-based budgeting either through formal legislation (31 states, accounting for 62%) or administrative mandate (16 states, 32%). Although broadly adopting performance management to assess program outcomes, states vary considerably in terms of the types of performance indicators used, the implementation strategies, the application of performance measurement to decision making, and the success of the system (Melkers & Willoughby, 1998, 2001).

Findings from more recent studies have confirmed the wide diffusion of performance management systems in state governments. Based on a survey of administrators in budget departments and heads of state agencies about the performance information used in their work, Willoughby (2004) found that more than 70% of respondents claimed the performance management system had been partially adopted, while around 30% considered that it had permeated throughout all the programs of their agencies. In addition, the author indicated that developing useful measures is still a challenge for public managers. State governmental agencies are more likely to use easy-to-measure indicators rather than more meaningful indicators. After conducting content

analysis based on states' performance-related documents, Moynihan (2006) reported that 48 of the 50 states had implemented certain systems to collect performance information.

As opposed to scenarios at state governments, there has been no consensus among scholars about the extent to which performance management systems have been implemented in local governments. This is partially due to the variation in the samples employed and specification of the definition of performance measurement (Poister & Streib, 1999). However, scholars have reason to believe that driven by the idea of "managing for result", many local jurisdictions have adopted and implemented initiatives related to performance management even without legislated requirement (Poister & Streib, 1999). Scholars using self-reported survey questionnaires have pointed out a steady increase in the number of local jurisdictions using performance measures in the 1990s compared to one decade earlier (Poister & Streib, 1999). However, the endeavor to analyze official documents uncovered a different story about the actual use and usefulness of performance information. Hatry (1978) and Usher and Cornia (1981) found that measures of workload are more often used by city governments than those of effectiveness and efficiency. Ammons (1995) assessed related documents published by 97 municipalities that received the "Distinguished Budget Presentation Award," particularly two of their service functions: parks and libraries. He concluded that the actual use of performance information in municipal government is often overestimated in the research using survey questionnaires.

Beyond simply reporting the popularity of performance management reforms in local jurisdictions, more recent studies have attempted to answer the deep-seated questions in the performance management system. These findings have provided further

insight into the strategies that facilitate the application of performance management in the locality and its effectiveness. Poister and Streib (1999) surveyed the senior officials in municipalities with populations greater than 25,000. They suggested that instead of conforming to requirements of state and federal governments, the cities' motivation is often generated locally – with expectations of improving their service delivery and decision-making by using performance information. During development of the measures, departmental and program managers are dominant participants, followed by council members. However, municipalities are split as to whether lower level employees and citizens are involved in the development of performance indicators, with most cities having difficulty to do so. In addition, when asked about the real impact of performance-related data in governmental activities, collecting these data has a more influential impact on improving managerial accountability and enhancing employee emphasis on organizational goals. Scant evidence exists about its actual influence on program decision making, budget allocations, and cost saving.

Consistent with past research, Melkers and Willoughby (2005) found that cities and counties differ regarding the participants in development of performance measures, with budget office staff and managers playing key roles. In addition, this research provides encouragement in that an increasing number of city agencies use outcome measurement, which conveys more information about organizational performance. The local administrators and budgeters of performance measurement are in favor of developing performance-measurement systems and employing measures for a variety of activities and decisions, even though their impact on budgeting processes and outcomes is limited.

At the county level, surveying managers of counties with populations greater than 50,000, Wang (2000) found that performance measurement has been used in all stages of the budget cycle. A large number of counties has used performance measurement in agency requests (77.7%), while fewer have used them in their executive budgets (63.7%). Most counties perform well regarding clarifying goals by performance measurement and locating and tracking performance improvement over time. However, how to refine performance indicators and data analysis become the key to its further application. In another article, Berman and Wang (2000) suggested that performance measurement is used in more than 30% of county governments, and about 10% of them have a high level of use. The use of performance measurement can be found in almost 66% to 75% of county service fields. Regarding distinguishing characteristics that determine the implementation of performance measurement, they found that the managerial capacity matters, which includes having sufficient personal and technical resources to collect, analyze, and use performance data, as well as the support from executive and political authorities. Among counties using a performance management system, the proportion of those with adequate levels of capacity was around 30%. However, this proportion sharply decreased among counties that were less likely to use performance data. Therefore, the authors concluded that managerial capacity is the key to wide adoption of performance management systems in local governments.

2.5 Student Outcomes: Controversies over the Impact of the Outcome-Based Education System

Periodically measuring student performance on standardized tests has become a common method for evaluating the outcomes of the educational activities as prescribed by NCLB reforms. The outcome-based education system is expected to improve the overall student academic achievement as well as close the gap between students from different socio-economic backgrounds and ethnic groups. A large number of empirical studies has concentrated on whether performance measurement has achieved these goals. Three studies (Carnoy & Loeb, 2002; Hanushek & Raymond, 2005; Jacob, 2005) are considered the "most methodologically sound" (Ladd, 2007), with all pointing to a positive impact from outcome-based education reforms on the overall performance of students.

Jacob (2005) sought to test the effectiveness of the reform initiative on student performance in the Chicago public school system. By analyzing panel data at the individual student level, he found that after the implementation of new policies student performance in math and reading increased considerably. A similar positive relationship was also suggested in Carnoy and Loeb's (2002) article. They tried to identify the impact of NCLB by focusing on the intra-state variance in terms of three performance indicators: math scores of National Association of Educational Progress (NAEP), retention rates of students at the ninth grade, and student progression to twelfth grade (particularly from eighth grade or tenth grade). The results indicated that states that have considerably engaged in the outcome-based education reforms do make improvement in student test scores versus those with little or no state assessment. Nevertheless, little evidence can be identified to support the long-term effect of performance measurement. The testing program was found to have no influence on the retention of ninth grade students or the

proportion of students who reach twelfth grade. Hanushek and Raymond's (2005) research found that the educational improvement measured by student performance on NAEP math and reading tests is obvious in the states with strong assessment programs. With regard to low-achieving students, this positive impact is also salient for black, white, and Hispanic students (Carnoy & Loeb, 2002; Dee & Jacob, 2011).

However, when it comes to the second objective, studies have been less optimistic about the effectiveness of the performance-based education system. Even in the same study, scholars have asserted that NCLB is not likely to reduce the learning gap in different student groups (Hanushek & Raymond, 2005). Fuller et al. (2007) criticized the standards-based education policy by indicating that there is no progress in narrowing the disparity between ethnic groups in terms of their performance on state assessments and the NAEP since the introduction of state assessment. The findings from Lee and Wong's (2004) study echoed their proposition. During the 1990s, the states did not address racial and socio-economic disparities in school resources and failed to narrow the achievement gaps among racial and socio-economic groups. A further meta-analysis conducted by Lee (2008) revealed only a modestly positive effect of performance-based education policy on average, but no significant effect on narrowing the racial achievement gap. Fusarelli (2004) concluded that "the promise of NCLB to enhance equity and opportunity by reducing the achievement gap will likely remain unfulfilled due to insufficient funding and an overly simplistic definition of the achievement gap."

Chapter 3: Theoretical Framework and Hypotheses

Over the past decades, the research on performance improvement in the public organization has gained attention from scholars and practitioners. Even though a large volume of studies have sought to uncover factors and processes tied to desirable policy implementation and administrative outcomes, due to the complexity of public organizations, no consensus has been reached on which factor has the most important impact. More recent administrative reforms have directed the discussion about performance improvement back to the traditional focus of public governance and proposed two familiar but untested strategies: focusing on results and reforming management systems.

The last chapter provided a survey of research on how improved performance can be achieved in public organizations. Leadership is seen as the catalyst of organizational change and thus an essential factor of organization success. However, in addition to directly making decisions and leveraging resources that contribute to better performance, leaders also "set the table for success by fostering the right organizational conditions" (Moynihan, Pandey, & Wright, 2012, p. 17). There is growing awareness that the indirect influence of leadership, in other words, the process whereby leaders make a difference, deserves attention in the research of public service effectiveness.

Therefore, this chapter reviews the relevant literature to identify factors under the control of leaders that explain the variance in public organizations' performance. In addition, relationships between variables are constructed to delineate the mechanism through which principals' leadership makes a difference.

The literature review of each variable is composed of two parts. As discussed in the introduction, this research explores the research questions in public organizations. Because the public school system is one of the biggest government-funded and -managed systems in the U.S. and it is comparable to other governmental agencies, I conduct my research in this context and examine hypotheses with public school data. Therefore, the theoretical framework is developed and elaborated primarily based on the literature of public administration, while also draws on theories and empirical evidence from educational administration research.

In sum, to address the research questions for the quantitative analysis, I propose a model that incorporates leadership and management as explanatory constructs. The model is shown in Figure 3-1. The dependent variable is organizational performance. Three sets of hypotheses, which were developed based upon different theories, constitute the model. Some of the hypotheses were developed based on the prior literature and some were based on the results after fitting the data. The first three hypotheses propose the direct impact of principals' leadership on three managerial factors: collaborative culture, workplace safety, and stakeholder participation. The hypotheses 4 to 6 describe the relationships among collaborative culture, performance management, and organizational outcomes. Introducing the organizational learning theory, I argue that performance-based administrative reforms have a positive impact on the improvement of student performance. The extent of using performance management practices relies on whether the organization has a desirable culture. In addition to its indirect impact, culture is also considered to have a direct effect on student test score. When it comes to the public schools, school environment and parent engagement are two well-established factors that

have a considerable impact on student learning. Therefore, in the third set of hypotheses,

I argue that school safety plays a crucial role determining the student learning outcomes.

In addition to these factors, parent engagement has both direct and indirect effects on

school performance. Before elaborating each hypothesis, one limitation needs to be

acknowledged. Some factors such as school's socio-economic status and student

demographic background are not accounted for in the theoretical model. I will discuss it

in details in the last chapter.

Figure 3-1 Theoretical Framework
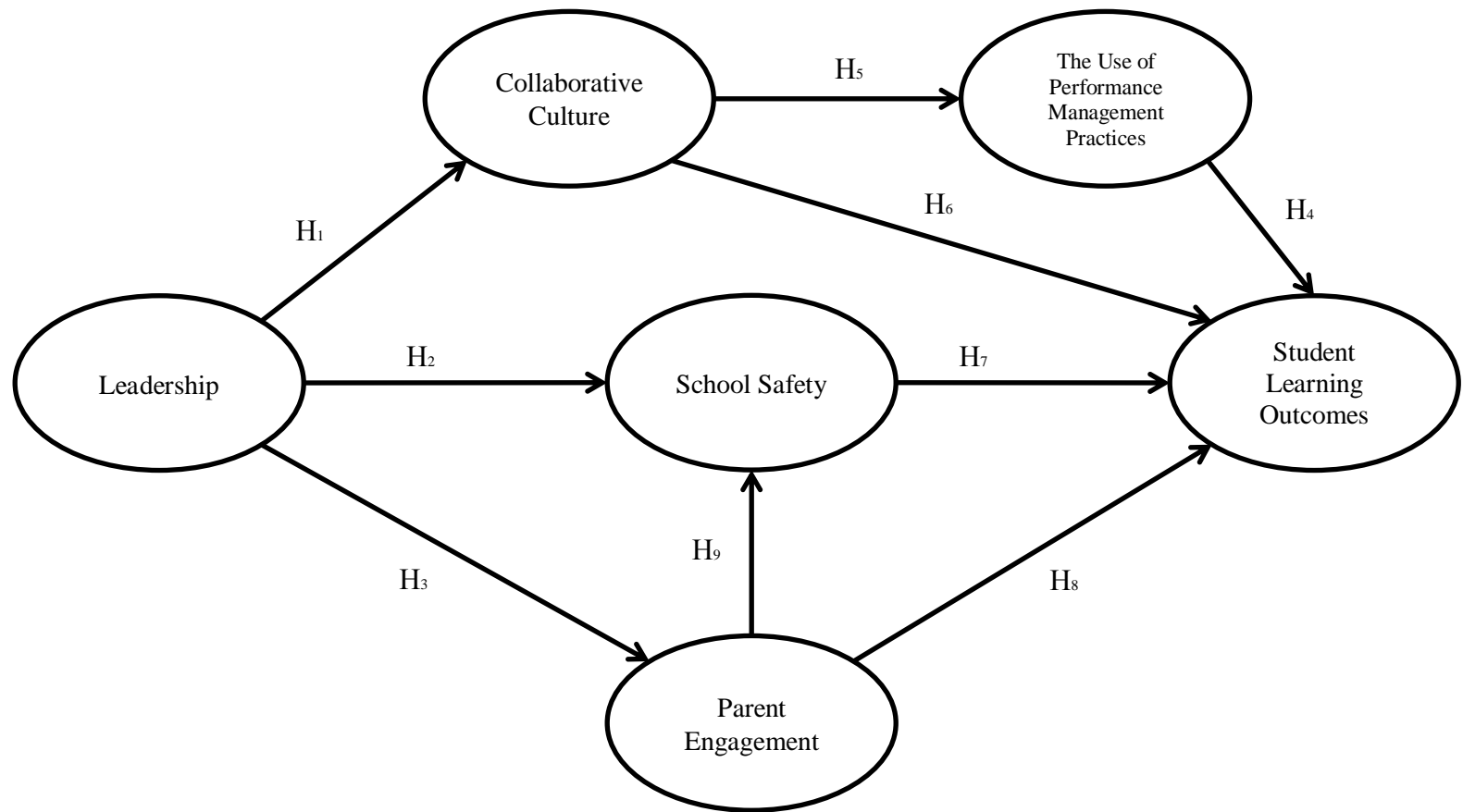
3.1 Leadership, Culture, Workplace Environment, and Stakeholder Engagement

First, much attention is paid to factors directly under the control of leaders, in other words, the actions and activities in which the leaders are directly involved, which would yield improvement of performance. As discussed in the last chapter, intellectual inquiry of leadership has followed different approaches with various focuses. In this research, the delineation of the principal's leadership rests on the theory of transactional and transformational leadership. They are different dimensions; however, should be integrated to achieve the organizational goal of performance improvement. I hypothesize that transactional leadership coupled with transformational leadership is positively related to a stronger collaborative culture, better workplace environment, and higher level of stakeholder engagement.

3.1.1 Transactional leadership and transformational leadership

The investigation of contemporary theoretical models of leadership – transactional and transformational leadership – has gained increasing attention in the public administration (PA) literature. Even though the comparison between transactional and transformational leadership is seen to move research of leadership back to the philosophy of "one best way of leadership" (Ogbonna & Harris, 2000, p. 767), this line of research has supplemented the theoretical grounds of leadership behavior research in public sector management (Wright & Pandey, 2010).

Political scientist James MacGregor Burns (1978) first distinguished between two styles of leadership: transactional leadership and transformational leadership. The

relationship between transactional leaders and subordinates is grounded in contract and exchange (Bass, 1985). The underlying assumption is that this type of leader motivates employees by meeting their needs. Therefore, transactional leadership contributes to organizational effectiveness when leaders identify employees' interests and provide rewards in exchange for accomplishment of tasks. The typical behaviors of transactional leaders include setting clear targets and performance criteria and specifying their connection to rewards and sanctions at the individual level (Jung & Avolio, 2000).

In contrast, transformational leaders engage in building strong emotional connections with their subordinates. They motivate employees to have higher commitment to the organization and its mission and an emotional attachment to the leader by "appealing to their higher ideals and moral values" (Paarlberg & Lavigna, 2010, p. 711; Tracey & Hinkin, 1998; Jung & Avolio, 2000). Transformational leaders are visionary. They communicate a salient and attractive organizational mission and goals to subordinates, motivate them to set goals that transcend their self-interest, and direct their effort to behave in the way that benefits the organization (Bass, 1985; Burns, 1978).

A number of researchers have further advanced the theories of transformational leadership. The model developed by Bass and his colleagues (1985) presents a much more systematic model of transformational leadership. They identified four salient dimensions that characterize transformational leaders, including idealized influence, inspiration, individual consideration, and intellectual stimulation (Bass, Avolio, Jung, & Berson, 2003). To achieve the goal of motivating, transformational leaders are expected to "gain respect and trust," "increase optimism of subordinates," "act in the role of employee mentors, communicate a future idealistic organization," and "encourage

employees to approach old and familiar problems in new ways" (Barbuto, 1997; Barbuto, 2005; Bass, 1985; Bass & Avolio, 1990).

Regarding their relationship, even though Burns (1978) saw the transactional leadership and transformational leadership as two extremes, Bass (1985) cautiously argued that they are just two different dimensions that delineate what makes an effective leader. "Transformational leadership builds on transactional leadership… [t]he models differ on the process by which the leader motivates subordinates and on the type of goals set" (Den Hartog, Van Muijen, & Koopman, 1997, p. 21). Transformational leaders also adopt transactional practices to better interact with subordinates (Bass & Riggio, 2006).

The merit of transactional and transformational leadership has been extensively documented. In particular, the attributes of transformational leadership explain its significance in both private and public organizations. Compared to transactional leadership, relationships are more salient between transformational leadership and performance (Lowe, Kroeck, & Sivasubramaniam, 1996).

The discussion of transactional and transformational leadership has been also extended to the rapidly changing educational contexts. Grounded in Burns' (1978) and Avolio and Bass's (1988) frameworks, the theoretical inquiry and empirical evidence of Leithwood and his colleagues have contributed to the theorization of principals' leadership in specific contexts (Leithwood, 1994, 1995; Leithwood, Dart, Jantzi, & Steinbach, 1993; Leithwood & Jantzi, 1990; Leithwood, Jantzi, & Fernandez, 1994; Leithwood, Jantzi, & Steinbach, 1999; Leithwood, Tomlinson, & Genge, 1996). These authors differentiated two types of leadership in a simple but clear way. Transactional

practices "encompass what usually is thought of as management" (Leithwood, 1994, p. 515), while transformational leadership is "value-based leadership" given the important influence of values (Grojean, Resick, Dickson, & Smith, 2004, p. 227). Leithwood and his colleagues identified six dimensions of the transformational principal: building school vision and goals; providing intellectual stimulation; offering individualized support; symbolizing professional practices and values; demonstrating high performance expectations; and developing structures to foster participation in school decisions (Leithwood, 1994; Leithwood, Jantzi, & Steinbach, 1999). Transactional leadership, on the other hand, places more value on the activities that directly influence teaching and learning (Murphy, 1988; Marks & Printy, 2003; Blase & Blase, 1999; Hallinger, 2005). This is also referred as "instructional leadership" in the public education context. Murphy (1990) described this type of leadership along several dimensions: (1) developing the school mission and goals; (2) coordinating, monitoring, and evaluating curriculum, instruction, and assessment; (3) promoting a climate for learning; and (4) creating a supportive work environment. Instructional leaders infuse management decisions and regular school routines with educational meaning (Marks and Printy, 2003, p. 373).

As in generic theories of leadership, principal cannot rely only on either transformational or transactional strategies in improving student learning and the performance of public schools. Indeed, Marks and Printy (2003) emphasized recognition of the necessity of integrating transformational and instructional leadership.

3.1.2 Principal's leadership and teacher's collaborative culture

Organizational culture may be substantially influenced by organizational leaders. Organizations' founders develop a unique culture in the agency and through organizational structure and behavior; they also infuse and reinforce the values and norms (Bass & Avolio, 1993). Regarding the relationship between leadership and collaborative culture, a leader's transformational behaviors are more likely to create a favorable culture that facilitates collaboration within the organization. Transactional leadership is effective within a fixed leader-subordinate relationship, within which everyone's behavior follows predetermined agreements, norms, and procedures. It does not emphasize the importance of sharing ideas and knowledge, offering different views, or reducing individual isolation. However, transformational leadership pays more attention to constructing mutual respect and trust between people, communicating shared visions, and encouraging employees to work together.

In public schools, transformational principals reform schools by developing a high level of teacher collaboration. They shape this culture by reforming bureaucratic decision-making processes and involving staff in collaborative goal setting, encouraging teachers to bring up problems and successful experiences, and reflecting together on the practice of teaching (Demir, 2008). The positive relationship between principals' transformational leadership and schools' collaborative culture has been demonstrated in Demir's (2008) research. As a result, I propose that

> H_1: Public schools that have stronger principal's leadership are more likely to have a stronger teacher's collaborative culture.

3.1.3 Principal's leadership and school safety

Even though student in-school behavior is subject to various factors, including the environment in which the student lives and grows up and the societal environment at large (Oliva, 1989), promoting an environment for learning and decreasing disruptive behavior and violence are key components on the instructional principal's agenda. Hartzell and Petrie (1992) observed that the incidence of student misbehavior is correlated with whether the school specifies its mission and values and treats student equally. Once shared goals are developed and communicated, principals can productively manage time, space, resources, and people in a way that promotes a desirable organizational climate. Moreover, the authors argued that some student disruptive behavior might be attributable to the failure of teachers' instruction. As a result, for principals, improving the quality of class instruction, such as intervening in teaching preparation, will contribute to the reduction of student's problem behaviors. Other research has paid close attention to the fundamental role principals play in establishing school discipline through effective administration and personal example (Gaustad, 1992). Principals who engage in "managing by walking around" have a positive impact on students' disciplined behaviors (Duke, 1989). These principals are highly visible in the classroom, hallway, and/or cafeteria greeting students and teachers and informally monitoring possible problem areas. Furthermore, principals should communicate their concern for students as well as their willingness to impose punishment if necessary (NAESP, 1983). The substantial influence principals have in determining the effectiveness of school-wide positive behavior support practices has been also highlighted by Gottfredson, Gottfredson, and Hybl (1993). Moreover, Sugai and Horner

(2002) argued that schools that successfully implemented this solution experienced distinct improvements in discipline, thus, I hypothesize that:

> H_2: *Public schools that have stronger principal's leadership are more likely to have higher levels of school safety.*

3.1.4 Principal's leadership and parent engagement

Engaging the public in decision-making processes requires that those who have "power" and dominate the decision making process share the power with those who don't have power and are insulated from decision making (Arnstein, 1969). Moreover, bringing in citizens also means that decision makers must listen to and consider views that differ from their own. This is less likely to happen in an organization in which all the power is centralized to and controlled by one person. Rather, leadership that is dedicated to reforming the bureaucratic structure and strengthening organizational capacity through embracing the citizen input is an important vehicle that promotes citizen involvement.

Denhardt and Campbell's (2006) argument that democratic values are embedded in transformational leadership supports its potential in promoting public engagement. Exploring the normative dimensions of leadership, the authors realized that those "end values" appreciated by transformational leaders are "liberty, equality, justice and community." Therefore, transformational leaders may place greater value on "engaging [followers] in a mutual dialogue" that "developing a vision for change" (p. 566). In public governance at large, transformational leaders are more likely to embrace moral and organizational change that yields inclusive engagement. Yang and Pandey (2011) examined the link between transformational leadership behaviors of chief executive

officers in local government and the effectiveness of participation outcomes. In addition to the reasons mentioned above, they assumed that through inspiration and motivation transformational leaders can help employees see the potential benefits of citizen participation and embrace the change resulting from participation. The results from their empirical analysis further supported the hypothesized relationship.

In public schools, creating mutual trust and constructing platforms that channel parents' input into student learning and school management is the key to effective parent involvement. The relevant literature often emphasizes the school administrative leadership's role in determining the extent to which family and school overlaps (Sheldon & Epstein, 2002). Principals can shape family-school relations and plan and enact family-school partnerships through policy, professional development, district support, and resource allocation (Epstein & Sheldon, 2002; Giles, 2006; Leithwood & Riehl, 2003). When investigating what specific properties of leadership explain the commitment in parents' engagement, studies have shown that in almost every successful story principals have faith in the democratic ideals of schooling and commit to moral change (Giles, 2006; Ylimaki, 2006). Thus, I hypothesize that:

> H_3: *Public schools that have stronger principal's leadership are more likely to have higher levels of parent engagement.*

3.2 Teacher's Collaborative Culture and Performance Management

Performance management has been the cornerstone of the reforms seen recent decades. In this part, the organizational learning theory is introduced and performance

management practices are considered as essential mechanisms of learning. Upon this framework, the consequence and antecedent of performance management are discussed.

3.2.1 Performance management and student learning outcomes

The potential of performance management for better organizational effectiveness is manifested in two mechanisms. One is to strengthen the administrator's accountability to stakeholders. It is widely accepted that the incentive to develop performance measurement systems often stems from a desire to create an effective control mechanism that addresses the information asymmetry problem in the principal-agent relationship (Heinrich, 1999; Sanderson, 2001; Sun and Van Ryzin, 2014). The other contribution performance measurement systems make is to improve the quality of decision making. The information collected from performance measures would provide critical information to public managers about where to direct resources and improvement efforts. In this way, the use of performance measures improves decision making about future strategies and managerial practices in ways that presumably enhance organizational effectiveness and outcomes (Behn, 2003; Holzer & Yang, 2004; Sanger, 2008, Sun and Van Ryzin, 2014).

Most evidence of the positive correlation between performance management efforts and organizational effectiveness can be found in the research that examines the implementation of performance management at local governments. Many of them have been reviewed in the last chapter. Basically, scholars argue that government agencies adopting an outcome-based management system do report positive effects on internal communication, goal setting, program evaluation and management and bureaucratic accountability (Berman & Wang, 2000; Melkers & Willoughby, 2005). However, little

evidence exists about its actual influence on program decision making, budget allocations, and cost saving (Poister &Streib, 1999).

Additional support for a link between performance measurement practices and outcomes springs from studies of specific programs that develop the performance measurement system such as those provided by the Job Training Partnership Act (JTPA). JTPA develops its performance measurement system consistent with the requirements of the GPRA. Each program is evaluated to determine whether it has achieved desired performance goals based on the pre-determine performance criteria. The outstanding programs will be rewarded, while programs with poor performance will be punished. In this way, local job training programs are encouraged to perform in ways that have a positive impact on program outcomes in a multilevel and decentralized system (Barnow, 2000). The results of Heinrich's (1999) study suggested that the performance measurement system inform the JTPA's decision-making in that the governmental decisions about the renewal of training program contractors and funding allocations did rely significantly on performance data. To this extent, the performance management system is important to create incentives for employees and service providers to commit to the overarching goals of state and federal policy. In another study of JTPA, Heinrich (2002) also pointed out that, even though the question remains that whether the data generated by performance management system are reliable, evidence suggests that the use of these data still has potential to improve organizational performance.

Performance assessment tools have also been widely used to improve student learning given the social pressure on school accountability. As in governmental agencies, measuring student performance on the one hand provides a way for stakeholders (e.g.,

parents, teachers, schools) to judge the success of the overall system (Hornby, 2003), while on the other hand, feedback generated from formative assessments "has the capacity to turn each item of assessed work into an instrument for the further development of each student's learning" (Hyland, 2000, p. 234). Schools use performance indicators to monitor student progress on a regular basis throughout the school year. School leaders use this information to provide feedback and advice to teachers. In turn, teachers use the information and received feedback to help individual students, especially those at risk of not meeting standards, and to generally improve their teaching effectiveness. Finally, students receiving this support and enhanced instruction do better on their year-end standardized tests and other outcome measures. Following two early reviews of Natriello (1987) and Crooks (1988) about relevant literature on the effectiveness of formative assessment, the review article by Black and Wiliam (1998) concluded that schools can benefit from using formative assessment in almost all educational settings: content areas, knowledge and skill types, and levels of education. The feedback generated is the crucial factor that makes the difference. Having assessment tools that are aligned with teaching objectives and strengthening the frequent feedback yields substantial learning gains (Biggs, 1999). Thus, I suggest that:

> H_4: *Public schools that have higher commitment to performance management practices are more likely to have better student learning outcomes.*

3.2.2 Teacher's collaborative culture and performance management

The theory of organizational learning can be used to explain the relationship between culture and performance management. I first explain the organizational learning,

and then argue that performance management is a special case of organizational learning practices. Finally I suggest how the use of performance management practices can be influenced by the level of collaborative culture.

Organizational learning research covers various disciplines and has been studied in different theoretical frameworks (López, Peón, & Ordás, 2004). Therefore, it is often confused with other similar concepts such as organizational change, organizational adaptation, organizational development, and knowledge management (Popper & Lipshitz, 1998). Learning is an iterative process that involves evaluating, detecting problems, reflecting, and modifying actions. The ultimate purpose of learning is to encourage individuals or entities to adapt to change, achieve greater understanding and capacities, and improve performance (Argyris & Schon, 1978).

Organization learning studies follow two strands. One line of work focuses on individual learning in the organization (Marsick & Watkins, 2003; Popper & Lipshitz, 1998). The social cognition framework is used to explain the nature and process of human beings' learning. The other line of research sees the organization as the learning agent. Popper and Lipshitz (1998, p. 166) called this "learning by organization." Under this framework, organizational learning is like individual learning at the organizational level (Cohen & Bacdayan, 1994; Hedberg, 1981; Leithwood, Leonard, & Sharratt, 1998; Marsick & Watkins, 2003; Sims & Gioia, 1986) However, the argument that individual and organizational learning are fundamentally different has almost been made in the same research. Learning at the organizational level is composed of individual learning levels, but is more than the sum of many people learning (Argyris & Schon, 1978; Popper & Lipshitz, 1998). Within this meaning, organizational learning is "collective learning

developed from the actions of individuals as those individuals begin to act in ways heedful of the 'imagined requirements of joint action'" (Leithwood, Leonard, & Sharratt, 1998, p. 246; Weick & Roberts, 1996, p. 338). In this paper, I follow the latter strand of organizational learning research, which sees organizational learning as a collective experience, as the result of an interactive and interdependent process in which individual members of groups become involved (Marsick & Watkins, 2003).

Performance management can be considered one of the essential organizational learning practices. Organizational learning is triggered by an external stimulus and extensively relies on a system that generates, collects, processes, and disseminates information. On the one hand, performance gaps provide a source of learning motives, as they reveal that something did not work as planned. On the other hand, a performance measurement system makes it possible to productively track progress, identify performance gaps, and generate essential feedback. The significance of a performance measurement system for organizational learning has been emphasized by Mausolff (2004). His research found that feedback from the performance measurement process can intrigue employees in searching for solutions, either with "a small adjustment that was part of the organization members' existing theory of action" or by implementing "a new practice in a blind, trial-and-error experimentation" (p. 21). Performance management as a component of organizational learning is also manifested in the measurement scale of organizational learning developed by Marsick and Watkins (2003). The Dimensions of the Learning Organization Questionnaire (DLOQ) examines the extent to which a system that captures and shares knowledge is in place.

How can performance management be fostered? Given its definition, organizational learning highly relies on the interaction and collaboration between its individual members. This requirement implies that the success of learning is due in part to the organization's ability to introduce and maintain a favorable culture that values interpersonal trust, capacity to work together, alignment of vision about what to do, and shared meaning about intentions (López, Peón, & Ordás, 2004; Marsick & Watkins, 2003). It also echoes Popper and Lipshitz's (1998) proposition that a strong culture that promotes inquiry, openness, and trust contributes to the effectiveness of organizational learning (Argyris & Schon, 1978; McGill, Slocum, & Lei, 1993). López, Peón, and Ordás (2004) provided empirical evidence to support the hypothesis that collaborative culture influences organizational learning. In a different but similar learning context, Edmondson (1999) examined the influence of interpersonal factors on the learning behaviors in working groups. The results indicated that a particular working environment characterized as psychological safety is positively related to a team's capacity to learn. Psychological safety highlights whether interpersonal trust and mutual respect prevail within groups so that individual members of working groups feel it is safe to discuss performance gaps and take risks.

This link between collaborative culture and organizational learning is also salient in public education. Leithwood et al. (1998) examined the factors that contribute to organizational learning in the public school system. Through interviewing the key players, they found that at both the school district and individual school, the culture that is most likely to be associated with a high level of learning behaviors is the collaborative and collegial culture. This is manifested as mutual support among teachers, respect for

colleagues' ideas, and a willingness to take risks in attempting new practices. Thus, I hypothesize that:

> *H_5: Public schools that have a stronger teacher's collaborative culture are more likely to have higher commitment to performance management practices.*

3.2.3 Teacher's collaborative culture and student learning outcomes

In addition to its indirect impact on school outcomes through the mediating effect of performance management, I argue that a teacher collaborative culture also directly influences student achievement in test scores. Organizational culture is considered one of the "intangible" factors that play a critical role in shaping the working environment and employees' work-related behaviors (Carmeli & Tishler, 2004). Although there is wide acceptance of its value, the relationship between organizational culture and performance is to a large extent anecdotal and conceptual (Gordon & Ditomas, 1992). The dearth of evidence of the linkage in this relationship motivates some scholars to set a research agenda for empirical studies. Even though not systematic, those studies have revealed some common characteristics of the culture within agencies with superior performance: values widely shared and intensively held by members, consistence with the organization's mission and strategies, and adaptive to changing environmental conditions (Ogbonna & Harris, 2000; Gordon & Ditomaso, 1992). Barney discussed the potential for a strong organizational culture as a source of sustained competitive advantage. He concluded that "firms that do not have the required cultures cannot engage in activities that will modify their culture and generate sustained superior performance because their

modified culture typically will be neither rare nor imperfectly imitable" (Barney, 1986, p. 656).

When a collaborative culture prevails among employees, it is more likely that this culture will yield positive employee work-related attitudes and thus better performance. A collaborative culture, which highlights co-workers' trust, support, and respect, reduces interpersonal conflicts and strengthens cooperation among employees. Furthermore, interpersonal trust is helpful in explaining the variance of affective commitment, perceived organizational support, and turnover intention (Ferres, Connell, & Travaglione, 2004), job satisfaction (Cook & Wall, 1980) and individual performance (Kegan & Rubenstein, 1973). In public schools, interpersonal trust is also a key to the success of school reforms. Teachers' capacity and confidence tend to be enhanced by a belief in collaboration within the organizational culture because the responsibility for making performance improvements is shared (Yu, Leithwood, & Jantzi, 2002). Leithwood (1992) argued that "[t]his means that staff members often talk, observe, critique, and plan together. Norms of collective responsibility and continuous improvement encourage them to teach each other how to teach better" (p. 10). Therefore, I propose that:

> *H$_6$: Public schools that have a stronger teacher's collaborative culture are more likely to have better student learning outcomes.*

3.3 School Safety and Parent Engagement

Safety is one indicator of the workplace environment and organizational climate, and this is especially important when creating a desirable learning environment at school. To reduce student misbehavior, the school needs not only strong administrative

leadership, but also collaboration with families and communities. In this section, I elaborate the direct impact of school learning environment and parent engagement on student learning outcomes and then the relationship between parent engagement and school safety.

3.3.1 School safety and student learning outcomes

Even though examining the impact of workplace environment on working behaviors and performance outcomes in the organizational management theories might be a passing fancy, this relationship has been attracting continuous interest in studies of workplace stress and health. From a broad perspective, the workplace environment is part of the agenda of organizational climate research (Griffith, 2006), which is distinct from organizational culture research in that it pays more attention to "organizational 'observable' practices and procedures that are closer to the 'surface' of organizational life" (Denison, 1996; Guion, 1973; James & Jones, 1974).

Studies of organizational climate and workplace environment have been bifurcated into two different but supplementary fields. Some seek to examine the impact of psychosocial state. Others investigate the influence deriving from physical features of the work environment. Evidence has been accumulated from these two analytical strands that the working environment is strongly related to working outcomes such as job satisfaction, psychological well-being, employee motivation, turnover rate, and absenteeism and performance (Clements, 2000; Parker et al., 2003; Pritchard & Karasick, 1973; Sundstrom, Burt, & Kamp, 1980; Vischer, 2006).

Warmth and safety are two specific dimensions of the workplace environment. Higher work motivation and better employee well-being are difficult to obtain unless a safe and welcoming environment is assured because they are related to the fundamental needs of human beings. This is even more salient in schools. One the one hand, creating a safe and orderly school environment influences teachers' psychological states and thus their performance. NYC Mayor Bloomberg noted in his testimony before the City Council Education Committee on March 1, 2002 to "ensure a safe and disciplined, pro-learning environment in every school. Teachers, like the rest of us want recognition, respect and a safe, clean place to work."

On the other hand, school safety also directly determines student learning outcomes. The largely correlational effective school research and the observational research on classroom management and discipline both point to the importance of a safe and orderly environment for student academic performance (Cotton, 2000). Orderliness and discipline as prominent features influence a more positive school climate and higher levels of student achievement (Hoy, Tarter, & Bliss, 1990; Newmann, Rutter, & Smith, 1989). Therefore, to create a learning-focused school environment, significant effort has been made by schools and educators to adopt strategies and interventions that prevent and respond to violence and disruptive behavior that takes place within or outside of classrooms (Peterson & Skiba, 2001). Thus, I hypothesize that:

> H_7: Public schools that have higher levels of school safety are more likely to have better student learning outcomes.

3.3.2 Parent engagement and student learning outcomes

Engaging stakeholders, citizens for the most part, has been a longstanding and active interest in the research on public policy making and governance. Arguments for enhancing citizen participation rest on the belief that this process creates more democratic and effective governance (Cuthill & Fien, 2005; Irvin & Stansbur, 2004). Citizens have ownership of the state; therefore, involving citizens in deliberations over the course of governmental action is the first and most important step in realizing the legitimacy of the government (Heikkila & Isett, 2007). In addition to accountability, the motives for citizen participation also derive from the benefit participation generates for the decision-making process and policy outcomes. On the one hand, greater citizen involvement is related to a higher level of support for government decisions (Kweit & Kweit, 2004). One the other hand, citizens are the ultimate customers of the products and services provided by government. Governments cannot improve citizen satisfaction and performance without understanding the needs of citizens. Involving citizens and soliciting feedback from the public can better inform decision makers regarding better policies (Thomas, 2012). However, practical problems make public administrators hesitate to seek citizens' input in making administrative decisions. Citizens possess narrow and somewhat insular goals that might not be always aligned with the organizational mission. Also, they often lack the professional expertise to deal with the complex problems facing many government agencies. Citizen participation can make governance less efficient due to the delays and red tape it might create (King, Feltey, & Bridget, 1998).

Even though little is known about whether citizen participation indeed has an effect on organizational outcomes, empirical evidence bolsters the desirability and necessity of involving citizens in various stages of the decision-making process. Wang

and Van Wart (2007) tested the relationship between citizen participation and public trust. They found that citizens are more likely to report high levels of public trust if they are actively engaged in decision-making, evaluation, and administrative processes.

In the school context, stakeholder participation is translated to broad efforts of involving parents in school management and decision-making. Parent engagement is not a single dimensional concept, but incorporates two facets: being involved in school and in student learning at home. What this research emphasizes is parent involvement in school management. Even though a variety of patterns and practices exist in parent engagement, Epstein (1992, 1995) identified six types of school-related opportunities for parent involvement and Fan and Chen (2001) simplified them into three broad practices: bilateral communication between school and parent, parent volunteer at school, and/or parent engagement in decision making and school administration (Giles, 2006). Sui-Chu and William (1996) found that parent participation at school had a moderate effect on reading achievement, but a negligible effect on mathematics achievement. Zelman and Waterman's (2010) research found that parent school involvement contributes to positive child outcomes, including better test scores in reading and teacher rating of learning problems. Thus,

> H_8: *Public schools that have higher levels of parent engagement are more likely to have better student learning outcomes.*

3.3.3 Parent engagement and school safety

The significant role parents play in intervening in problem behaviors of students is widely recognized. This is supported by the argument that students are influenced by

the family, school, and community context in which they live and develop (Epstein, 1987, 1995). Having better communication with teachers provides parents with information about students' behavior at school, therefore making it possible to intervene and correct problem behaviors in a timely manner. The belief that family-school collaboration can create a safer and more pro-learning environment is not rare in the literature. The guideline for school safety published by the U.S. DoE highlighted the significance of this collaboration in preventing and helping to deal with extreme acts of violence (Dwyer, Osher, & Warger, 1998). Bowen's (1999) study of elementary school students concluded that school programs that help develop effective bilateral communication between families and schools improved students' behavior and academic skills. A positive relationship exists between the school's effort toward family involvement (e.g., attending workshops, volunteering at the school, helping with learning at home, being involved in school policy reviews and revisions) and better behavior of middle and high school students (Lee, 1994; Ma, 2001; Simon, 2000, Sheldon & Epstein, 2002). Sheldon and Epstein (2002) examined the effectiveness of parent involvement practices in the improvement of student behavior and reduction of discipline problems. They found that even controlling for prior levels of disciplinary actions, schools that made an effort to implement various involvement activities had better student behaviors, including lower percentages of students sent to principals' offices, receiving in-school suspension, and receiving detention. The merit of parent involvement was further confirmed when the authors examined the value-added effect of parent involvement programs. Improving the quality of involvement programs from one year to the next has a

substantial impact on changes in student behaviors regardless of schools' prior rates of

discipline. Thus,

> H_9: *Public schools that have higher levels of parent engagement are more likely to have higher levels of school safety.*

Chapter 4: Data, Methodology, and Data Analysis

The present research uses the case of New York City public schools to explore how improved performance can be achieved in public organizations. I argue that a principal's leadership indirectly influences students' performance on standardized exams through the mediating effects of teachers' collaborative culture, performance management, school safety, and parent engagement. The methodological approach for this research is twofold, including quantitative analysis and content analysis. The data were collected and analyzed sequentially, but the two phases are interactive. The quantitative data has the priority to answer the research questions. Specifically, structural equation modeling (SEM) was used to test hypotheses on data collected in school year 2007-2008. On the one hand, the statistical analysis seeks to answer the first two questions: whether and how do these factors influence student academic performance. One the other hand, quantitative analysis is used to develop the concepts and coding schemes for the subsequent content analysis.

In the second phase, content analysis of documents collected from government and media were conducted. Documents relevant to the sweeping change in the NYC public school system during Mayor Bloomberg's administration were reviewed and coded. Through content analysis, policy evidence was uncovered to further reinforce the models identified in the first phase. Moreover, interpretation of the texts also provided rich details about the philosophy and principles of this reform, thus presenting a complete picture of the intricate process that takes place when a principal's leadership and school management work cohesively in a way that fosters high productivity.

Specifically, four research questions guided the content analysis: (1) to what extent the theoretical interest in performance improvement literature on leadership and organizational management was expressed in Bloomberg's education reforms, (2) what leadership profiles/skills of principals were emphasized in Bloomberg's education reforms, (3) what forms of accountability were emphasized in Bloomberg's education reforms, and (4) what parent engagement model was conveyed by those education reforms.

This chapter is divided into quantitative analysis and content analysis sections. The basic information of research design for each part is elaborated separately.

Method 1: Quantitative Analysis

4.1 Unit of Analysis

The unit of analysis is the major entity that is being analyzed in the study. It is the element about which one observes and collects data. The unit of analysis in this study is the individual public school in NYC, including elementary, middle, and high schools. Even though the measurement of some study variables relies on individual-level data, this research used school-level data where the individual response was aggregated, weighted, and reported at the organizational level.

4.2 Sample

The NYC DoE is the largest system of public schools in the United States. It serves about 1.1 million students in more than 1,000 schools and employees over 75,000 teachers (DoE, 2014). In the academic year 2007-2008, there were more than 1,400 schools – public schools including elementary, middle, and high schools. The data examined in this dissertation includes all these schools.

4.3 Data Sources

This study draws on data published by the NYC DoE in the school year 2007-2008. The DoE is the supervisory agency of all public schools in NYC. One of the important components of school reforms under Mayor Bloomberg and Chancellor Klein was designing and adopting the performance management system, which enables schools to build their capacity for problem solving and self-evaluation, and communicating school performance internally and externally. Three surveys constitute key elements of this initiative, including the Progress Report, Quality Review, and School Learning Environment survey. These are the sources from which the measures in this research are drawn. Primarily, the measurement of dependent variables relied on the Progress Report. Independent variables were captured by items from the Quality Review and School Learning Environment surveys. The details of these three data sources are provided in the following section.

4.3.1 Progress report

As opposed to the Quality Review, which provides indicators about how students might perform in the future given schools' current capacity for learning from the performance statistics, DoE uses Progress Report provides a snapshot of how students performed by the end of the year, relative to the year before and how schools scored relative to other schools in the city at a point in time (Childres et al., 2011). Every year, each school is given a letter grade that incorporates four components: school environment, student performance, student progress, and additional credit. The measurement of dependent variables in this research comes from the second part – student performance. In the elementary and middle schools, the student performance section is graded according to the percentage of students scoring at level 3 or 4 on that year's state mathematics and English language arts exams. For the high school students, this section scored performance on Regents exams and graduation.

4.3.2 Quality review

The Quality Review seeks to investigate the extent to which the schools and educators use performance data to improve instruction and the management system. Therefore, combined with other tools, the Quality Review is an important learning tool that strengthens the capacity of public schools. Beginning in the 2007-2008 school year, every public school in NYC participated in an annual Quality Review. Every school has a one- or two-day visit conducted by a team of experienced and trained external reviewers from the DoE who observe a wide range of activities related to instructional practices, organizational climate, management techniques, and leadership strategy (DoE, 2008).

The 2007-2008 Quality Review had 35 criteria related to gathering data, planning and setting goals, aligning instructional strategy to goals, aligning capacity building to goals, and monitoring and revising. Each schools was rated on these rubrics and given a letter grade, with the highest performance being "outstanding" and lowest being "underdeveloped."

4.3.3 School learning environment survey

The School Learning Environment Survey is a large-scale survey conducted by DoE annually since 2007. The school survey is "among the largest surveys of any kind ever conducted nationally" (DoE, 2014). The survey aims to channel teachers, parents, and students about topics of concern regarding school management and instructional improvement to principals and policy makers. By doing this, better dialogue among all members of the school community is expected to be achieved.

The survey includes three parts: Teacher Survey, Parent Survey and Student Survey. In the 2007-2008 school year, the Teacher Survey population included all full-time teachers in the school who are not substitute teachers and all guidance counselors. In other words, the teacher survey population included all pedagogical staff across schools in NYC (Scoring Guide, 2008). The response rate varied across schools. In 2007-2008, 48,002 teachers participated in the survey, reflecting an average response rate of 62%; 347,829 parents responded to the survey, with an average response rate of 40% (Scoring Guide, 2008).

The survey results were aggregated at the school level by DOE and presented in three formats: (1) count of choice for each question, (2) percentage of respondents to each answer choice in the school, and (3) average score of the answer choices of all respondents to a given question. In this research, the average score was used to measure the independent variables.

Each question score is the average point value of the answer choices of all respondents to that question. The score was calculated based on two steps: In the first step, each answer choice is given a point value between 0 and 10. The answer choice that reflects most favorably on the school's learning environment is awarded 10 points. The answer choice that reflects least favorably on the school's learning environment is awarded 0 points. The intermediate answer choices are awarded point values between 0 and 10. Each item was rated on 4-point Likert-type scale with 1 being "strongly agree" and 4 "strongly disagree." Therefore, "strongly agree" was awarded 10 points, "agree" was awarded 6.6 points, "disagree" was awarded 3.3 points, and "strongly disagree" was awarded 0 points. Even though some questions had the option "does not apply" or "don't know," respondents who chose those options were not considered in the calculation of the question score. In the second step, the average score of each item was obtained by multiplying the points for each choice by the percentage of respondents selecting that choice. The percentage of respondents selecting each answer choice was derived by dividing the number of respondents selecting each choice by the total number of respondents who answered the question in that school. Respondents who did not answer the question and those who selected multiple answer choices to questions that did not

indicate "check all that apply" were not considered in calculating the scores (Scoring Guide, 2008).

Before moving to the next section, it is necessary to explain why I used data from NYC schools for the academic year 2007-2008. Beginning in 2009, the DoE no longer reviews every school annually. The most important reason behind this is the high cost of the review process. Schools spent an enormous amount of time preparing for Quality Review every year. Therefore, schools that received an A or B on the Progress Report combined with a Quality Review rating of proficient or better were only scheduled for review every third year as long they maintained or improved their letter grade. In other words, only the lowest-performing schools now receive Quality Review. With respect to greater variance in terms of school performance and management, this research can benefit substantially from using data before 2009.

4.4 Measurement

4.4.1 Dependent variables

As discussed in Chapter 2, there is no consensus on the best way to measure public school performance, and there have been controversies about using student test scores as a single indicator (Meier & O'Toole, 2002). However, student performance in standardized examinations has become the primary performance outcome of interest for most school systems in the United States, particularly for narrowing down the achievement gap of low-income, minority, and other disadvantaged students. In addition, the performance management system in New York City public schools is largely focused

on test scores. Teachers in the system are also now assessed by the level and gains in test scores of their students.

Consequently, in this research, the dependent variables – student learning outcomes – were measured by test scores of elementary, middle, and high school students. Elementary and middle schools use examinations that differ from those of high schools. Therefore, two separate models were developed. Elementary and middle school students in New York State take yearly State English Language Arts (ELA) and State Mathematics Test by the end of each grade level to assess whether they have met the Common Core Learning Standards. Therefore, I used students' overall performance on ELA and mathematics exams as indicators of academic performance of elementary and middle school students.

To graduate from high school, students must pass Regents Exams in five subjects: English, mathematics, science, global history, and U.S. history and government. Therefore, the Regent Exams are appropriate for assessment of high students' learning outcomes. To make the two models comparable, of five subjects, I used student test scores on the English and math exams to calibrate public high school performance. Note that instead of original (unstandardized) data, weighted pass rates were used. The weighted pass rate is calculated against expectations (based on 8th grade test scores) and against the peer group and citywide average. The advantage of using benchmarked data is that by examining the extent to which each school makes mathematical improvement in pass rate when considering prior performance, gains in school performance can be identified. In sum, four measures of student learning outcomes were employed in this research:

For elementary and middle schools:

- The proportion of all students in the school who meet proficiency standard (Level 3 or 4) in ELA
- The proportion of all students in the school who meet proficiency standards (Level 3 or 4) in math

For high schools:

- The weighted Regents English exam pass rate of all students in the school
- The weighted Regents Math exam pass rate of all students in the school

4.4.2 Independent variables

Principal's leadership

Principal's leadership was measured by teachers' evaluation of the extent to which the principal is effective. The scale was developed from 13 items in the Teacher Survey. It delineates two types of leadership behaviors: transactional and transformational leadership. Measuring by one single factor is consistent with the previous study, which recognizes that two different types of leadership are indispensable functions of the principal (Marks & Printy, 2003). Since the scale constructed from the Teacher Survey has not been tested in empirical research, to ensure validity, I compared it with two existing scales assessing transformational leadership and one scale assessing principal's instructional leadership, both of which are widely cited in public and educational administration. The first was used by Wright and Pandey (2010) to measure transformational leadership of local government officials. This version of the measurement is a shortened version adapted from the one developed by House (1998). The other measure was developed by Griffith (2004), which blends the theoretical

orientation of Bass and Avolio (1993) with specific educational context. In addition, the 18-item scale constructed by Hallinger, Bickman, and Davis (1996) on instructional leadership as part of the Connecticut School Effectiveness Questionnaire was also referred to for validating the measures of transactional leadership in this research.

The specific wording of the 13 items and the leadership domains they tried to map to are listed below. The items have a Cronbach's alpha of 0.98:

Transformational leadership: Intellectual stimulation

- Item 6-2: School leaders invite teachers to play a meaningful role in setting goals and making important decisions for the school.

Transformational leadership: Inspirational motivation

- Item 1-1: School leaders communicate a clear vision for this school.
- Item 1-2: School leaders let staff know what is expected of them.
- Item 1-3: School leaders encourage open communication on important school issues.
- Item 6-3: School leaders encourage collaboration among teachers

Transformational leadership: Idealized influence

- Item 1-7: I trust the principal at his or her word.
- Item 6-1: The principal has confidence in the expertise of the teachers.

Transformational leadership: Individualized consideration

- Item 5-2: To what extent do you feel supported by your principal?

Transactional leadership

- Item 1-5: The principal places the learning needs of children ahead of other interests.

- Item 1-6: The principal is an effective manager who makes the school run smoothly.
- Item 6-7: School leaders visit the classrooms to observe the quality of teaching at this school.
- Item 6-8: School leaders give me regular and helpful feedback about my teaching.
- Item 6-9: School leaders place a high priority on the quality of teaching at this school.

Collaborative culture

Teachers' collaborative culture was measured by teachers' evaluation of the extent to which they perceive trust, respect, and support from co-workers. This variable was measured by five items from the Teacher Survey. The scale has a Cronbach's alpha of 0.95.

- Item 5-2: To what extent do you feel supported by other teachers at your school?
- Item 6-4: Teachers in this school respect teachers who take the lead in school improvement efforts.
- Item 6-5: Teachers in this school trust each other.
- Item 6-6: Teachers in this school recognize and respect colleagues who are the most effective teachers.
- Item 6-10: Most teachers in my school work together to improve their instructional practice.

Performance management

The 2007-2008 Quality Review had 35 criteria related to gathering data, planning and setting goals, aligning instructional strategy to goals, aligning capacity building to goals, and monitoring and revising. Each of the schools was rated on these criteria using a 5-point scale, with 5 being "outstanding" and 1 being "underdeveloped." I used the five criteria to measure the extent to which public schools implement the performance management system:

- Item 2-1: To what extent do school leaders and faculty engage in collaborative processes to set rigorous, objectively measurable goals for improvement and to develop plans and time frames for reaching those goals?

- Item 5-1: To what extent do the school's plans for improving student outcomes include interim goals that are objectively measurable and have suitable time frames for measuring success and making adjustments?

- Item 5-2: To what extent do the school's plans for improving teacher outcomes include interim goals that are objectively measurable and have suitable time frames for measuring success and making adjustments?

- Item 5-3: To what extent do teachers and faculty use periodic assessments and other diagnostic tools to measure the effectiveness of plans and interventions for individual and groups of students in key areas?

- Item 5-4: To what extent do teachers and faculty use the information generated by periodic assessments and other progress measures and comparisons to revise plans immediately in order to reach stated goals?

These five items can clearly be seen as indicators of the effective practice of performance management, including an emphasis on measurable goals, ongoing feedback, targeted intervention, and strategic decision- making based on performance information (Sun & Van Ryzin, 2014). Therefore, I constructed a scale based on these seven items, which has a Cronbach's alpha coefficient of reliability of 0.92, suggesting a very high degree of internal consistency among items.

School safety

The physical learning environment of public schools was measured by four items from the Teacher Survey. The scale assesses the extent to which the teachers feel the school is disciplined and they are respected. A similar scale was also used by Griffith (2006) to measure school climate. The Cronbach's alpha is 0.96.

- Item 12-3: I am safe at my school.
- Item 12-4: Crime and violence are a problem in my school.

- Item 12-5: Students in my school are often threatened or bullied.
- Item 12-7: Most students at my school treat teachers with respect.

Parent engagement

Even though the Teacher Survey also asked respondents to evaluate school's effort of involving parents, this research constructed the parent engagement scale from 6 items from the Parent Survey. There are two reasons of doing this: First, it may help reduce potential mono-method bias and, second, parents' evaluation measures their satisfaction of school's effort to involve parents. Compared to the input measurement, the measurement of output and outcome has stronger relationship with student learning outcomes. The 6-item scale has a Cronbach's alpha of 0.97:

- Item 2-1: I feel welcome in my child's school.
- Item 2-2: I am satisfied with the response I get when I contact my child's school with questions or concerns.
- Item 2-3: My child's school makes it easy for parents to attend meetings by holding them at different times of day, providing an interpreter, or in other ways.
- Item 2-4: The school keeps me informed about my child's academic progress.
- Item 2-5: The school contacts me when my child breaks school rules.
- Item 2-6: The school contacts me to tell me about my child's achievements and successes.

The information of study variables, measurement, data sources and measurement scales are summarized in Table 4-1.

Table 4-1 Measure, Data Source, and Scale of Study Variables

	Variable Names	Measures	Data Source	Scale	Cronbach's alpha
Dependent variables	Student learning outcomes	• The proportion of all students in the school who meet proficiency standard (Level 3 or 4) in ELA • The proportion of all students in the school who meet proficiency standards (Level 3 or 4) in math • The weighted Regents English exam pass rate of all students in the school • The weighted Regents Math exam pass rate of all students in the school	Progress Report	Percentage	
Independent variables	Principal's leadership	**Transformational Leadership:** • School leaders invite teachers to play a meaningful role in setting goals and making important decisions for the school. • School leaders communicate a clear vision for this school. • School leaders let staff know what is expected of them. • School leaders encourage open communication on important school issues. • School leaders encourage collaboration among teachers • I trust the principal at his or her word. • The principal has confidence in the expertise of the teachers. • To what extent do you feel supported by your principal? **Transactional Leadership:** • The principal places the learning needs of children ahead of other interests. • The principal is an effective manager who makes the school run smoothly. • School leaders visit classroom to observe the quality of teaching at this school. • School leaders give me regular and helpful feedback about my teaching. • School leaders place a high priority on the quality of teaching at this school.	Teacher Survey	Respondents reported on a 4 - point scale, with 4 being "strongly disagree" and 1 being "strongly agree". When data was aggregated and weighted at the school level, the "strongly agree" was assigned 10 points, "strongly disagree" was assigned 0 points, while the answers between were assigned 3.3 or 6.6	0.98
	Teacher's collaborative culture	• To what extent do you feel supported by other teachers at your school? • Teachers in this school respect teachers who take the lead in school improvement efforts. • Teachers in this school trust each other. • Teachers in this school recognize and respect colleagues who are the most effective teachers. • Most teachers in my school work together to improve their instructional practice	Teacher Survey	The same as the scale measuring principal's leadership	0.95

Independent variables	The use of performance management practices	• To what extent do school leaders and faculty engage in collaborative processes to set rigorous, objectively measurable goals for improvement, and to develop plans and timeframes for reaching those goals? • To what extent do the school's plans for improving student outcomes include interim goals that are objectively measurable and have suitable time frames for measuring success and making adjustments? • To what extent do the school's plans for improving teacher outcomes include interim goals that are objectively measurable and have suitable time frames for measuring success and making adjustments? • To what extent do teachers and faculty use periodic assessments and other diagnostic tools to measure the effectiveness of plans and interventions for individual and groups of students in key areas? • To what extent do teachers and faculty use the information generated by periodic assessments and other progress measures and comparisons to revise plans immediately in order to reach stated goals?	Quality Review	5-point scale, with 5 being "outstanding" and 1 being "underdeveloped"	0.92
	School safety	• I am safe at my school. • Crime and violence are a problem in my school. • Students in my school are often threatened or bullied. • Most students at my school treat teachers with respect.	Teacher Survey	The same as the scale measuring principal's leadership	0.96
	Parent engagement	• I feel welcome in my child's school • I am satisfied with the response I get when I contact my child's school with questions or concerns. • My child's school makes it easy for parents to attend meetings by holding them at different times of day, providing an interpreter, or in other ways. • The school keeps me informed about my child's academic progress. • The school contacts me when my child breaks school rules. • The school contacts me to tell me about my child's achievement and successes.	Parent Survey	The same as the scale measuring principal's leadership	0.97

4.5 Data Analysis Techniques

Three statistical techniques were employed in the quantitative analysis: principal component factor analysis, confirmatory factor analysis, and structural equation modeling. Principal component factor analysis with varimax rotation was used to identify the pattern within a given set of multiple items (Lattin, Carroll, & Green, 2003).

To examine the research questions and hypotheses posed in this study, SEM was employed. Several benefits of structural equation modeling explain its popularity in the research of social science and psychology and also support its selection and application for this research. The first is its flexibility. SEM allows the researcher to test relationships among study variables, which might include direct and indirect effects, interaction, and reciprocal relations. In addition, it can test relationships between independent variables and multiple dependent variables. Second, SEM uses latent variables to measure what is not manifest. Researchers can examine how well such measures reflect their intended constructs (Byrne, 2009; Kline, 2011). Third, SEM has advantages in dealing with measurement errors. It estimates the relationship between the latent, not the observed, variables, thereby correcting for the effects of measurement error. However, like other statistical techniques, SEM has inherent limitations that deserve attention. Perhaps the most important one is that SEM cannot replace a rigorous experiment or quasi-experiment design in searching for causal relationships. Therefore, caution is needed when interpreting the results of SEM because "the results of an SEM analysis cannot generally be taken as evidence for causation" (Kline, 2011, p.8).

Anderson and Gerbing (1988) suggested an approach involving two steps to test the proposed relationships. The first is to establish the measurement model assessing the convergent and discriminant validity of all the concepts. Five independent variables, including principal's leadership, collaborative culture, parent engagement, school safety, and performance management, were extracted through principal component factor analysis. The pattern between observed variables and latent variables and measurement reliability and validity were tested to make necessary re-specification through confirmatory factor analysis (CFA). Then combining the measurement model and path model, the SEM that specifies the relationships among the concepts was constructed and the hypotheses were tested.

4.6 Data Analysis Process

4.6.1 Data screening

To conduct the analysis, it is necessary to begin by preparing the data. For structural equation models, this process involves two basic parts: (1) identifying and handling missing data and (2) ensuring that multivariate statistical assumptions are met (McDonald & Ho, 2002).

First, the fit and modification indexes in SEM require datasets with no missing values. The way of dealing the missing data is guided by the principle that if the missing variables or observations are less than 10% of the total observation, scholars can delete the cases with missing values. In this research, there were 1,089 observations regarding

the elementary and middle schools, but 87 had missing data. Given the large size of the

dataset, I deleted observations with missing values. The final working sample size for

elementary and secondary schools was 1,002. For high schools, 71 schools having

missing values were deleted, which reduced the final working sample size from 441 to

370.

Second, data were examined to ensure that the assumptions of normality were

upheld. Maximum likelihood (ML) and generalized least squares (GLS) estimation in

SEM requires the assumption of multivariate normality (McDonald & Ho, 2002).

Therefore, univariate skewness and kurtosis were examined. There is no consensus about

the cutoff values for acceptable levels. West, Finch, and Curran (1995) suggested that

skewness ranges should be lower than 2 and kurtosis ranges lower than 7. Some scholars

have provided more liberal criteria. For example, according to Kline (2011), 3 or -3 and

greater indicate "extreme" skewness, while one could consider adopt +/− 10 as indicative

of "problematic" kurtosis and +/− 20 as indicative of "more serious" kurtosis. The

skewness and kurtosis parameters of study variables in this research are reported in Table

4-1 and Table 4-2. In both models, the absolute value of skewness of most variables is

less than 1, except the weighted pass rate of the Regent English exam (skewness =2.30).

Except for the weighted pass rate of the regents English exam (kurtosis=16.10), the

kurtosis of other variables fell between these suggested ranges, which indicates a normal

distribution.

4.6.2 Descriptive analysis

Table 4-2 and Table 4-3 provide descriptive statistics for the study's variables. An average of 59% students in elementary and middle schools scored at proficiency levels of 3 and 4 on the ELA exam, while this number is 76%, slightly higher, on the math exam. In high schools, the average weighted pass rate for the Regent English exam is 1.04, and it is 1.03 for the Regent math exam. Teachers reported a relatively high level of principals' transactional and transformational leadership, on a 1-10 scale, with a mean value of 6.99 in elementary and middle schools and 6.75 in high schools. In addition, teachers perceived a strong collaborative culture within schools, which is indicated by the mean of 7.35 in elementary and middle schools and 7.29 in high schools. Regarding school safety, most teachers report feeling safe and respected, with a mean value of the school safety measure of 7.12 and 6.74 in elementary and middle schools and high schools respectively. The overall parent satisfaction with schools' efforts to maintain communication is relatively higher in elementary and middle school (mean=7.70) than that in the high school (mean=7.34). The performance management system has been widely adopted and implemented in public schools; on a 1-5 scale, the mean level of performance management practices is similar in elementary and middle and high schools (mean=3.49 and mean=3.32).

Table 4-2. Correlation Matrix of Study Variables – Elementary and Middle School Model

	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Principal's leadership	6.99	1.39	1.78	10.00	-0.65	3.40
Teacher's collaborative culture	7.35	1.00	2.54	9.78	-0.27	3.47
Performance management	3.49	0.61	1.20	5.00	-0.51	3.46
School safety	7.12	1.37	2.82	9.90	-0.38	2.60
Parent engagement	7.70	0.51	5.40	9.80	-0.16	3.89
Proportion meeting ELA standards (Level 3 or 4)	0.59	0.19	0.05	1.00	0.00	2.30
Proportion meeting math standards (Level 3 or 4)	0.76	0.16	0.23	1.00	-0.79	3.09

Table 4-3. Correlation Matrix of Study Variables – High School Model

	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Principal's leadership	6.75	1.40	1.08	9.56	-0.80	3.96
Teacher's collaborative culture	7.29	0.93	4.70	9.90	0.08	2.77
Performance management	3.32	0.69	1.20	5.00	-0.24	3.31
School safety	6.75	1.17	2.80	9.35	-0.22	2.93
Parent engagement	7.34	0.62	4.59	9.20	-0.15	4.00
Weighted pass rate of Regent English	1.04	0.28	0.44	2.99	2.30	16.10
Weighted pass rate of Regent Math	1.03	0.33	0.32	2.43	0.45	4.18

4.6.3 Correlation analysis

Table 4-4 and Table 4-5 report the correlation matrix of public school models. All correlation coefficients are significant at the 0.05 level. Principal's leadership is positively related to teacher's collaborative culture, school safety, and parent engagement. Moreover, a positive relationship exists between the collaborative culture and the performance management, which positively influences the student learning outcomes. In addition, as hypothesized, parent engagement and school safety are positively related and the safe school contributes to better test scores. The strongest correlation exists between student performance in English and math exams (r=0.89) in elementary and middle school model, while in the high school model, the strongest correlation occurs between principal's leadership and collaborative culture (r=0.64).

Table 4-4 Correlation Matrix of Study Variables – Elementary and Middle School Model

	1	2	3	4	5	6	7
1.Principal's leadership	1.00						
2.Teacher's collaborative culture	0.67	1.00					
3. Performance management	0.25	0.22	1.00				
4. School safety	0.64	0.58	0.32	1.00			
5. Parent engagement	0.38	0.38	0.24	0.47	1.00		
6. Proportion meeting ELA standards (Level 3 or 4)	0.31	0.37	0.25	0.69	0.25	1.00	
7.Proportion meeting math standards (Level 3 or 4)	0.30	0.34	0.31	0.68	0.34	0.89	1.00

Table 4-5 Correlation Matrix of Study Variables – High School Model

	1	2	3	4	5	6	7
1.Principal's leadership	1.00						
2.Teacher's collaborative culture	0.64	1.00					
3. Performance management	0.24	0.26	1.00				
4. School safety	0.59	0.51	0.27	1.00			
5. Parent engagement	0.36	0.43	0.21	0.45	1.00		
6. Weighted pass rate of Regent English	0.17	0.21	0.21	0.25	0.17	1.00	
7. Weighted pass rate of Regent Math	0.15	0.13	0.26	0.30	0.19	0.41	1.00

4.6.4 Measurement model

Amos 22.0 was used for the confirmatory factor analysis, which aimed to confirm the construct of six study variables: student learning outcomes, principal's leadership, collaborative culture, school safety, parent engagement, and performance management. The model fit indices for each variable are presented in Table 4-6 and Table 4-7. For the model of elementary and middle schools, the comparative fit index (CFI=0.93) and the Tucker-Lewis Index (TLI=0.92) indicate a good model fit. The root mean square error of appropriation (RMSEA) is 0.08, which meets the required standard. The standardized root mean square residual (SRMR) is 0.06. Though the CMIN (χ2) (4196.103/ 523 = 8.023) and the model chi-square is significant (p=0.000), this is a large concern considering chi-square is extremely sensitive to model complexity (Perry et al., 2008).

In the high school model, the CFI and the TLI are 0.92 and 0.91, respectively. The RMSEA is 0.08. The SRMR is 0.06. The model is significant at 0.001.

Table 4-6 Goodness-of-Fit for Structural Equation Modeling (SEM) – Elementary and Middle School Model

	N	CMIN/DF	P	RMSEA	CFI	TLI	NFI	SRMR
Measurement model		8.02	0.00	0.08	0.93	0.92	0.92	0.06
Structural model	1002	8.07	0.00	0.08	0.93	0.92	0.92	0.09

Table 4-7 Goodness-of-Fit for Structural Equation Modeling (SEM) – High School Model

	N	CMIN/DF	P	RMSEA	CFI	TLI	NFI	SRMR
Measurement model		3.05	0.00	0.08	0.92	0.91	0.89	0.06
Structural model	370	3.10	0.00	0.08	0.92	0.91	0.88	0.09

Reliability of measures was tested using average variance extracted (AVE) and composite reliability (CR). AVE reflects the overall percentage of variance of observed variables captured by the latent construct, with higher AVE indicating a higher level of variance in the indicators explained by the common factor. CR is a measure of reliability and internal consistency based on the square of the total of factor loadings for a construct. Table 4-8 and Table 4-9 report the statistics for reliability and validity of the measures. The AVE should be no less than 0.5, while a CR value is desirable at a level no less than 0.7. In the elementary and middle school model, all concept constructs pass the threshold of AVE and CR, which suggests an accepted level of reliability of the measurement model. In the high school model, except for the construct of the dependent variable, other measures of latent variables are statistically reliable. The AVE and CR values for weighted pass rate of Regent exams are 0.42 and 0.60, respectively, which are slightly lower than the acceptable level. The reason might be that the skewness level for the measure of weighted pass rate for the Regents English exam is relatively high.

Finally, I tested the validity of the constructs, including the convergent and the discriminant validity. With respect to the convergent validity of latent constructs, results show that all loading values for each construct exceed 0.75 in the elementary and middle school model (range from 0.75 to 0.98). In the high school model, the loading values range from 0.97 to 0.57 (weighted pass rate of Regent English). In addition, CR values are greater than AVE for all the variables. With respect to discriminant validity, the AVE method was used to examine whether the square root of AVE for each construct was greater than its highest correlation with any other construct. All constructs met the requirement.

Table 4-8 Validity and Reliability Test Matrix of Study Variables – Elementary and Middle School Model

	CR	AVE	1	2	3	4	5	6
1. Performance management	0.91	0.67	0.82					
2. Principal's leadership	0.98	0.83	0.24	0.91				
3. Teacher's collaborative culture	0.96	0.83	0.19	0.66	0.91			
4. School safety	0.96	0.87	0.32	0.66	0.56	0.93		
5. Parent engagement	0.97	0.83	0.25	0.41	0.38	0.51	0.91	
6. Student learning outcomes	0.94	0.89	0.30	0.31	0.34	0.73	0.35	0.94

Table 4-9 Validity and Reliability Test Matrix of Study Variables – High School Model

	CR	AVE	1	2	3	4	5	6
1. Performance management	0.92	0.68	0.83					
2. Principal's leadership	0.98	0.79	0.22	0.89				
3. Teacher's collaborative culture	0.95	0.79	0.27	0.62	0.89			
4. School safety	0.92	0.74	0.31	0.68	0.60	0.86		
5. Parent engagement	0.97	0.83	0.22	0.36	0.45	0.49	0.91	
6. Student learning outcomes	0.59	0.43	0.36	0.23	0.24	0.41	0.28	0.65

4.6.5 Structural model

The second stage of SEM analysis is adding structural model to test whether the model fits the data and whether the hypothesized direct and indirect relationships between variables can be supported. The modification indices were used to determine whether model respecification is needed. Multiple Goodness of Fit indexes were used and the results are reported in Table 4-6 and Table 4-7. Both the model of elementary and middle schools and the model of high schools suggest an acceptable level of model fit. Even though the χ^2 statistic is significant at the 0.00 level, which might be because of the large sample size, other indexes meet the required standards (CFI =0.93 and TLC=0.92 in the elementary and middle school model; CFI=0.92 and TLC=0.91 in the high school model). RMSEA of 0.08 for both the models indicates only an adequate fit of the data to the model (with the misfit coming mostly from the factor loadings on the indicators of the latent variables).

Method 2: Content Analysis

4.7 Content Analysis Technique

In the second phase, content analysis was used to triangulate the findings in the quantitative analysis. Content analysis is defined as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p. 1278). In addition to counting words, content analysis helps researchers interpret meanings and understand

within a particular text (Zhang & Wildemuth, 2009). Fattore, Dubois, and Lapenta (2012) argued that scholars of public administration would benefit from analyzing textual resources given the abundant output available in public organizations.

Though appearing under different labels, there are basically three approaches to content analysis. They include inductive content analysis, deductive content analysis, and summative content analysis (Hsieh & Shannon, 2005). Of the three methods, deductive content analysis is appropriate when the concept or theories have been developed in previous studies or model testing has identified variables of interest or the relationships among variables (Hsieh & Shannon, 2005; Zhang & Wildemuth, 2009). In the first phase of this research, quantitative analysis identified five essential factors to student learning outcomes. Moreover, the purpose of the content analysis was not to develop a new theory, but rather to examine and describe the policy evidence of these factors in Bloomberg's education reform. As a result, deductive content analysis was used to analyze the qualitative data in this part.

In deductive content analysis, the codes are predetermined based on theory or evidence in the first phase of the research. The next step in analysis is to code all the texts using the predetermined codes. Results are presented by showing the frequency of codes, codes with exemplars, and descriptive evidence.

4.8 Sample

The qualitative analytical process involves two steps, so the research sample differs. In the first step, attention was paid to answer the first question: To what extent is

the theoretical interest in performance improvement literature on leadership and

organizational management expressed in Bloomberg's education reforms? Specifically,

the purpose was to examine whether Bloomberg's education reforms prioritized

principals' leadership, organizational learning, school environment and safety, and parent

engagement. As a result, the content analysis considered all the executive documents

released by NYC government that are relevant to public education.

In the second step, the other three research questions were answered. The purpose

was to provide further details about the principles and philosophy embedded in

Bloomberg's education reform. Are the concepts and dimensions highlighted in the

models consistent with the philosophy in Bloomberg's education policies? In the second

phase, the content analysis was conducted on communicational documents, such as

formal speeches, addresses, and testimony of Mayor Bloomberg and the chancellor, as

well as media interviews and profiles of key players. The primary reason for focusing

only on oral communication documents is that executive orders are formalized and

standardized; therefore, they lack the detail that can explicitly show the decision maker's

vision and philosophy. Oral communications, on the contrary, contain more rhetorical

claims and thus make it possible for subjects both to present the policy and to elaborate

the principles and purpose behind it.

4.9 Data Sources

Executive orders and speeches of public officials might be the most obvious

textual sources for public administration research. They contain the philosophy and

principles of public policies and reflect the priorities of reforms and governance across different eras. Moreover, to provide rich details about policymaking and implementation, text data about the key players can also generate valuable information.

In this research, all the documents were collected from publicly accessible sources, including: (1) news and press releases about education by NYC government and (2) interviews and profiles of key players in the education reform from the media. With respect to the former, documents were obtained from the official website of the Department of Education and the official website of NYC city government. The documents include executive announcements and orders, the transcriptions of the mayor and public officials' speeches, testimony, statements, the mayor's weekly radio addresses, and the mayor's weekly columns. These documents cover the events from 2002 when Bloomberg began the reforms to 2008 when the school data used in statistical analysis were collected.

To clean the data set, several types of documents were excluded from the final working sample: (1) announcements about the appointment or resignation of senior staffs, (2) announcements about regular and routine school management, e.g., deadline extension for application, changes of school bus route due to the strikes, (3) short comments and statements made by the mayor and chancellor on legislation or policies issued by other governmental agencies that are relevant to the Department of Education; these documents often carry incomplete information about the overall policies and, therefore, creating limitations in the coding process, and (4) repeated texts. Frequently, the news and press release offices in NYC government and the DoE post the same content on the same day. All together, 111 documents were collected from NYC.org and

375 from DoE.org. In the second phase of content analysis, 40 speeches of Mayor Bloomberg and Chancellor Klein were reviewed.

The media documents were collected extensively from newspapers, TV documentary series and programs, and educational journals. Most of the media documents covered issues from 2002 to 2008. Some were published or reported after 2008 (2009-2013). However, the policies they covered were initiated in 2002-2008 and have continuous influence or people reported had been in the same positions for 8-10 years. Therefore, in addition to the governmental documents, 13 documents collected from the media were in the final working sample, including interviews about Chancellor Klein, interviews about the chief executive officer (CEO), directors, trainees, or other important players of the Leadership Academy, profiles of the daily work of parent coordinators, and interviews of teachers. In sum, 486 documents were obtained to address the first research question of the content analysis, and 53 documents for the rest of three questions.

4.10 Coding Schemes

This research developed two coding schemes. The coding scheme for the first research question was relatively straightforward. Documents were reviewed to see whether their themes present in the text were relevant to the principal's leadership, performance assessment and organizational learning, parent engagement, and school environment. In the secondphase, the scheme of three concepts (principal's leadership, accountability, and parent engagement) was developed based on existing literature.

With respect to principal's leadership, this research is interested in which leader profile(s) (transactional leadership and/or transformational leadership) was highlighted in the school reform. Therefore, the coding scheme for this concept incorporates two categories: transformational leadership and transactional leadership. The details of these two concepts were provided in Chapter 3. As a general rule, I classified in the transactional leadership category content that primarily concerned leadership functions directly related to teaching and learning, while I privileged the other category – transformational leadership – when the focus was mainly on the school's mission, change, and culture.

Parent engagement rests on two dimensions that differ in terms of parents' actual power in participation. The theoretical justification primarily comes from the literature about different levels of public engagement. Arnstein (1969) organized citizen participation in a ladder pattern and asserted that citizens differ in terms of engagement level. The higher the engagement, the more power participants obtain and the more influence they exert on decision-making. He classified citizen participation efforts into six types, which describe three levels of engagement. Except for pseudo participation, which is actually a symbolic attempt to foster citizen participation, there are two steps in genuine participation: partial participation and full participation (Moynihan, 2003). Partial participation enables the public to engage in policy making and management. People can have a voice, but they lack the power to influence the decision. Decision makers can choose whether to take their input seriously or not. As the highest level, full citizen participation allows the public to have a final say and public organizations must take their views into consideration (Arnstein, 1969; Moynihan, 2003).

The two-step framework of citizen participation is consistent with Goldring and Shapira's (1993) typology of parent engagement in public schools. When engaged in school management and decision-making, parents can be either partially or fully participating. Goldring and Shapira (1993) referred to the first step as parent involvement—participation without power. This means those parents are involved in school affairs without exerting any influence. The further step is empowerment, which refers to the parents' role in exercising control and creating influence within a school, typically through decision-making. Following their theories, this research also classified parent engagement into two categories. To explicitly indicate the difference between them, "empowerment" emphasizes parents' role in exercising control within a school, while "engagement without power" concerns parent participation or input into a school without control.

With respect to accountability, three categories I used for coding are external accountability, internal accountability, and reciprocal accountability. External accountability might be the root of the concept "public accountability." It implies checks and oversight in the principle-agent relationship. The principle (a patron, client, or other stakeholder) devolves discretion and power to the agent and sets performance criteria. Service providers work to meet the targets and their performance is evaluated by predetermined standards with the consequence of either rewards or sanctions. In the school system, external accountability is holding school principals and teachers accountable to achieve better student learning outcomes. This decade has witnessed the effort of strengthening external accountability in the educational reforms, especially

holding schools accountable to the measured student test performance has become the cornerstone of the reforms (Hanushek & Raymond, 2005).

More recently, the meaning of accountability has extended beyond its traditional focus. In terms of internal accountability, the sources of accountability expectation come from inside the organization (Mulgan, 2000). This does not refer to accountability at the individual level but at the collective level. People within the organization have collective expectations, values, and commitments and agree upon a means of meeting these expectations (Elmore, 2005). In the public school, internal accountability sometime is seen as a more essential determination of school success than the external environment. When educators develop shared expectations for teaching and learning and a means of meeting these expectations (e.g., staffs identify standards for student learning, collect information to inform about levels of success, and exert strong peer pressure within the faculty), the internally generated accountability can be a major source of cohesion within the organization (Elmore, 2005).

Reciprocal accountability in Elmore's (2006) research emphasizes two aspects that yield performance improvement: One is support and learning and the other is pressure (Dufour, 2006). Reciprocal accountability highlights equal responsibility to provide knowledge and skill to the service provider that is sufficient to accomplish what has been requested. In other words, in an organization with a high level of reciprocal accountability, in addition to sticking to accountability for results, much effort is made to improve the organizational capacity for problem solving. A summary of the coding scheme is reported in Table 4-10.

Table 4-10. Coding Schemes and Most Frequently Used Words of the Content Analysis

Variables	Categories	Dimensions	References	Most frequently used words/phrases
Principal's leadership	Transactional leadership	1) Developing the school mission and goals 2) Coordinating, monitoring, and evaluating curriculum, instruction, and assessment 3) Promoting a climate for learning 4) Creating a supportive work environment	Murphy (1990)	Instruction, Environment, Support
	Transformational Leadership	1) Building school vision and goals 2) Providing intellectual stimulation 3) Offering individualized support 4) Symbolizing professional practices and values 5) Demonstrating high performance expectations 6) Developing structures to foster participation in school decisions	Leithwood, (1994) Leithwood, Jantzi, & Steinbach, (1999)	Change, Transformation/Transforming, Vision, Shared/Mutual Culture
Accountability	External Accountability		Elmore (2004, 2006)	Results, Academic standards, Performance-based , Achievement
	Internal Accountability			N.A.
	Reciprocal accountability			Resources, Discretion, Empower, Exchange, Support, Professional development
Parent engagement	Empowerment		Goldring & Shapira (1993)	Decision-makers, Advisory body, School governance, Voice, Parent-driven.
	Engagement without power			Accessible, Easy to understand, Liaison, Parent-friendly, Concern, Information, Communication

4.11 Content Analysis Process

The first step of the analysis was to document the extent to which the factors including principal's leadership, performance management and organizational learning, school environment, and parent engagement were present in the news and press releases of Bloomberg's administration during 2002-2008; A total of 486 documents were reviewed to see whether they referred to the issues mentioned above. Each factor was measured by a dummy variable: "1" indicates that the factor was highlighted; otherwise "0" was assigned. In many documents, more than one factor was mentioned. Then the value was aggregated to obtain the frequency of factors presented in the documents. Higher frequencies of specific content indicate added emphasis Bloomberg's reforms of certain variables.

The next step of the content analysis is to read the transcriptions of the oral communications of the mayor and chancellor and extract all sentences that referred to issues related to any dimension of principals' leadership, school accountability, or parent engagement. A "sentence" is a complete unit that is composed of a subject, an object, and a verb, ending a period. The second phase of content analysis was performed with the aid of NVivo 10.

To better guide the classification of texts, before moving to coding, I reviewed one third of the transcripts. I prepared a list of words and phrases that have direct relevance for each dimension of three factors (Table 4-10). Each word was used to identify the phrases that were potential candidates for the categories (transactional leadership/transformational leadership, parent empowerment/parent engagement without

power, external accountability/internal accountability/reciprocal accountability), but the final decision about the attribution to each category was made in accordance with the meaning the attributions had in the transcription.

Chapter 5: Findings and Discussion

The previous chapter reported the data sources, the measurement of study variables, and the analytical process. This chapter presents the findings and discussion of the analysis. Consistent with the organization of Chapter 4, this chapter is divided into two parts examining quantitative and qualitative data.

Findings and Discussion: Quantitative Analysis

**5.1 Findings from Quantitative Analysis**

Figure 5-1 reports the estimates for the elementary and middle school model. The parameters for the structural model are presented as standardized regression weights. The t-statistics for path coefficients of all the hypothesized relationships are significant at the .01 level. This model explains 53% of the variation in the percentage of students who meet the proficiency standard (level 3 or 4) on the ELA and math exams.

Consistent with the hypotheses, principal's leadership has strong and positive impact on teacher's collaborative culture (β=0.66), school safety (β=0.54), and parent engagement (β=0.41). The reported level of collaborative culture is positively related to performance management practices (β=0.20), which has a 0.08 impact on student performance on standardized exams. However, strong collaborative culture is not positively associated with better student learning outcomes, and thus the hypothesis is not supported. As teachers perceive a one standard deviation increase in interpersonal

collaboration and trust, the proportion of students who reach proficiency level on ELA and math exams will decrease by around 2 percentage points. School safety has a 0.76 effect on student learning outcomes. However, parent engagement does not have a direct influence on test scores, but rather an indirect impact through the mediator of school safety (β=0.28).

Figure 5-2 presents the estimates for the high school model. In this case, the model explains 21% of the variation in students' performance on the Regent English and math exams, lower than that of the elementary and middle school model. Most patterns of significant relationships mirror those in the elementary and middle school model, with only a slightly difference in terms of the relationship between culture and student test scores. The principal's leadership has a 0.62, 0.57, and 0.36 effect on collaborative culture, school safety, and parent engagement, respectively. Collaborative culture only has an indirect and positive impact on student performance, which is mediated by a high level of performance management practices (β=0.28). As in the elementary and middle schools, parent engagement has little direct influence on student learning outcomes. However, it makes a difference indirectly through a direct 0.29 effect on school safety.

Figure 5-1 Structural Equation Modeling (SEM) for Elementary and Middle School Model
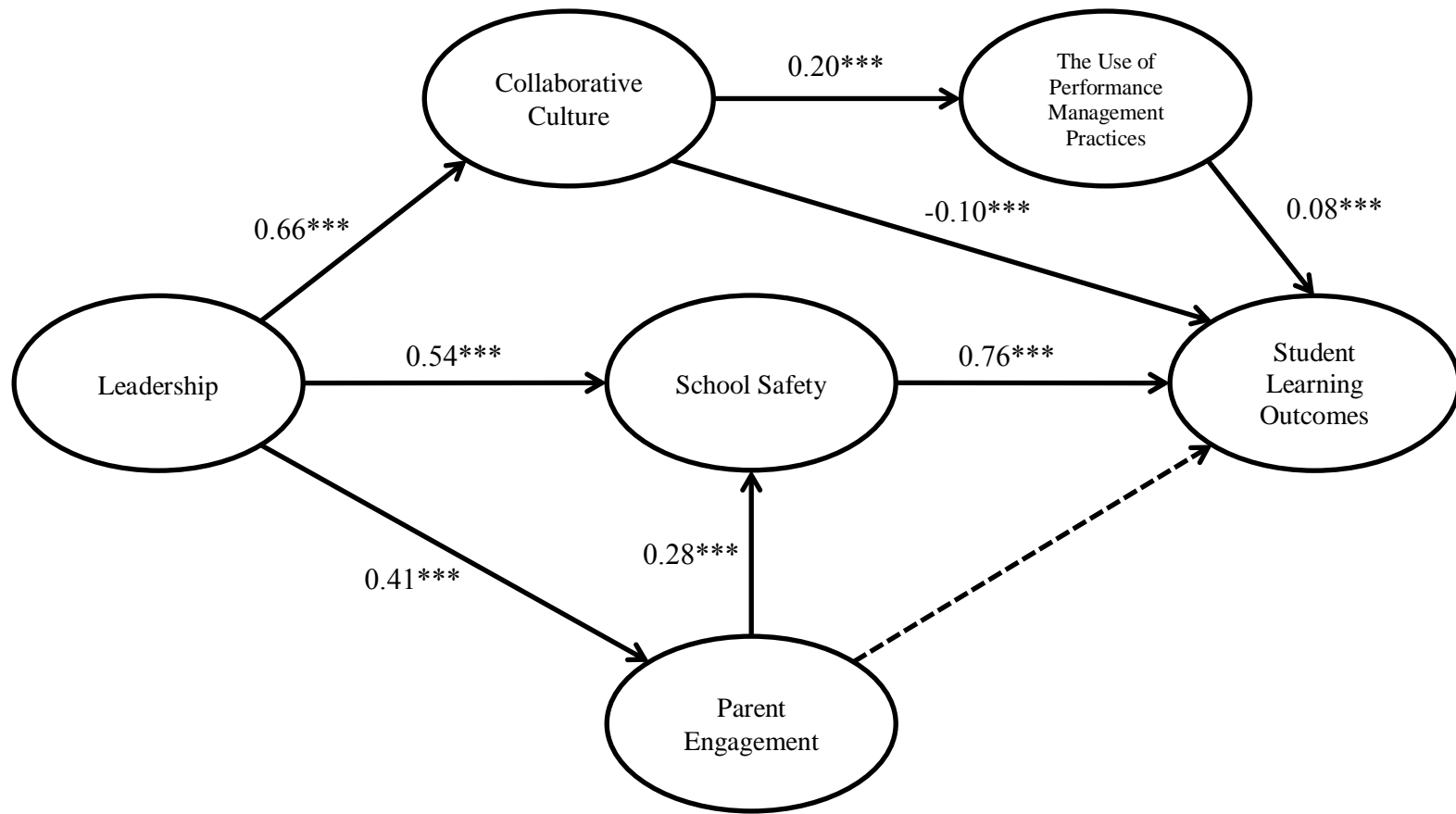
Note: ***p<.01 All coefficients are standardized. Paths that are not statistically significant are shown in dash lines.

Figure 5-2 Structural Equation Modeling (SEM) for High School Model
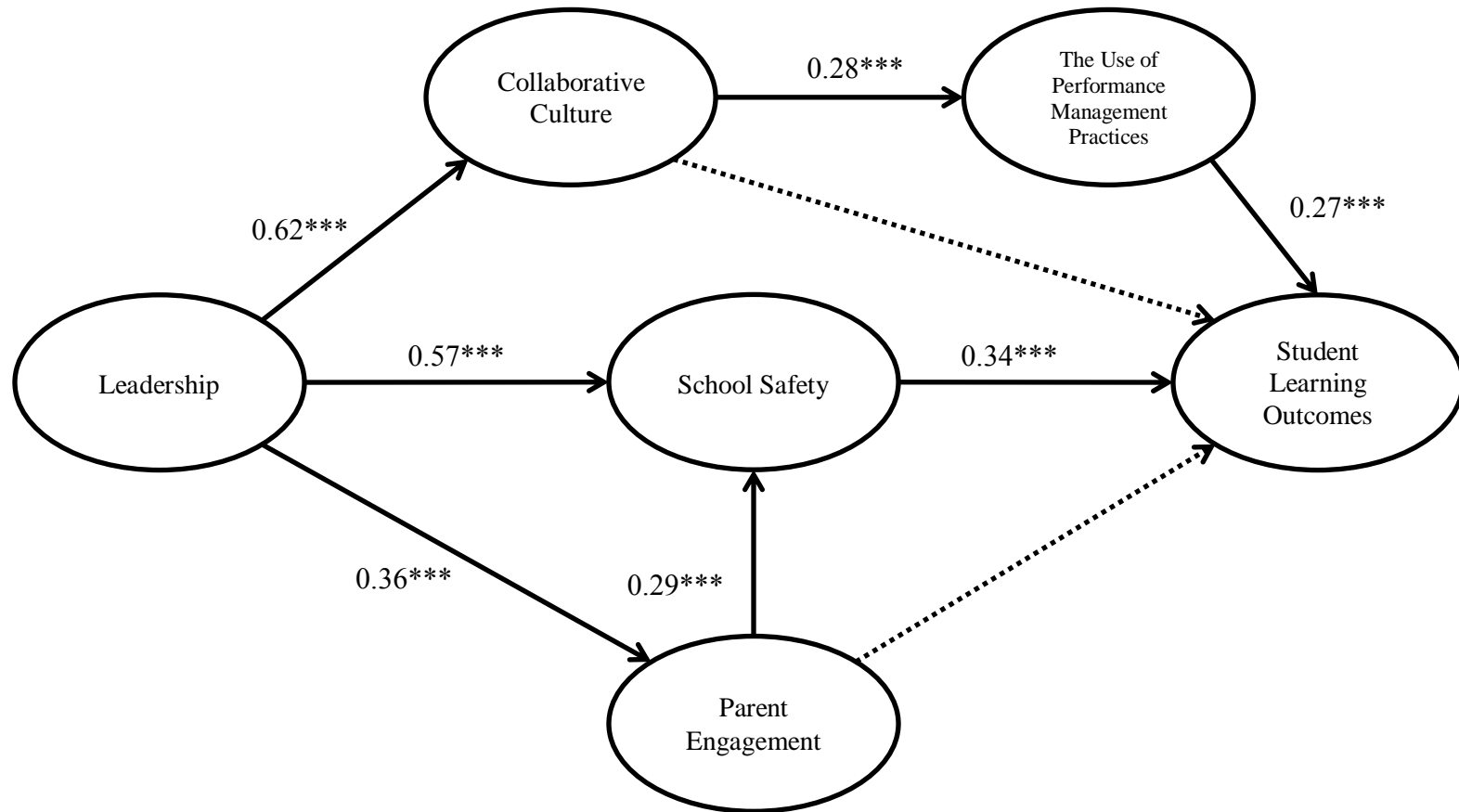
Note: ***p<.01 All coefficients are standardized. Paths that are not statistically significant are shown in dash lines

5.2 Discussion of the Findings

Improving government performance is important as providing public services and policies is the key function government is supposed to undertake. Better service production and delivery is generally positively related to higher levels of citizen satisfaction and trust. Public organizations are subjective to external political influence, thus making public organizations a unique focus for research. Nevertheless, the observation of successful governmental agencies suggests that better organizational performance rests on the effective management.

Linking management to performance also requires the specification of what it is about management that is likely to influence effectiveness. Ingraham and his colleagues (e.g. Andrews & Boyne, 2010, Ingraham, Joyce, & Donahue 2003, Heckman, 2007) placed high value on the institutional base of management. They argued that the quality of management rests on the essential "nature of the systems created to support and advance management activity" (Ingraham, Joyce, & Donahue 2003, p.8). Current research, however, pays attention to the crucial role that leaders and leadership play in directing organizational resources and effective capacity development. The findings presented here support the proposition that a number of the factors that are essential to the effectiveness and performance of public organizations are under the control of leaders: nurturing and shaping the appropriate organizational culture, improving workplace environment and organizational climate, and leveraging stakeholders' input into decision-making. Given their authority and discretion over resource allocation and decision making, leaders' capacity and skills do account for performance improvement. Even though some of these issues have garnered little attention in the current research,

we are unable to reject the significant role of managerial arrangements. No matter the organizations, it is necessary to have the institutional bases that translate leaders' visions and goal into substantive action. Moreover, leaders may be subject to election or appointment, and thus their policies and strategies are disruptive, but government cannot and does not cease. The institutional basis is a significant factor that influences organizational effectiveness in the long term (Ingraham, Joyce, & Donahue 2003).

5.2.1 Principal's leadership, collaborative culture, school safety, and parent engagement

In the following section, I elaborate each finding one by one. Note that instead of examining a single aspect of leadership, either transformational leadership or transactional leadership, this research links the integration of two different types of leadership to other school management factors. This assumption is supported by the statistical analysis; items measuring the principal's value-based leadership and leadership of supervision and coordination load onto a single factor. This confirms the argument that even though taking transactional leadership and transformational leadership as two extremes, still a transformational leader may also adopt transactional practices to achieve better outcomes (Bass & Riggio, 2006).

The findings presented here are also consistent with the increasing recognition of the significance of combining two types of leadership in a public school setting. Given the reforms in public schools, transactional leadership focusing on regular and routine school management is not sufficient. School reorganization demands that the principal become an agent of change. Therefore, transformational leadership emerged as the model

for principals who need to lead schools through reform. Transformational leadership

emphasizes the ingredients of change—ideas, innovation, influence, and consideration for

the individual in the process. Strong transformational leadership elevates employees'

morale and organizational commitment and thus helps the organization overcome the

barriers in the organizational changes. Nevertheless, the ultimate goal of school reforms

is to improve student achievement. The basic idea of prevalent changes in school systems

is to hold principals accountable to a pre-determined specific performance target. The

implications of the standards movement, curriculum frameworks, and new forms of

assessment make transactional leadership the other essential part of the effectiveness of

leadership. In sum, the first finding of this study highlights the engine of public

performance improvement and the integrative view of leadership – transformational

leadership coupled with transactional leadership.

Second, this study contributes to identifying the process and mechanism whereby

a principal's leadership makes a difference. Consistent with this hypothesis, effective

leadership is positively related to strong collaborative culture. Moreover, the safe school

environment is attributable to the principal's leadership. In addition, principal's

leadership explains the various levels of parent engagement. The standardized effects of

principal's leadership on these factors are relatively large. Even though this study cannot

tell which type of leadership makes a difference on each of the three variables, the results

confirm that leadership works through multiple managerial processes: developing

stronger organizational culture, maintaining a safe and welcoming physical working

environment, and extensive involvement of school stakeholders. In addition, leadership

has an indirect relationship with performance management, confirming the observation in

Moynihan, Pandey, and Wright's (2012) study that even if without directly involving in all aspects of administration, leadership can influence the adoption and implementation of administrative reforms and shape organizational outcomes by imposing an indirect impact on certain managerial factors.

5.2.2 Collaborative culture and performance management

Schools with a stronger collaborative culture are more likely to have a high level of use of performance measurements in decision-making and school management. This confirms that two essential and independent aspects determine the success of organizational learning efforts. Popper and Lipshiz (1998) introduced a two-dimensional approach to understanding the nature of organizational learning. One facet is the institutionalized structure and procedural arrangement allowing organizations to systematically collect, analyze, store, disseminate, and use information that is relevant to the performance of the organization. The other facet is relevant to the shared values, norms, and beliefs with organizations. This cultural facet provides a supportive environment that helps enact actual learning activities rather than only following rituals. Organizational learning that is truly effective must take into account the organizational culture in which learning takes place. Effective organizational learning is contingent on establishing a culture that promotes inquiry, openness, and trust.

Moreover, this study contributes to empirical examination of the performance implication of the link between leadership and organizational culture. Given the copious literature arguing that leadership matters to culture, little has been done to further explore

the consequence of this relationship. This might be partially due to the difficulties in observing and measuring organizational culture and its impact in the organization. Hennessey argued that "the most effective leaders foster, support, and sustain organizational cultures that facilitate the type of management reform envisioned by 'reinventing government' and the attendant increases in effectiveness and efficiency" (1998, p. 523). The findings confirm that leadership is a crucial factor in cultivating appropriate organizational culture that facilitate the implementation of performance management reforms, which has a direct impact on performance.

5.2.3 Collaborative culture and student learning outcomes

In the high school model, a collaborative culture does not have a direct impact on student test scores, but rather an indirect impact through performance management. In the elementary and middle school model, culture not only has an indirect effect, but also directly influences the school performance. However, as opposed to the hypothesis, culture is negatively related to student test scores. This might suggest that a collaborative culture does not constitute in itself a source of performance improvement. Collaborative culture must modify the organization's commitment to making data-driven decisions and developing managerial strategies to influence performance. In addition, even if culture may have a direct impact, it would decrease performance. The explanation for the negative impact of culture might be that without valid information and feedback generated by a performance measurement system, it is unlikely that the collaboration between employees can identify the actual problems and errors in past performance.

Therefore, it is impossible to facilitate the integration of new knowledge into employees' working activities. Employees still lack capacity to improve the organizational performance.

5.2.4 Performance management and student learning outcomes

The schools that actively engage in performance management indeed perform better on student test scores. Even though there is no consensus about the contribution of performance management in the public sector, this research provides strong and consistent evidence of a positive impact of performance management on the improvement of organizational outcomes. The relationship exists with respect to both elementary, middle, and high schools and for both English and math. Thus, the findings of this research contrast with the generally weak correlations between performance management and outcomes reported in prior studies of job training programs.

However, the size of the impact of performance management differs in the two models. It tends to have a stronger influence on student learning outcomes in high schools than in elementary and middle schools. Interestingly, the average level of using performance management practices is slightly higher in elementary and middle schools (3.49) than in the high schools (3.32). One possible explanation is that the determinants of student performance on ELA and math exams might be more complex than for high schools. Comparing the school environment, which is a well-established focus of educational improvement efforts, performance management plays a significant but less important role.

5.2.5 Parent engagement, school safety, and student learning outcomes

The direct relationship between parents' engagement and student learning is not supported in the neither of the models. However, parents can have quite a large impact on student learning through their influence on creating a safe learning environment. An appropriate explanation is that the insignificant correlation may reflect a deficiency in the study's measurement of parent engagement. Even though parent engagement is believed to affect student academic achievement, the size of the impact might vary across the approaches to involvement. Parent engagement in school management was considered less important than involvement in student education at home (DePlanty, Coulter-Kern, & Duchane, 2007). Moreover, even for parent engagement in school management, it is not surprising that compared to giving parents actual power in decision making, merely communicating with parents about their children's behavior and performance has limited impact. The scale used in the study only pays attention to the latter. Therefore, future research should consider using better measures of parent engagement that incorporate whether parents are allowed to have the final word.

5.2.6 School safety and student learning outcomes

Finally, school safety has the strongest impact on student learning, in both elementary and middle schools and in high schools. This is not surprising as the organizational environment is where learning, administration, and reform take place. Its environment directly influences employee turnover, satisfaction, and other essential

work-related attitudes. As a result, even though not on the administrative agenda, the environment creates an orderly and safe workplace deserving of attention.

Findings and Discussion: Content Analysis

5.3 Findings and discussion from Content Analysis

5.3.1 Policy priorities of Bloomberg's educational reforms

From 2002 to 2008, 58 government documents about principal leadership, 46 about school environment and safety, 55 about parent involvement, and 39 about organizational learning and performance assessment were issued. Analysis of the total numbers indicates that NYC school reforms placed more emphasis on school safety and learning environment before 2006-2007 – with 39 documents about it, while there were only 7 after 2007. In contrast, organizational learning and performance assessment gained more attention in 2006-2007. Before that, there were only 13 documents about it, but 26 were identified after 2006-2007.

The first conclusion of the content analysis is that the principal's leadership, school safety, parent engagement, and performance management and organizational learning were prominent in the Bloomberg administration's school reform initiatives. In each year from 2002 through 2008, all four factors appeared in the policies. However, there is variation in priorities across the years. It is obvious that Bloomberg's reforms were divided into two phases during this period. The first few years, from 2002 when he took over office to 2006, much emphasis was placed on stabilizing and strengthening the coherence of the whole system (O'Day, Bitter, & Talbert, 2011).

Creating a safe and learning-focused environment, building effective bilateral communication, and maintaining a collaborative relationship between parents and schools not only have considerable impacts on student academic performance, but also help to transcend the barriers to further change and create cooperation with the public for successful implementation. Specifically, the reform of school safety indicated a zero-tolerance policy for infractions. In 2004, Mayor Bloomberg launched the Impact School Initiative (ISI) to reduce school violence and disorder and create safer learning environments. The ISI focuses on intensifying enforcement against low-level crime and disorder, rigorously enforcing the New York City Discipline Code, and correcting school conditions conducive to disorder. In addition, it also introduced an increased number of safety agents and police officers into specific schools. Regarding parent engagement, even though the reforms eliminated 32 community school boards and developed 10 administrative regions, to facilitate parent engagement, the DoE adopted several strategies. First, the DoE created the position of Parent Coordinator in each school. The Parent Coordinator works as a liaison between the school and parents. Moreover, the DoE also created parent offices in each of 32 districts, which work to respond parent questions and concerns and obtain their feedback.

Strengthening the principal's leadership had been one of the focuses of the reform. One of the important decisions the DoE made is to partner with the Leadership Academy to recruit and train school principals. The Leadership Academy is an independent, nonprofit organization. It was developed in 2003 and expanded quickly in the following years. It provides the "Aspiring Principals Program" to select, prepare, and

support candidates who want to take on principal roles and the "School Leadership Coaching Program" to support current principals.

Even though not explicitly presented in the governmental policies in the first phase, early signs of the DoE's vision of enhancing school capacity through performance management system were present in several speeches of Chancellor Klein. The specific initiatives include devising system collecting performance information, and providing support to schools about how to make data-driven decisions. In 2007, Progress Report and Quality Review were adopted and implemented to provide abundant information about students' achievement and schools' performance in terms of management. Moreover, to facilitate the data-driven decision making of instruction improvement, interim assessments were developed and required in all schools. In addition, the inquiry team initiative as well as the Achievement Reporting and Innovation System (ARIS), a comprehensive data system, were developed to support principals and teachers and to solve problems that come up during performance improvement.

5.3.2 Principals' profiles, accountability mechanisms, and parent engagement models

The remaining three research questions of the content analysis explore the details of three factors that were highlighted in education reforms under Bloomberg's administration: principal's leadership, accountability, and parent engagement. In this stage, attention was paid to the documents of oral communication of the key players. The transcripts reviewed and coded included speeches of the mayor and the chancellor, media interviews of Chancellor Klein, interviews about the CEO, directors, trainees, and other

important players of the Leadership Academy, profiles of the daily work of parent

coordinators, and interviews of teachers.

Principals' profiles

Regarding the principals' profiles that were highlighted in the Bloomberg

administration's educational reforms, I found that equal emphasis was given to both

transformational leadership and instructional leadership. This is evident not only from the

public speeches and interviews of the mayor and chancellor, but also from the interviews

of trainees and staff of the Leadership Academy. Some examples illustrate what it is

about principal's transactional leadership in the reform are presented below.

Testimony of Chancellor Joel I. Klein, Oversight Hearing on School Safety on January 28, 2014

"Through the Leadership Academy we are working to develop principals who have the skills and training to meet the needs of our most challenging schools. The training our principals receive at the Academy will include programs specifically addressing safety and security."

Testimony of Joel I. Klein, Chancellor of the New York City Public Schools, Before the New York State Assembly Standing Committee on Education on April 22, 2003

"And, to support the instructional leaders of our schools, we are making the most significant investment in the training and professional development of principals this city has ever seen."

Chancellor Klein's Testimony to the City Council Education Committee Regarding Children First on March 3, 2003

"We are fully committed to making principals effective instructional leaders in their schools. A great school leader – one that inspires and supports teacher and students and creates a parent-welcoming environment – is a key to the success of a school."

Interview of Alexandra Anormaliza (trainee of the Leadership Academy) by Thirteen/WNET New York

"Honestly, my job is to make conditions in this school so that people are free to do their jobs. So, in a way, I'm here to serve them, not the other way around."

Interview of Chancellor Klein by Thirteen/WNET New York

"This academy is going to be focused on teaching principals and then assistant principals to develop several core things. First of all, they have to be instructional leaders. We're in the instruction business. We're not in any other business. We've got to instruct our children and these principals have to be instructional leaders. But they've got to do two things. They've got to know instruction, they've got to understand it, and they've got to be leaders."

At the same time, transformational leadership was extensively highlighted in the documents. Principals are expected to function as catalysts to transform their schools and sometimes even make tough decisions to overcome the constraints and barriers. Examples are presented below:

Chancellor Klein testifies in front of the City Council on June 16, 2003

"The goal of the program [Leadership Academy] is to train school leaders using the best practices and to send them into our schools to be the vehicles of change."

Testimony of Chancellor Joel I. Klein, Oversight Hearing on School Safety on January 28, 2004

"As effective principal can and should lead the way in transforming the culture of his or her school"

Interview of Rafaela Espinal-Pacheco (trainee of the Leadership Academy) by Thirteen/WNET New York

I shared with them my vision of developing the mission. I think it is part of the community's responsibility to work together in developing that mission statement with the school leadership team, the PTA, teachers and other staff. So I shared that with them, that we want to work on the mission statement.

Interview of Dr. Sandra J. Stein (academic dean of the Leadership Academy) by Thirteen/WNET New York

The overreaching goals [of the Leadership Academy] were to create transformational leaders in all schools.

The emphasis on the integration of transformational and transactional leadership might be a more effective strategy than merely relying on either one, given the sweeping change in the NYC public school system. Principals obtained increasing discretion than ever before, and thus have to make critical decisions, which determine the success of schools. As the leaders of the reform, they face tremendous opposition and constraints on change that stem from longstanding norms. Transformational leaders are considered to be more effective in non-routine situations like this (Bass, 1985; Eisenbach, Watson, & Pillai, 1999). They can be determined to change old ways when realizing it no longer work including bureaucratic systems and involving internal and external stakeholders in decision-making. They can enhance employees' commitment and align their behavior with the organizational mission by creating attractive visions and helping employees see the potential benefits. When there are crises and obstacles, transformational leaders provide support to employees and motivate them. They also make themselves the model for employees and lead them to overcome the constraints.

The emphasis on transactional leadership also deserves attention because the purpose of Bloomberg's reforms and education reforms initiated by the federal

government is to put more rigor in the performance-based education system. In the context of national pressures on achievement and accountability, principals also need to leverage resources to the tasks that have direct effects on learning and instruction. As a result, this research also found that school principals are required and are held accountable to create and maintain better learning environments, communicate with parents, provide teachers with professional development and instructional support, and learn from performance data to help struggling students.

Accountability mechanisms

The results of the content analysis show that of the three types of accountability, external accountability and reciprocal accountability have been stressed. Basically, the public school reform in NYC follows the principles of No Child Left Behind. Chancellor Klein said in his testimony on the No Child Left Behind Act before the U.S. House Committee on Education & the Workforce that "No Child Left Behind, might not be perfect, but it is incredibly valuable because it recognizes that the achievement gap … [I]t is critical that we all remember that NCLB is not just important. It's fundamental." The DoE holds high standards for student academic performance. In addition to setting and measuring the achievement of absolute standards, the performance-based accountability system in NYC also highlights the value-added approach. In other words, schools are not only evaluated by the students' performance at the end of the semester, but also by how much progress they have made compared to the first day of school. Chancellor Klein claimed that "NCLB does not motivate educators to help all children achieve at the highest levels possible." However, the new system is believed "to make this possible.

Some remarks from the mayor and chancellor that support the results are presented

below:

Remarks of School Chancellor Joel I. Klein New York Urban League's 2nd Annual Rev. Dr. Martin Luther King, Jr. Symposium on January 15, 2004:

"This theme of responsibility – or accountability – underlies all of the reforms we have made, as well as those we will continue to make in the coming years. Indeed, real change cannot occur unless people in the system – and I mean everybody, from our teachers and our principals, to me, the Mayor, and our students' parents – are truly held accountable for results."

Chancellor Joel I. Klein, Prepared for Delivery at "Teach For America" Dinner on Wednesday on May 19, 2004

"But the real challenge and the most necessary change is to replace the current culture in our schools with one that is performance-based and driven by high standards and real accountability."

Speech by Chancellor Joel I. Klein, "The Bloomberg Restructuring of New York City Public Education: A Personal Perspective," delivered at NYU on December 10, 2004

"The debate is about all of these input issues in the system, and yet Shanker has it exactly right: unless and until we have a system that focuses on student performance, on outcomes, and there is accountability for that, we won't get it right."

Moreover, reforms in NYC can be seen as an extension of traditional accountability mechanisms because it seeks to strengthen the other side of performance improvement. Instead of merely stressing external accountability and leaving principals and teachers to determine how to achieve the performance targets, Bloomberg's policies also pay attention to the reciprocal accountability— for every unit of performance required, there is an equal responsibility to give service providers the equivalent capacity, if they do not possess knowledge and skill the task requires. Leaders can and should use

every component of the organizational change process, including structure, skills, time, and culture, to create conditions that provide meaningful support (Dufour, 2007).

Remarks from the mayor and chancellor that support the results are:

Chancellor Klein's Prepared Remarks to the Partnership for New York City on the Next Phase of the Children First School Reforms on January 18, 2007

"I fundamentally reject the notion that we should ask our great educators to succeed with children but deny them the authority and resources to craft the most effective path to success. A system that spends countless millions 'on behalf of' schools rather than letting educators spend it as they think most effective; a system that restricts their discretion at virtually every turn, and then holds them responsible for failure – ultimately will not and cannot succeed."

Mayor Bloomberg's Testimony before the City Council Education Committee on March 1, 2002

"The fundamental management principle required to fix our 'broken' schools is to put both the authority to do, along with the responsibility to produce, down at the level where our children get a service customized to their individual needs."

Internal accountability was barely mentioned in an explicit and clear manner. One reason is that the policy makers believe that when external and reciprocal accountability work well, principals and teachers are motivated to collaborate in devising innovative solutions to students' individual learning needs and help schools succeed. The other reason is that the internal accountability somewhat ties to the cultural change from the old one "privatizing" the individual's own skills, knowledge, and experience and isolating the individual to the new one building trust and sharing successful practices (Talbert, 2011). The reform of professional culture is more intangible than setting measurable performance targets and providing sufficient resources. However, some programs developed by the DoE indeed have an effect on strengthening internal accountability,

such as the Inquiry Initiative. This initiative is characterized by incorporating the principal, several teachers, and staff members who represent a broad range of expertise on the school inquiry team. The inquiry team determines critical decisions about classroom instruction based on student academic performance. The focus on grade-level performance, especially on underperforming students, is helpful to bring school educators together, make them work toward shared targets, and facilitate shared accountability (Talbert, 2011).

The relationships among three dimensions of accountability deserve some attention. According to the existing literature and our experience, an accountability system that only puts rigorous performance standards in place but may not guarantee positive outcomes if service providers lack sufficient resources and flexibility (Carnoy, Elmore & Siskin, 2013). In addition, the whole system would become fragmented and incoherent without internally shared expectations that can unify and ensure that the activities of everyone work toward the same objectives. However, merely relying on internal and reciprocal accountability is also problematic because people can have high levels of agreement around relatively lower expectations for performance (Carnoy, Elmore & Siskin, 2013). In addition, the absence of external accountability and increases in the amount of authority and resources give rise to abuse. Consequently, although it hasn't been empirically tested in this research, it is interesting and helpful for public organization to consider how to balance external, internal, and reciprocal accountability in a way that results in better outcomes in the performance-based reforms.

Parent engagement models

Finally, in terms of parent engagement, it has been the priority of school reform throughout the 2002 to 2008 period. Mayor Bloomberg and the Chancellor Klein reiterated their desire to develop collaboration between families and schools in almost every key aspect of student performance improvement. Nevertheless, in the documents I reviewed, much of the emphasis was given to maintaining effective communication between schools and parents. This includes informing parents about their children's behavior and performance at school, answering parents' questions and addressing their concerns, and bringing their views into the decision making. Examples include:

Chancellor Joel I. Klein's Testimony to the New York City Council Committee on Education on the Next Phase of the Children First Reforms, January 25, 2007

"Our accountability system will enlist parents as partners to help us make sure that schools succeed. To be effective advocates for their children, they need good information. By providing new information to parents, and by making reports to parents more thorough, comprehensive, and accessible, as well as easier to understand, we will help parents make better choices and be better advocates for their children."

Profile of parent coordinator Cindy O'Neill by WestView News

"I am the first stop for parents, and I approach my job as parent-to-parent... Sometimes they just need to talk about their middle schooler, and I know when to let things set so the waves don't get bigger and when to take action."

In addition to parent engagement in school management, I also found that, even though not listed in the coding scheme, encouraging parents to participate in students' education and calling for parent accountability were considered an important strategy in the reform that helps solve problems related to student learning. Actually, according to the existing literature, parent involvement in academic activities at home is more

important to student's academic performance than participation in school management

(DePlanty, Coulter-Kern, & Duchane, 2007).

Mayor Bloomberg Delivers Keynote Address at New York City's Public Schools' Parent Coordinator Luncheon, November 26, 2007

"It's up to parents to make sure that the kids get to school on time every day, and that they do their homework, make sure that the kids are clothed, then fed, and get a good night sleep, and get the support at home, a loving support that every kid needs, and the reinforcement to know that what they're doing in school is appreciated, and to explain to them why it is in their interest to get a good education."

Chapter 6: Conclusion

This chapter summarizes and discusses theoretical contributions and managerial implications of this research. In addition, it concludes with the study's limitations and directions for future research.

6.1 Theoretical Contributions

A substantial body of litertuare seeks to explore the sources of performance improvement in the public organization. Scholars have made substantial progress in addressing the question of whether management matters to the success of organizations. Of those investiations, the systematic research on the influence of institutional arrangement has uncovered consistent evidence that the capacity and cohesion of the core management sytems are crutial factors to better organizaitonal outcomes. However, the other tradition of performance improvement research, which focuses on leaders and leadership, has been lacking. Even though its value has been widely accepted, we have yet to see an overabundance of empirical evidence, especially evidence from large-sample studies. Thus, the first contribution of this research is to add to the empirical studies exploring management-performance linkages. I found empirical evidence here that organizations having strong leadership do indeed perform better.

In addition, there is now emerging literature on how management matters to performance. This research also takes a broad research agenda to identify the process whereby leadership determines administrative outcomes. The results suggest that leaders

have considerable influence on developing stronger organizational culture, maintaining a safe and welcoming physical working environment, and extensive involvement of school stakeholders. Even though their effects do not directly give rise to higher performance, through managerial processes, these indirect efforts do influence organizational outcomes.

6.2 Managerial Implications

Administrative reforms very often take place in the top-down manner. Leaders are seen as the engineer and catalyst of organizational change, and there is no shortage of claims that leaders should reframe their skill and behaviors to improve effectiveness. Indeed, leaders should play an active role in the implementation process of reforms. However, before simply advocating for this outright, we should first know what it is about effective leadership that is likely to have a sustainable impact on performance improvement reforms. Under the new regime, leaders are somehow expected to play multiple roles and must make crucial decisions that determine the success of reforms and even the organization. Given limited time and attention, leaders cannot be directly involved in every aspect of administration. This requires leaders to identify priorities that are keys to success of the reforms. Therefore, the findings of this study provide a number of important management implications that shed light on the links among leadership, management, and performance improvement.

First, the findings from this study suggest an integrative perspective of leadership. Even though contrasting transactional leadership with transformational leadership helps

in understanding two aspects of leadership behaviors, the fundamental leadership role in the success of organizations cannot be realized unless they are combined. This includes transformational leadership, the value-based facet, has inherent advantages to motivate subordinates (Bycio, Hackett & Allen, 1995; Howell & Avolio, 1993), and transactional leadership, the instrumental facet which is also indispensable in that it determines the success of activities that are most related to the organization's mission.

Second, it is worth noting that leaders can employ the mediating effect of managerial strategies to exert influence on performance improvement. This study identifies three: strong culture, workplace environment, and stakeholder engagement. As noted by Moynihan et al. (2010), leaders can shape the consequence of reforms if they "set the table … by fostering the right organizational conditions" (p. 159). Policy evidence is also salient in the content analysis presented here. In Bloomberg's education reforms, reforming the cultures in schools and the whole system, putting more rigor in school disciplines, and strengthening the liaison between families and schools have always been the priorities. Moreover, Moynihan et al. (2010) also noted that public managers might take a long time to see the real impact of these strategies if leaders use intermediate management factors. However, to gain sustainable performance improvement, it is worth investing in them.

Third, the performance management system is found to have a significant impact on performance improvement in the public organizations. The results provide support to the adoption and implementation of the performance-based management reforms. Two focuses of the reforms: focusing on results and strengthening the managerial capacity were also emphasized in the educational reforms in NYC. The purpose of collecting

student performance data from formal assessment is not only to hold teachers and principals accountable to achieving better performance, but also provide useful information for effective strategies of school management and to improve school leaders' problem solving skills. Even though the evidence was obtained from public school system, this can be also applied to other public organizations. When designing and implementing the performance management system, equal emphasis should be given to collecting performance data and integrating statistics to the key aspects of organization administration. Otherwise, it is not guaranteed that better outcomes can be achieved by doing this (Sun & Van Ryzin, 2014).

6.3 Limitations and Future Research Directions

Although this dissertation provides evidence for the effectiveness of leadership in outcomes, it has limitations that should be acknowledged. First, the socio-economic status and student demographic background of schools are crucial determinants of student learning outcomes and might have substantial impact on other factors in the model: school safety and parent engagement, and even can moderate the impact of school leadership on student academic performance. However, this research did not account for it. The large impact of school safety on student learning outcomes might be the evidence as it might pick up the impact from omitted socio-economic and demographic factors. Future research can address it by including these factors in the model as control variables. The potential moderating effects can be tested by splitting the sample of schools into two groups based on the poverty rate/demographic background.

Second, this study made efforts to address the problems of common source bias and selection bias in the existing literature, but it still has the common problems of cross-sectional analysis. The causal flow from leadership to organizational management may occur in reverse order. Two reasons might be able to explain this. First the measurement of principal's leadership is based on teacher's assessment of the principal, in high performing schools where school actively engage in performance management practices, teachers work together and support each other, effective communication with parents bring in essential feedback, and so on, teachers are more likely to report that the principal has strong leadership and effective strategies. On the contrary, teachers might rate lower leadership if the school has poor performance. Second, principal's self-selection is another endogenous factor that might make a reverse relationship. Better schools are more likely to attract better principals. Therefore student learning outcomes might be influenced by the reasons that are not discussed in this research. One possible solution is that the DoE in NYC has consistent measures of school management and performance management and traditional data about student performance across years, so future research can make improvements to test the model by using longitudinal data.

Third, for the content analysis, at present, only the author of this research coded the documents. For more confidence in the analysis, there is the need for an additional coder to cross-validate the author's work in coding. There should be overlap and minimal variation between coders. A measure called Kappa exists to assess inter-coder reliability. Kappa measures the proportion of net agreement once random agreement is excluded. Since only the author coded the data, the results should be considered preliminary and not definitive.

Forth, due to the use of secondary data, this research has deficiencies in the development of scales. As specified in the last chapter, this problem might result in finding an insignificant relationship between parent engagement and student learning outcomes. Therefore, the measurement of study variables can be improved in future research.

Fifth, this study only tested the indirect connection between leadership and organizational performance improvement, the proposition that is upheld by Moynihan et al. (2010, p. 159): "leadership – even the kind that seeks to inspire – can work through formal management processes." However, note that the direct link between leadership and outcomes, to large extent, is anecdotal (Ogbonna & Harris, 2000). Therefore, theoretical contributions can be made to test both the direct and the indirect association in the same model and compare their size of impact. Moreover, there has been no consensus on the best way to measure performance in the public organization. This study examines the leadership and management role by testing its impact on average school performance level. However, students' gains in test scores have been considered a better indicator of performance improvement in recent years. As a result, future research can assess whether the current model can lead to positive change in student performance. Furthermore, parent engagement might be also correlated with school's use of performance management practices. If parents have the power to influence the school management, they might be one of the motivations that facilitate the implementation of performance management. This relationship also deserves attention in the future research.

Sixth, even though this study uses a mixed-methods design, and the subsequent content analysis provides rich details of policy contexts of each concept and hypothesized

relationship, it would be helpful to focus attention on individual schools. To this end, future studies could benefit from conducting case studies, interviews, and qualitative observations of leaders' behaviors and managerial practices in schools. For example, future research could choose comparable schools with high and low test scores and scrutinize their daily operations, with particular attention to the principal's leadership, collaborative culture, performance management, school learning environment, and parent engagement. By doing this, researchers might be able to better interpret the results or even identify other essential activities and processes that are not considered in our study, but are still critical to determining the successful transformation of a leader's vision into desired outputs and outcomes of public organizations.

Finally, the results should be interpreted with caution beyond of the sample of public schools in NYC. The Teacher survey, Parent Survey and Quality Review are tools designed and implemented by NYC DoE to solicit feedback about the ongoing school reforms. Consequently, it is suspected that only factors that were already on Mayor Bloomberg's agenda were surveyed. It is reasonable to speculate that other factors essential to the achievement of performance improvement goals might not be included in the current model. In addition, even though the school system provides an appropriate context for the empirical examination of public management theories, principals and teachers still differ from employees in general public organizations in many aspects, such as the constraints they face, the daily tasks and services they provide, as well as the stakeholders with whom they cope. Therefore future research can test the model developed in the current research in other contexts or even with other managerial factors.

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