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Does Management Capacity Increase Organizational Performance? An Empirical Analysis of Public Housing Agencies

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

DOES MANAGEMENT CAPACITY INCREASE ORGANIZATIONAL
PERFORMANCE? AN EMPIRICAL ANALYSIS OF PUBLIC HOUSING AGENCIES

A dissertation in partial fulfillment of the
requirements for the degree of
DOCTOR OF PHILOSOPHY

in

PUBLIC AFFAIRS

by

John P. Topinka

2011

To: Dean Kenneth Furton
College of Arts and Sciences

This dissertation, written by John P. Topinka, and entitled Does Management Capacity Increase Organizational Performance? An Empirical Analysis of Public Housing Agencies, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of John P. Topinka is approved.

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ABSTRACT OF THE DISSERTATION

DOES MANAGEMENT CAPACITY INCREASE ORGANIZATIONAL
PERFORMANCE? AN EMPIRICAL ANALYSIS OF PUBLIC HOUSING AGENCIES

by

John P. Topinka

Florida International University, 2011

Miami, Florida

Professor Howard Frank, Major Professor

Since the 1990s, scholars have paid special attention to public management's role in theory and research under the assumption that effective management is one of the primary means for achieving superior performance. To some extent, this was influenced by popular business writings of the 1980s as well as the reinventing literature of the 1990s. A number of case studies but limited quantitative research papers have been published showing that management matters in the performance of public organizations.

My study examined whether or not management capacity increased organizational performance using quantitative techniques. The specific research problem analyzed was whether significant differences existed between high and average performing public housing agencies on select criteria identified in the Government Performance Project (GPP) management capacity model, and whether this model could predict outcome performance measures in a statistically significant manner, while controlling for exogenous influences. My model included two of four GPP management subsystems (human resources and information technology), integration and alignment of subsystems, and an overall managing for results framework. It also included environmental and client

control variables that were hypothesized to affect performance independent of management action.

Descriptive results of survey responses showed high performing agencies with better scores on most high performance dimensions of individual criteria, suggesting support for the model; however, quantitative analysis found limited statistically significant differences between high and average performers and limited predictive power of the model. My analysis led to the following major conclusions: past performance was the strongest predictor of present performance; high unionization hurt performance; and budget related criterion mattered more for high performance than other model factors. As to the specific research question, management capacity may be necessary but it is not sufficient to increase performance.

The research suggested managers may benefit by implementing best practices identified through the GPP model. The usefulness of the model could be improved by adding direct service delivery to the model, which may also improve its predictive power. Finally, there are abundant tested concepts and tools designed to improve system performance that are available for practitioners designed to improve management subsystem support of direct service delivery.

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CHAPTER I

INTRODUCTION

Since the early 1900s, management often has been a central focus for improving public organizational performance. This focus began with Scientific Management's influence, among other Progressive era elements, in reforming the turn of the century government of New York City from an ineffectual political machine to an efficient professional organization (Kahn, 1997). As Frederick Winslow Taylor stated in his testimony to Congress in 1912: "By far the greater gain under scientific management comes from the new, the very great, and the extraordinary burdens and duties which are voluntarily assumed by those on the management side" (Taylor, as found in Shafritz and Hyde, 1997, p. 30), in effect, helping to define the new profession of management.

Reforming government and, consequently management, has ebbed and flowed over the past century (Light, 1997), and about 20 years ago, American scholars elevated public management to a more central role in theory and research, stimulated in large part by the popularity of reinventing government and managing for results (Brudney, O'Toole, and Rainey, 2000; Gore, 1993; Heinrich and Lynn, 2000; Ingraham and Lynn, 2004). Theoretical support that management matters falls under the area of study known as the New Public Management. The principle assumption of this theory is that better management leads to higher performance of public agencies (Ingraham and Lynn, 2004).

This renewed management focus was influenced in part by popular business writings of the 1980s, inspired particularly by Peters and Waterman's *In Search of Excellence* (1982), and in the public arena by Osborne and Gaebler's *Reinventing Government* and Barzelay's *Breaking through Bureaucracy*, both published in 1992.

These books stimulated public administration scholars and practitioners to look upon management—entrepreneurial and liberated management—as one of the primary means to achieve superior performance in providing public goods and services. While informative and occasionally inspiring, the examples in the latter two books were anecdotal or a single case study, leading the authors to espouse prescriptive advice for managers on the basis of a few examples of successful organizations, projects, or events. All three books exhibited scant quantitative support for their conclusions and recommendations, and there were no attempts to determine if less than stellar organizations might have had similar characteristics as successful ones, but failed for some other unidentified reason.

Managing for results or “managerialism,” as Christopher Pollitt, a British scholar, called it, is “a set of beliefs and practices, at the core of which burns the seldom-tested assumption that better management will prove an effective solvent for a wide range of economic and social ills” (1990, p. 1). Over a decade later, David Ammons, a noted observer of local government performance, echoed Pollitt’s earlier observation: “...the amount of hard evidence...appears paltry in comparison to the volumes written promising performance gains or reporting such gains only in a very general sense” (2002, p. 345). Public management scholars accepted the challenge to show through quantitative and other means that management matters in the performance of public organizations. My study was intended to add to these efforts (see, for example, Ingraham, Joyce, Donahue, and Kneedler, 2003; Ingraham and Lynn, Jr., 2004; Meier and Gill, 2000).

Government Performance Project

Management is a broad and complex concept, which poses a challenge in determining how to measure its impact on the performance of organizations. Rather than focus on isolated success stories featuring the role of a manager (or leader), my study defined management on the basis of criteria developed through research efforts under the aegis of the Government Performance Project. Researchers primarily at the Alan K. Campbell Public Affairs Institute at the Maxwell School of Citizenship and Public Affairs, Syracuse University, conducted this project, funded by the PEW Charitable Trusts. Researchers focused on management and performance using four management subsystems, integration and alignment of goals and objectives, and a managing for results framework to represent management capacity--levers of high performance (Ingraham, et al., 2003).

The GPP interviewed top practitioners, analyzed government documents, and surveyed federal, state, and local government officials, and identified a number of criteria for each dimension of the model. The GPP reached a consensus among experts from academia, public organizations, and journalists from *Governing* magazine that the management capacity model was an accurate depiction of best management practices in public organizations. In other words, the model operationalized management, which allowed for one to measure its influence on organizational performance. More specifically, it operationalized management capacity of what might be described as the POSDCORB of contemporary public administration (planning, organizing, staffing, directing, coordinating, reporting, and budgeting). Capacity means power and the GPP

model suggests the potential power of management criteria and related characteristics to improve performance.

In my study, management action—the black box--was represented primarily by three levers of high performance: 1) two management subsystems--human resources and information technology, 2) an overall managing for results framework, and 3) integration and alignment of goals and objectives. The human resource subsystem included characteristics designed to illuminate how an agency fulfills its human resource needs, acquires essential personnel, develops their skills, motivates and rewards them, and deals with less than stellar employees (Ingraham, et al., 2003, p. 37). The information technology (IT) subsystem included characteristics that show how IT systems support timely and effective decision making by managers (p. 40). Two GPP subsystems, financial and capital management were not tested in this study due to limitations on the length of the survey instrument used to collect this information.

Supporting the GPP subsystems in the model were two other levers of high performance: managing for results and integration and alignment. “Managing for results is defined as managing in pursuit of policy performance consistent with the mission and aims of the government or agency” (Ingraham, et al., 2003, p. 43). Integration and alignment characteristics encompassed whether or not the agency had a clear mission and vision and that the right information and resources were provided to the right people at the right time (p. 46-47). The GPP model included a fourth lever of high performance, leadership emphasis and influence. This element of the model basically was not tested as a separate management influence with survey questions and discrete criteria (p. 48), but it was discussed regarding its influence on performance (pp. 131-135). Thus, leadership

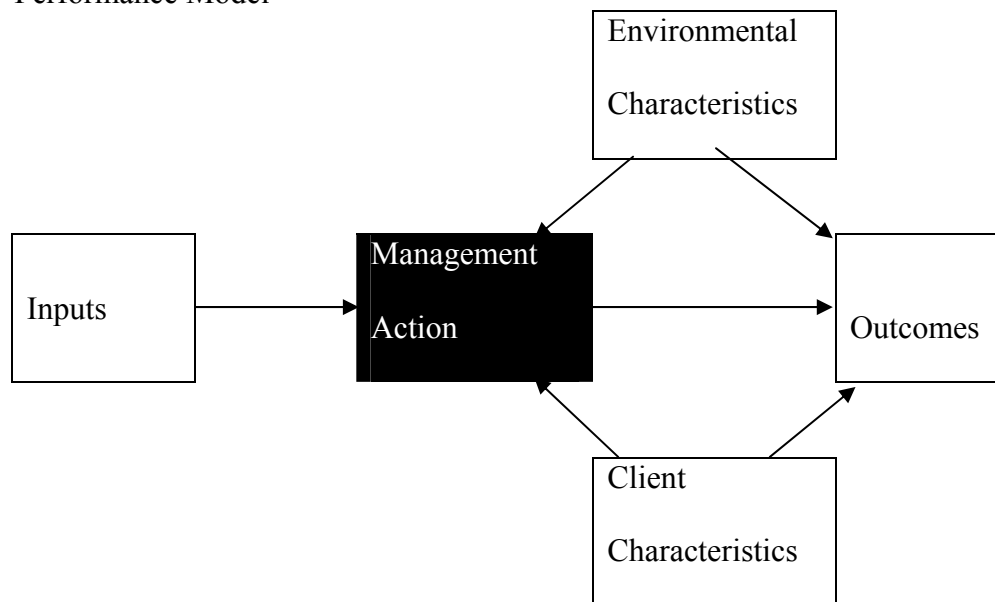
was not included in my study as a specifically testable item, although it is discussed in my concluding chapter in a manner similar to Ingraham, et al., (2003).

Statement of the Problem

In general, my study examined management capacity's ability to increase organizational performance. The specific research problem examined was whether significant differences existed between high and average performing public housing agencies on select criteria identified in the GPP management capacity model, and whether the GPP management capacity model could predict outcome performance measures in a statistically significant manner, while controlling for exogenous influences. It was intended to help illuminate the often-mysterious "black box" part of the following causal model:

Figure 1

GPP Performance Model



Statement of Purpose

The GPP effort graded governments (A through F) by evaluating model criteria, resulting in a management capacity ranking for participating governments or agencies (for example, see the special issue of *Governing*, February 2000, for a graded report on city governments). The graded ranking identified the performance potential of systems of support functions and structural/linking mechanisms supporting direct government operations. The purpose of the present study was to test the management capacity-performance outcome link using survey data from public housing agencies regarding model characteristics and performance data from the U. S. Department of Housing and Urban Development's (HUD) Public Housing Assessment System (PHAS), a monitored and reported set of performance measures for the nation's public housing agencies. A second purpose was to isolate the impact of elements of the management capacity model to assess the relative influence of each of these elements on organizational performance. It was hoped that this analysis would point to areas where both education and practice might be improved. A third purpose was to adjust these results by controlling for various housing and client characteristics. This part of the analysis attempted to discover how variables not under the control of management impacted performance, the results of which may provide insight into HUD's assessment system, which does not adjust for potential mitigating variables (Rubenstein, Schwartz, and Stiefel, 2003). Finally, the model's predictive power was tested through a regression analysis.

The Public Housing Performance Model

In the 1990s, the federal government refocused on performance, stimulated by a number of new laws passed by Congress. These included: The Cranston-Gonzalez

National Affordable Housing Act of 1990 and the Government Performance and Results Act of 1993. As part of its 2020 Management Reform Plan, HUD developed its first Public Housing Assessment System in 1998 (GAO, 2002). The Public Housing Assessment System, used by HUD to evaluate housing agency performance, consists of four major categories with a number of sub-indicators as shown in Table 1.

Table 1

PHAS Performance Measures

Physical (30)	Financial (30)	Management (30)	Resident (10)
Health/safety quality assurance inspection	Current assets divided by current liabilities	Vacant unit turnaround	Survey with the following areas of inquiry:
	Number of months of expendable fund balance	Capital funds and their use	Maintenance and repair
	Average number of days tenant receivables are outstanding	Work orders	Communications
	Occupancy loss	Annual inspection of units and systems	Safety
	Expense management / utility consumption	Security	Services
	Net income or loss divided by the expendable fund balance	Economic self-sufficiency	Appearance

Source: Federal Register, Vol. 65, No. 7, January 11, 2000

The Department of Housing and Urban Development applies a 100-point scoring system for each indicator as part of its performance assessment (number of points are shown in parentheses next to each category). The Department of Housing and Urban Development evaluates each of the sub-indicators through a variety of methods, including site visits for inspections, electronic audits, and random sample resident surveys. The results of these evaluations lead to points for each category and ultimately to an overall performance score. High performers must reach a minimum of 90 points. Standard performers range from 70 to 89 points, and a troubled performer's score is below 70 points. These scores were used as the dependent variable in this analysis.

While HUD's PHAS indicators represent a valid means of assessing performance of public housing agencies (GAO, 2002), the PHAS indicator approach may have limitations. First, there are no controls for demographic and environmental factors. For example, one may find that large public housing agencies are more difficult to manage than small agencies and hence rarely achieve high performer status. Controlling for size may equalize performance assessment. Moreover, the management subsystem assessment (GPP model) proposed here addressed a series of support functions not directly measured by PHAS. Thus, my study allowed for a separate assessment of performance that combined PHAS results, management capacity, and control variables.

Questions and Hypotheses

Simply stated, the purpose of my study was to test quantitatively that management capacity affected the performance of public organizations and to test the impact of environmental and client variables on housing agency performance. Individual survey questions addressed the GPP's model, and data provided by HUD covered individual

agency environmental and client characteristics. Questions and hypotheses were derived from these factors.

Research Questions

1. Do high performing housing agencies differ significantly from average performers on human resource criteria and do these same criteria predict high performance?
2. Do high performing housing agencies differ significantly from average performers on information technology criteria and do these same criteria predict high performance?
3. Do high performing housing agencies differ significantly from average performers on managing for results criteria and do these same criteria predict high performance?
4. Do high performing housing agencies differ significantly from average performers on integration and alignment criteria and do these same criteria predict high performance?
5. Do environmental characteristics affect organization performance in statistically significant ways?
6. Do client characteristics affect organization performance in statistically significant ways?

Hypotheses

Since the model postulated that high management capacity would increase organizational performance, hypotheses related to questions one through four would

suggest that statistically significant positive relationships between capacity elements and outcome performance measures and that the model's criteria would be statistically significant predictors of organizational performance.

The Department of Housing and Urban Development provided data for client and environmental characteristics. These characteristics generally make it more difficult or easier to manage, and thus likely influence performance. The following client characteristics were used in this study: neighborhood poverty rate, occupancy type (elderly versus family occupants), and location of housing (rural, non-center city, center city). Higher neighborhood poverty rates, greater family occupancy, and center city location were hypothesized to influence performance in a negative way; higher levels among these characteristics represent greater task difficulty, and, of course, the opposite would be true for lower levels of client characteristics, and such low levels may influence performance in a positive way.

Environmental variables included the following related to physical characteristics of public housing infrastructure: number of units (size), age of property, number of bedrooms in units, and building type. Older, larger, more bedrooms, and walk-up/garden projects would be more difficult to manage and thus negatively affect performance. Conversely, younger, smaller, fewer bedrooms, and low rise/detached housing would have a positive influence on performance.

Methodology

Research Design

The research design followed the reduced form model developed by Lynn Jr., Heinrich, and Hill (2000). The model used here is written as:

High Performer (O) = $f(E, C, M)$ where

O = PHAS scores

E = Environmental characteristics

C = Client characteristics

M = Management capacity

Data for management capacity were obtained from a survey of housing agencies conducted between August 2009 and January 2010 and included both web-based and mail surveys. The questions in my survey instrument were used by the GPP during its research efforts. The survey consisted of a number of Likert-scale questions, multiple choice, and simple yes and no questions. Overall there were 26 questions in the survey of which 22 were directed at components of the management capacity model. Several of the 22 the questions required more than one answer; in effect, the survey required a total of 53 responses. In order to ensure a reasonable response rate, the survey was limited to 26 questions, which also necessitated leaving out two management subsystems from the model: capital and financial management.

The Department of Housing and Urban Development's web site for housing agencies (listed by state) was the source for some PHAS scores, email addresses, size (number of units), and other information useful in this analysis. Since HUD applies different rules for agencies with 250 or fewer housing units, they were excluded from the study. Data extracted from HUD's web site resulted in a total usable population of 542 such agencies. Of these, 103 responded fully to the survey for a response rate of 19 percent. A comparison of the range for the size and performance score variables indicated

the sample and population shared similar characteristics, lending support that the sample reflected the larger population.

Unit of Analysis

The quantitative focus in this study was on the management capacity model. The model as used in the GPP research assumed the unit of analysis was the government or agency “...where these systems predominantly reside” (Ingraham, et. al, 2003, p. 23). In my study that meant the unit of analysis was the individual housing agency, especially considering the management subsystems of the agency were linked with PHAS outcome measures for that agency. A major advantage of using public housing agencies was that in general all housing agencies perform the same service under virtually the same regulatory framework. Differences in performance may be more easily discovered whether they focus on management variables or client and housing characteristics.

In some ways, the source of data being limited to housing agencies reflects similar issues as with the many published studies of Texas school districts (see Chapter 2) with one major exception. The primary Texas outcome measure was standardized test scores, on which front line school workers, teachers, played a central role; teacher data were included in every test. The management capacity model’s criteria were drawn from support services; hence, the outcome variable used in this study, the PHAS score, was one step removed from those delivering direct services, and no front line worker characteristics were included in this test.

Significance of the Study

The New Public Management assumes better management leads to better organizational performance. The management capacity model I tested with outcome

performance measures of public housing agencies offered limited statistically significant support for this contention. A few HR, IT, and managing for results criteria were significant, but there was little support for integration and alignment except for the existence of a workforce plan in the very high/average model. Only a larger proportion of elderly (occupancy type) was statistically significant among the control variables, but only in the high/low model; that is, a greater proportion of elderly residents was associated with higher PHAS scores. The regression results suggested past performance, unionization, and several budget characteristics explained about 30 percent of the variance in PHAS scores. What explained the other 70 percent of performance was not answered, leaving substantial room to speculate on what else might matter for high performance.

On the other hand, my study presented clear descriptive trends supporting the tested model with survey results showing high performers with better scores on the high performance dimensions of each variable over 76 percent of the time. The differences were simply not large enough in most cases to enable statistical significance to be reached. This suggested that management capacity maybe necessary to some extent but certainly not sufficient to guarantee high performance.

My study was significant for several reasons. First, it was a quantitative analysis of the impact of management capacity on the performance of public agencies, adding to nascent but growing efforts attempting to link management quantitatively to performance of public organizations (Ingraham and Lynn, 2004). At best it offered modest support for the Government Performance Project model, as tested here. It is not entirely clear whether better management, as espoused by advocates of the New Public Management,

leads to better performance. While there were hints as to the potential influence of the model, there remained a larger group of characteristics that did not seem to matter, and the predictive power of the model was quite modest. Additionally, my study highlighted the significant challenge in quantitatively testing linkages between certain behaviors (criteria) and performance outcomes. Such tests are not easy to accomplish.

Second, management elements in this model often form core curricula of schools of public administration, and exploring their impact on performance enriches their importance in academia. Further, these functions are under the control of management and can be altered in ways that should lead to performance improvement. In the words found in *In Search of Excellence*, effective support services should be like “stick[ing] to the knitting” (Peters and Waterman, 1982, p. 292). Third, the study assessed the impact of factors not under the control of management, and found overall these factors did not inhibit managers of public housing from achieving high performance. In other words, high performance is up to public housing managers and staff of both support and direct services. Environmental and client variables did not overall inhibit or enhance performance. It is possible that HUD’s funding formula, which allocated funds on the basis of the environmental and client characteristics tested in my study, mitigated any advantage or disadvantage, leveling the playing field for managers.

Finally, this study was significant because of its implications for linking theory to practice for public managers, housing agency officials, and researchers who focus on public organizations in general and public housing in particular. It suggested a range of possible actions that managers could take in efforts to improve management capacity, and where other factors come into play such as execution--how, in other words, goals and

objectives get translated into concrete actions and behaviors directly related to outcomes of interest.

Overview of Chapters

Chapter II reviews the relevant literature related to management and performance with a special emphasis on recent quantitative studies. The final parts of the chapter review GPP criteria for each model element used in this study. Each criterion provided questions for the survey used in this study.

Chapter III describes the research methodology including descriptions of key characteristics of sampled housing agencies in the study and the population from which the sample was drawn. It also provides details about each variable related to subsystem criteria tested in this study, as well as the statistical tools used to conduct the analysis.

Chapter IV presents the results of the study and includes a descriptive review of each control variable and each element of the subsystems used in this study, quantitative analysis through t-tests, and predictive results of the regression analysis.

Chapter V presents the study's findings and conclusions, discusses their relationship to existing literature, and offers recommendations for future research and practice. On the later point, I suggest public managers need to understand how support systems might be linked to direct services to assist, not inhibit, better performance. Such tools found in the Six Sigma and Lean programs, two mainstays of improving private business operations, offer concepts, tools, and a philosophical approach to managing for better performance with demonstrated success. Some governments have shown great improvement in adopting both frameworks, but substantially more opportunity exists for enhancing government performance with these tools.

CHAPTER II

THE QUEST TO QUANTIFY ORGANIZATIONAL PERFORMANCE

Organizations “are the primary instruments through which modern societies achieve their social, political, and economic objectives” (Tompkins, 2005, p. 1). Achieving objectives or, more broadly, organizational performance, has been a persistent concern of those creating, managing, working in, and studying companies, agencies, firms, and bureaus in the contemporary world. Since the 1900s, good management has been at the center of business and public administration curricula and popular literature, linking it with efficient and effective organizational performance (Chandler, 1977; Collins and Porras, 1997; Goodnow, 1900/2003; Gulick, 1937; Osborn and Gaebler, 1992; Peters and Waterman, 1982; Pfeffer and Sutton, 2006; Simon, 1945; Taylor, 1911/1998; Waldo, 1980).

Even the Founding Fathers addressed the issue of effective administration. During the struggle to create a new government, while the primary focus was on creating a constitution, several Founders addressed the idea of good public management (Rohr, 1986). In *Federalist Paper Number 68*, for example, Hamilton stated: “...the true test of a good government is its aptitude and tendency to produce a good administration” (Rossiter, 1961, p. 414).

The primary focus of Chapter II is on recent evidence related to management’s impact on performance, particularly with current efforts to employ quantitative models of organizational performance, such as those studies related to welfare performance, Texas school districts, and a few studies using the GPP model. It concludes with an explication of the GPP model and its relationship with my study of housing agencies.

The focus on current research does not suggest that the long and distinguished literature on management dating back over 100 years is unimportant. Most of this literature includes personal observations and case studies, many of which have become classics in the field, offering rich insight on management and organizations; however, generally they were not quantitatively grounded (see Lynn, 1996, for an excellent review of this literature). None-the-less, the richness of this literature is felt clearly as an abundant source of propositions for continuing study, including those related to most quantitative assessments of management.

Contemporary Public Management Research

Initial Developments

The strong push on the business side of management combined with the influence of the New Public Management during the 1980s was matched by growing calls for more and different attention to public management as a source of organizational performance. For example, in 1989, Dilulio, Jr., asked: Does management matter? In particular he suggested that the research focus be moved from the individual to the public management variable, “which means defining it, measuring it, and specifying the conditions (if any) under which it matters to the actual quality of citizens’ lives” (p. 127). He used three examples, schools, prisons, and the army, to show how some researchers have discovered more testable and significant management dimensions linked to performance. He cautioned: “to relate management to outcomes and process to performance is no easy task” (p. 131). He advocated a systematic search “(if not ‘scientifically’) for ways to realize public goals by the most appropriate administrative arrangements possible” (p. 131).

As public management grew to rival public administration as a current term associated with running public bureaucracies in the late 1980s, more formal approaches to the study of public management coalesced in September 1991 with the first National Public Management Research Conference held over two days at Syracuse University. With 73 papers presented and a number collected and published in a single volume edited by Barry Bozeman, *Public Management: The State of the Art* (1993), discussion focused closely on theory, history, politics, and practice of public management. Perhaps the conference and subsequent book marked the point at which public management gained more currency than public administration--at the very least in the intellectual realm of those focusing attention on the management variable as a source of organizational performance.

Looking back twenty years on public management research, Stuart Bretschneider (2010) noted the merging of public administration, management and policy programs at a number of universities, the creation of the Public Management Research Conference along with the *Journal of Public Management Research and Theory* (JPART) in 1991, and other smaller changes as the beginning of a steady increase in focus of research and practice on management. He suggested the early 1990s marked the end of the New Public Administration Era and the solidification of the New Public Management Era (pp. 1-6).

In the year following President Clinton's 1992 election, Syracuse University sponsored a conference for those engaged in "research relevant to effective change or senior executives in government who had successfully managed change in their organizations" (Ingraham and Romzek, 1994, p. xiv). With reinventing a part of the Clinton administrative theme, change became the topic of choice for many who wanted to

provide guidance to the administration, including its managers. Ingraham and Romzek's *New Paradigms for Government* (1994) collected a number of papers from the conference.

A couple of chapters in this 1994 book became fairly well known in regard to management and governance. For example, the term "hollow state," Millward's assessment of the impact of contracting out of public services was introduced here (p. 41). Of particular relevance to the GPP effort is James L. Perry's article, "Revitalizing Employee Ties with Public Organizations" (chapter 8). Effective public service depends on dedicated, knowledgeable employees. Retaining these employees is a function of their linkages to their organization, especially in light of the changing context of public service.

A few years later, Rainey and Steinbauer's article (1999), "Gallopings Elephants: Developing Elements of a Theory of Effective Government Organizations," identified a number of propositions about effective organizations. An effective organization is one that "performs well in discharging the administrative and operational functions pursuant to the mission" (p. 13), which resulted in the following testable propositions derived from analysis of a number of case studies: effective agencies will have oversight authorities that are supportive, delegative, and attentive to agency mission accomplishment; agencies will also tend to be more effective when they have favorable public support; more effective agencies also will manage well their relations with allies and partners such as contractors and other public, private, and nonprofit entities; government agencies will be more effective when they have higher levels of autonomy in relation to external stakeholders, but not extremely high levels of autonomy; the higher the mission valence

of the government agency, the more effectively the agency will achieve its performance goals; effective government agencies have a strong organizational culture, effectively linked to mission accomplishment; the more effective the leadership of the agency, the more effective the agency; the more the task design in the agency provides extrinsic and intrinsic rewards to individuals and groups, the more effective the agency; and effective government agencies have high levels of motivation among their members, including high levels of public service motivation, mission motivation, and task motivation (pp. 14-23).

Brewer and Selden (2000) took up the elephant metaphor in a subsequent article reporting on research exploring “a perceptual measure of organizational performance” (p. 689) in 23 of the largest federal agencies. Their model identified five agency-level and individual-level factors that impacted organizational performance. The agency level factors were: culture, human capital and capacity, agency support for the National Performance Review, leadership and supervision, and red tape. The individual factors were: structure of task/work, task motivation, public service motivation, and individual performance (p. 690). Dependent and independent variables were created from a survey of federal employees (over 9,000 responses). They ran an OLS regression which showed that almost all of the items were statistically significant and positively related to their definition of organizational performance with the exception of maintaining adequate human capital and training. Organizational culture had the most impact (on the basis of standardized coefficients). Building human capital and retaining high performing human capital were also strong predictors. All individual factors were positive and statistically significant (p. 703). The authors noted some limitations. First, there were no objective

measures of performance tested. Second, the survey questions were not designed to test for organizational performance, and, third, “there is the potential for simultaneity between some of the independent variables and organizational performance” (p. 707).

In 1999 a more formal model was proposed by O’Toole and Meier. They suggested modeling public management’s impact on performance to facilitate quantitative, non-linear relationships, including endogenous variables such as structure-- networks versus hierarchy (pp. 505-507). In simple terms, there model included the following terms: Output (current performance is dependent on past performance); Stability (from highly stable—hierarchy—to unstable—networks); Shocks that affect stability; Buffers (some mechanism to deal with shocks); and Management—which can be modeled in a linear or non-linear manner; it can also interact with structure, system maintenance and environment.

Although the O’Toole/Meier model was first formally proposed in 1999, there had been few quantitative studies done prior to this time, but the pace of such studies accelerated over the next decade. One of the primary sources of quantitative assessment of organizational performance was social service program data, following the substantial changes made in welfare laws during the Clinton administration. The next section examines quantitative welfare as well as job training studies.

Welfare and Job Training

A number of welfare and job training studies addressed organizational and individual performance (the results of organizational intervention); six are summarized in Table 2 and described next.

Table 2

Welfare and Job Training Studies

Author(s)/Date	Key Concept Tested	Results
Jennings and Ewalt, 1998	Consolidation and coordination	<ul style="list-style-type: none"> • Strong support for consolidation • Partial support for coordination • Weak predictive power
Heinrich, 2002	Experimental and administrative performance and management capacity	<ul style="list-style-type: none"> • Both provided useful data to provide guidance to managers
Daley and Vasu, 2004	Population, percent of minority staff and supervisory experience	<ul style="list-style-type: none"> • No support for management • Some support for control variables
Riccucci, Meyers, Lurie, and Seop, 2004	Goal congruence	<ul style="list-style-type: none"> • Limited support for goal congruence • Mixed support for management
Ewalt and Jennings, Jr., 2004	State welfare case loads	<ul style="list-style-type: none"> • Policy design significant • A number of demographic variables not significant • Administrative and management significant
Ratcliffe, Nightingale, Smith and Sharkey, 2007	Adjusted performance measures	<ul style="list-style-type: none"> • Useful in understanding and accounting for demographic differences • Importance of disaggregated data analysis

Jennings and Ewalt's (1998) test of the effect of consolidation and coordination on multiple and sometimes competing outcome measures related to job training and employment showed that consolidation impacted performance on six of ten outcome

measures, but coordination was limited to three out of ten. The highest adjusted R^2 square was .29 for welfare average weekly earnings. Other R^2 results were more modest, ranging from .12 to .19; the low R^2 suggested that much of the variance in results remained unexplained by either coordination or consolidation. According to Henrich (2002), this is not an unusual finding in this policy arena (p. 720).

Henrich's (2002) study answered the question whether experimental and administrative data were sufficiently similar so that the easier and more timely to obtain administrative data could be used by program managers for decision making. She concluded that "imperfect data can still generate information that might effectively guide program managers in improving agency performance" (p. 721).

Daley and Vasu (2004) conducted a quantitative assessment of the impact of three state-level management dimensions (resources, leadership, and accountability) related to local welfare office outputs and found no statistically significant relationships. Environmental variables, on the other hand, appeared to matter more. For example, population "seemed to affect the odds of a county achieving an A grade...on more than one measure" (p. 140). While the relationship was small, larger counties had more difficulty in reaching higher scores on reducing welfare rolls and keeping recipients from returning, but larger counties were better at collecting child support (p. 31). A higher proportion of minority staff was linked positively to reducing the odds of staying off welfare, and supervisory experience increased the odds of collecting child support by five times (p. 41).

With goal orientation as the dependent variable, Riccucci, Meyers, Lurie, and Seop (2004) tested the impact of three management measures on performance:

management practices, which consisted of training, performance monitoring, and time resources for staff; leadership, represented by general and specific communication about policy goals; and personnel decisions, including education and tenure of staff. They controlled for agency structure (location within welfare or workforce offices).

The results indicated, first, that agency location was a major influence over goal priorities. As one might expect, those working in welfare offices still focused mainly on eligibility issues while those in workforce offices reported stronger ties to employment goals. On the management side, they found that training on employment tasks, monitoring of eligibility, and employment tasks and percent of time in direct contact with clients were positively and significantly related to employment and behavior modification goals. There were no statistically significant relationships between eligibility determination and any of the three independent variables (management, leadership, personnel). In fact on the personnel dimension, there were also no statistically significant relationships with any of the three goals (p. 444-445).

Ewalt and Jennings (2004) conducted a welfare study following the model proposed by Lynn, Heinrich and Hill (2000). The model included environmental, various client treatment, administrative structure, management roles and activities, and client characteristic variables. Policy design (client treatment regarding policy tools) was positively linked to a reduction in welfare rolls with the exception of culture change. States with better benefits and those with more clients in unsubsidized employment showed lower caseload reductions. A lower unemployment rate was also associated with a drop in welfare rolls (p. 457). Somewhat surprisingly most control variables showed no statistically significant relationships with reduction in welfare rolls, including race, teen

recipients, higher rates of out-of-wedlock births, prior experience in welfare reform, location of implementation (state or county), past caseload size or caseload reduction. The authors concluded: “We believe that in our reduced-form model, these measures are dominated by the direct implementation measures” (p. 457).

An interesting companion to the Jennings/Ewalt 1998 study was one completed by Ratcliff, Nightingale, and Sharkey (2007). They examined data at the county (not state) level and adjusted for external factors such as caseload characteristics and economic conditions. They then created a performance index for each county, allowing for statewide comparative analysis. They used the following outcome indicators consistent with many welfare studies: employment rate, employment entry rate, employment retention rate, earnings gain rate, and earned income closure rate. These measures assessed different program aspects and did not necessarily change in tandem, and some showed inverse relationships (p. 73). They also included a number of human capital theory characteristics as explanatory variables; these were age, gender, race, educational attainment, marital status, number of children, and age of children.

The results showed that counties that did well on one measure generally did well on other measures, but few counties performed well across all outcome measures (p. 81). Of the 46 counties in the study, only one performed well on all five measures; two performed well on four of the five measures and 12 performed well on three out of five measures. There was no discernable pattern among the various client and economic characteristics. Since the Ratcliff, et al., study (2007) did not examine any administrative factors among counties, no conclusions could be drawn on the basis of management capacity. It did suggest that performance varies at the sub-state level for this particular

state program, and perhaps aggregate state-to-state comparisons may mask lower level findings. The next section reviews a number of quantitative studies done at the sub-state level linking management and other variables to student educational performance.

Texas School District Studies

Beginning about a decade ago, a group of public management researchers mined Texas school system data to test a number of management concepts concerning organizational performance. These data included several different outcome performance measures, student and teacher characteristics, and other data generally fitting the O'Toole/Meier quantitative model. For the most part, these studies used much of the same data, especially for control variables, with greater variety in management variables. In most, but not all, cases, the performance outcome related to various standardized test results, the most ubiquitous being student scores on the Texas Assessment of Academic Skills (TAAS), with other tests, such as the SAT or ACT supplementing the TAAS. With the abundance of commonality among these studies, it should not be surprising that results were often similar. This similarity is reinforced because of the nature of the business under scrutiny. The education production function has been extensively studied, and so in many cases it should not be surprising to see support for previously-tested variables related to student performance; however, two special qualities of these studies were their quantitative examination of multiple dimensions of management and their consistent support for the notion that management matters.

These studies are summarized in Table 3 in chronological order. Studies are identified by authors, dates of publication, key concepts measured, and outcome measure employed. For the most part, each study followed a similar format using several

categories of variables (controls) that might have some influence on organizational performance in addition to the variables (management) of specific interest in each study. These control categories were: environment, financial, policy, and teachers.

These control variables will be discussed first, followed by studies falling under several key management concepts such as bureaucracy and networking—two of the dominant subjects of interest.

Environmental Variables

Environmental variables, also described as task difficulty variables, dealt with race and poverty (Gill and Meier, 2001). The studies used percent low-income, percent Black, and percent Latino students for race and poverty. According to Gill and Meier, the educational literature assumed that higher values for these variables would be negatively associated with organizational performance. These assumptions were borne out by these studies. Out of the 18 that used these variables in their models, 13 (72 percent) showed statistically significant and negative relationships for all three with others showing support for one or two of them. Clearly, greater task difficulty variables (race and poverty) were associated with lower organizational performance.

Financial Variables

The educational literature suggested school funding may have an influence on student performance with higher spending associated with higher performance. Sixteen of these studies included some or all of the following financial variables: instructional funds per student, teacher salaries, and percentage of state aid related to the overall budget. It was postulated that higher values for these variables would be associated with better performance results.

Table 3

Texas School Studies

Author(s)/Date	Key Concept Tested ⁺	Outcome Variable ⁺⁺
Gill and Meier, 2001	SWAT	TAAS*
Bhote, 2001	Bureaucracy	TAAS/SAT
Meier and O'Toole, Jr., 2002	Management quality	TAAS
Meier and Bohte, 2003	Span of control	TAAS
O'Toole, Jr. and Meier, 2003	Personnel stability	TAAS
Meier and O'Toole, Jr., 2003	Networking	TAAS
O'Toole, Jr. and Meier, 2004a	Contracting	TAAS
O'Toole, Jr., and Meier, 2004b	Politics and networking	TAAS/SAT/ ACT/1100+ on SAT
O'Toole, Jr. and Meier, 2004c	Intergovernmental/fiscal	TAAS/SAT/ ACT/1100+ on SAT
Smith and Larimer, 2004	Bureaucracy	TAAS, attendance, dropout rates
Nicholson-Crotty and Nicholson-Crotty, 2004	Interest group influence	TAAS ACT/SAT
Juenke, 2005	Management tenure	TAAS
Fernandez, 2005	Leadership	TAAS
Pitts, 2005	Diversity	TAAS/1100+ on SAT/dropout rate
Hill, 2005	Managerial succession	TAAS
Goerdel, 2006	Proactive management	TAAS

Table 3

Texas School Studies, Continued

Author(s)/Date	Key Concept Tested ⁺	Outcome Variable ⁺⁺
Meier, O'Toole, Jr. and Goerdal, 2006	Gender	TAAS
Nicholson-Crotty, Theobald and Nicholson-Crotty, 2006	Drop outs	Dropout rates
Meier, and O'Toole, Jr., 2006	Politics vs. bureaucracy	TAAS, ACT, others
Meier, O'Toole, Jr., Boyne, and Walker, 2006	Strategic actors	TAAS
Meier and Hicklin, 2007	Turnover	TAAS, ACT

⁺This column lists the primary independent variable of interest in the articles.

⁺⁺ This column shows the primary outcome measure used; additionally, a number of studies employed several other outcome variables.

*TAAS = Texas Assessment of Academic Skills

Evidence showed little support one way or the other for instructional funding. In most studies results were not significant, although in three studies (Bhote, 2001; Hill, 2005; Meier, O'Toole, Boyne, and Walker, 2006), this variable was positive and significant. Similar results were found for percent of state aid. The teacher salary variable, on the other hand, was positive and significant in 14 out of 17 studies (82 percent), lending strong support the idea that higher pay for teachers is linked with better performance.

Policy Variables

Policy variables included attendance, gifted classes, and class size. Only three studies included gifted classes in their model, but all three were significant and positively related to better performance. Class size was one of the more consistent predictors of

performance with 13 out of 15 studies (87 percent) showing significant and negative relationships, thus, the larger the number of students in classrooms, the lower the performance. Since attendance was only measured in a few studies as an independent variable, results cannot be broadly generalized.

Teacher Variables

Teacher variables were percent non-certified and years of experience. In nine of sixteen cases (56 percent), the percent non-certified teacher variable was significant and negative, as expected. There were mixed results for teacher experience. In the fourteen studies that used teacher experience, four were positive and significant and three negative and significant with the remaining seven non-significant. The only clear conclusion related to teacher variables was that the greater percentage of non-certified teachers was associated with poorer performance. There was not much discussion on why teacher experience was not significant, but perhaps the financial variable on pay indirectly assessed this with higher paid teachers (likely more experienced) being positive and statistically significant in most of the studies.

In sum, the control variables clearly showed that high performance, as measured by standardized test results, were associated with the following characteristics: lower poverty levels among students, fewer minorities, higher teacher salaries, more certified teachers, and smaller class size. Of course, having the opposite characteristics in a school system would inhibit performance at least as far as test scores were concerned.

Management Outcomes

Gill and Meier (2001) initiated the use of Texas school district data to explore organizational performance. In their first study, however, they were exploring a technique

that combined quantitative and qualitative techniques that allowed for a more insightful examination of super high performing schools compared to just high performers as well as average performers; their methodology was substantially weighted analytical techniques or SWAT. Their measure of performance was scores for an annual state standardized test, the Texas Assessment of Academic Skills (TAAS). The Gill and Meier (2001) study set the baseline for the subsequent studies exploring a variety of management concepts using Texas school data

The basic regression using the four categories of variables just described predicted 58 percent of the pass rate for the TAAS without considering past performance or any management variables. All three coefficients for environmental variables were negative and significant, as predicted. The only financial variable that achieved significance in the predicted direction (positive for performance) was teacher salaries. All three policy variables were significant as well, with attendance and gifted classes being positive and class size negative regarding test scores. Surprisingly, neither experience nor certification variables were significant.

A number of studies tested the impact of bureaucracy on student performance with interesting results. Bhote's (2001) measure of bureaucracy included the percentage of central administrators to all full-time district employees and the percentage of campus administrators (school principals, assistant principals) to all full-time district employees; he also tested for the impact of teachers on performance by using the percentage of teachers as a fraction of all full-time district employees. The two bureaucratic variables were negative and statistically significant, meaning larger bureaucracies were associated with lower TASS scores. The teacher variable was significant and positive, underscoring

the importance of direct service providers for performance. The model explained 72 percent of the variation in TAAS scores but only 20 percent of the difference in SAT scores. The central findings supported the concept that a larger bureaucracy was negatively associated with school performance, at least as far as this study was constructed.

Harking back to the classic era in public administration, Meier and Bohte (2003) tested one of the classic proverbs of public management: span of control. They identified two levels of span of control. The first was first-line supervision as measured by the ratio of teachers to administrators in the school district. The second ratio of number of school level administrators to the number of central office administrators reflected the mid-level management span of control variable (p. 64). They tested three independent variables, which they postulated would be related to span of control: diversity (task, production, and role), size (staff and location—number of buildings) and instability (teacher turnover, enrollment change, and teacher experience).

Characteristics associated with a broader span of control included the following: production diversity (more specialized classes, more independence for teachers), larger schools (number of students), and more experienced teachers. Characteristics related to smaller span of control included: more task and role diversity and higher teacher turnover.

At the mid-management level, role diversity, and enrollment change were related to smaller spans of control, while task and production diversity and size reflected larger spans of control. With these data in hand, they tested span of control's relationship to organizational performance. They found that in general, larger spans of control were

associated with higher performance. This was also consistent with Bhote's (2001) study. They concluded the following: wide spans of control are the general rule for reasons of efficiency—fewer supervisors reduces overall personnel costs; when diversity is prevalent in production and task level employees, a narrow span of control is recommended; and when role diversity throughout the organization is high, middle management spans of control should be narrow.

O'Toole and Meier (2003) tested a model of performance on the basis of stability of front line workers and top management along with two management variables, networking and quality. Turnover rate among teachers was one measure of stability. The authors' evidence supported the notion that stability in personnel, a long admired characteristic in bureaucracies, had a positive effect on student performance, at least as measured by the overall pass rate of students on a standardized test administered in Texas.

Smith and Larime (2004) focus on bureaucracy suggested that performance depended on which output (performance variable) was most important. In their model, they used percent passing the TAAS exams, average daily attendance, and dropout rate as measures of performance. The regression results showed that larger bureaucracies were associated with lower pass rates on the TAAS, as Bhote (2001) found, but they were significant and positive for higher attendance and lower dropout rates. They concluded that their analysis "suggests that districts with larger campus-level bureaucracies have trivially lower test scores but substantively lower dropout rates" (p. 734). Thus, with multiple goals, the challenge in assessing the impact of variables of interest depends on

the outcome of interest; or the worth of bureaucracy depends on what is valued as an outcome.

Meier and O'Toole (2006) showed that higher performance was more closely associated with bureaucratic rather than political characteristics. Their study focused specifically on representative democracy and Latino education, using percent of school board members and teachers who were Hispanic as surrogates for values held in common and a number of outcome measures related to various test scores. Their first test replicated the more typical political control study with the percent of Latino school board members being statistically significant and positive for eight of the nine performance variables. Only passing AP exams was negative and significant. Thus, these data showed "evidence that political principals had made the bureaucracy act in a way that it would not have done in the absence of oversight" (p. 184). On the other hand, when the percent of Latino teachers was added to the regression, the results changed. Political control coefficients dropped from eight of nine positive and significant to three, while Latino teachers showed nine positive and statistically significant influences on student performance with larger t-scores for every measure. Overall, their tests cast some doubt on previous political control empirical studies that do not include measures related to bureaucracy. They suggested that researchers must "bring the bureaucracy back into the study of bureaucratic control" (p. 187).

Meier and Hicklin (2007) revisited the relationship of teacher turnover to performance of students. This is similar to the O'Toole/Meier 2003 study. The commonly accepted notion that the relationship between turnover and performance is U-shaped was

also tested. They examined the idea that task difficulty may be the determining factor in whether or not the relationship was linear or U-shaped.

The results showed, first, “that turnover is negatively and linearly related to overall student performance on the TAAS” (p. 581). For college bound students, the results show both linear and non-linear effects as turnover increased, suggesting that low levels of turnover hurt performance, but as turnover increased to a point (as it turns out just above the average turnover rate for the overall data), performance improved but then deteriorated as turnover increased (p. 582). For longer periods, turnover continued to impact performance negatively for TAAS scores with little impact on SAT/ACT scores. At lower grade levels (using different test scores for the elementary and middle school students) turnover had an even stronger negative impact (p. 585). They concluded, first, not all turnover is bad. Second, turnover needs to be managed to ensure fewer negative and more positive effects. Third, recruitment and retention can play a critical role in determining how turnover is managed (pp. 585-586).

Meier and O’Toole (2002) expanded their performance model by creating a managerial quality variable on the basis of a complex calculation of superintendents’ salaries and other factors. In effect, they equated higher salaries with better quality management and hence better performance. Using task difficulty, resource, and teacher variables as controls, the regression confirmed that the management quality variable contributed about five points to TAAS scores with an R^2 of .59. Of course, their initial study (2001) which included only control variables achieved an R^2 of .58, but a contribution of five points for just the top manager in school districts is an important

finding. The new salary-based quality variable found its way into several other Texas school studies.

Several studies included networking as a variable of primary interest. Meier and O'Toole (2003) defined networking as how often superintendents interacted with five actors—school board members, local business leaders, other school superintendants, state legislators, and the Texas Education Agency. They surveyed the superintendants with a six-point scale from daily to no contact (p. 692). The first test showed that networking made a contribution to student performance, not the most significant, but still a factor. Linked with past performance and other independent variables, the model predicted 81 percent of the variation in test scores, a very high result. The higher R^2 suggests the powerful impact past performance has on current and probably future performance. The study included five years of past performance history. Further it suggested, as did the Ratcliffe, et al., study (2007) that success breeds success.

Then, they tested non-linear impacts by separating data into quintiles and examined differences among high and low performing schools. The highest and lowest quintiles had much higher networking scores than the three middle range quintiles. They suggested that superintendents at opposite ends of the performance spectrum engage in more networking because they are “more interested in optimizing rather than satisficing (or one seeking to change its level of performance dramatically)...” (p. 695).

The political dimensions of networking, particularly the potential for managers to “respond to the stronger and more politically powerful elements of their surroundings, thus magnifying the tendency toward inequality already present in the social setting” was tested by O'Toole and Meier (2004b, p. 681). They labeled this the dark side of public

management. In a political sense, networks can be used to distance some actors from controversial issues (p. 693), to shift goals to favored parties (p. 684), and to co-opt the production of public goods again towards a favored group (pp. 684-685). The authors tested the third point with the working hypothesis “that managers who expend greater effort in working the network will improve educational performance more for goals that benefit their relatively advantaged clientele...” (p. 685).

Their hypothesis suggested that higher networking scores (associated with higher socio-economic characteristics) would be positively correlated with ACT and SAT scores and the percentage of students who exceeded 1100 or its equivalent on these two tests. Conversely, they did not expect positive correlations with the performance of disadvantaged students, low income, and attendance and dropout rates (p. 687). They ran a number of regressions to test their hypotheses. First, for the TAAS, their hypothesis was confirmed. Higher networking scores were significant and positive for pass rates. Then, they tested networking impact on test scores for disadvantaged students and found no statistically significant impacts other than for dropout rates, which, as a result of the potential for bad data collection, was discounted (p. 688). For the ACT, SAT, and 1100 score (testing for advantaged students and networking), all were positive and significant.

In testing the five network nodes relationship with advantaged student indicators, the results were positive and significant for the Texas standardized test for all nodes, but on Anglo tests, contact with school boards was negative and significant. The other nodes were significant and positive. For disadvantaged students, the results of the regression for the five nodes generally supported the original hypothesis. The business node relationships were negative and significant for blacks, TAAS, poor, attendance and

dropout rates. Contact with other superintendents was positive for all cases except dropouts. There were no statistically significant relationships between school board contact and any of the disadvantaged-student indicators (p. 689). The key point for network management and performance was that networks influenced distribution of services as a result of political interaction, and it appeared that typically and historically the distributional effects were skewed to the advantaged (p. 690).

O'Toole and Meier (2004c) tested another networking concept using intergovernmental fiscal dimensions represented by two variables. The first was a measure of state aid with those receiving 58 percent or more designated as highly dependent, and the second diversity of funding (the variety of funding sources). State aid was a structural networking measure and diversity of funding was related to "more uncertain network environments" (p. 477).

The results showed that the four management variables (all four were tested in previous work) --networking, superintendent quality, employee stability, and management stability--"certainly improve educational systems' performance" (p. 485), with most of the regression's explained variance reasonably high. Non-linearity was also present, supporting the thesis that "management interacts with intergovernmental structures to generate nonlinear relationships. For example, behavioral networking and personnel stability were more important for performance in districts with higher levels of state aid" (p. 487), and management quality was more influential in districts with less fiscal dependence on the intergovernmental network (p. 488).

Juenke (2005) examined the impact of new and established managers and their networks' impact on performance. It goes beyond frequency of contact on network nodes

already explored by O'Toole and Meier (2003) to include time in the system and management tenure (p. 115). New managers have to deal with the "newcomer" situation. Experienced managers contribute to network stability and to trust building (pp. 117-118). The theory that long standing networks lose their flexibility and effectiveness was also examined.

The outcome measure was the pass rate on the TAAS. Management quality was defined by salaries; networking scores were developed through surveys. Tenure was time in the district as superintendent and time spent by the superintendent in the district in any capacity. Exempt was a new measure introduced in the Texas data set: percent of students exempted from taking the TAAS. In effect, this was a measure of cheating, removing potentially low scoring students from taking the test to improve the overall district test average (pp. 121-122).

The first test, not surprisingly, supported the O'Toole/Meier original test of the model. The second test was for time in district and management tenure along with quality and the other environmental variables. The results for this indicated a statistically positive relationship between time in the district for the pass rate and enhancing the networking variable. No relationship was found for management tenure. Another finding was that more experienced and higher quality managers worked the network less than younger, less experienced managers (p. 124). Juenke noted: "it is the quality of contact, not necessarily the frequency, that makes a difference of more tenured superintendents in their networks" (p. 124). On the cheating test, the variables of interest overall were not significant, suggesting that "cheating" takes place at lower levels in the organization

(principals and teachers) (p. 125). So superintendents with long tenure were not associated with gaming test scores.

Then, he divided the data set into three parts for tenure, two years or less, more than two years but less than seven, and seven or more years, and reran the regressions. He found that in the first cohort, networking and quality management had no measurable impact, although environmental variables had some. Only time in district was statistically significant and positive for the first group. For the middle group, network management and percent of students' exempt (cheating) were significant and positive. For the most senior group, networking, management quality, and time in district were statistically significant and positive; there was no measurable relationship with the cheating variable.

He concluded that networking had strong and independent effects on test outcomes; time in network, management tenure, and management quality led to increased effectiveness of networking; management quality and time in network had independent and positive relationships with test performance. "Networking and tenure *interact* to weight the amount of leverage a manager has on her or his environment" (p. 128). In other words, a manager's overall effectiveness increased with time in service and higher quality interactions with network members. According to Juenke, two surprising results were: longer term managers did not reap benefits of cheating to improve test scores, and the split samples suggested that "top-level management tenure serves as an indicator of network development" (p. 129).

Another article used various data from the Texas school system along with survey results to test an integrative model of leadership. Fernandez (2005) tested seven hypotheses, using TAAS scores as the outcome variable. His study also used many of the

networking variables already discussed but re-conceptualized in terms of leadership. He found positive statistically significant support linking better performance and the following: managing the external environment, level of community political support, and a leadership style giving discretion when high task difficulty was present. He found statistically significant and negative relationships between performance and the following: a leadership style that promotes change in the short run and task difficulty. He found no support for time spent managing internal activities or level of support from the school board.

Goerdel (2006) examined proactive and reactive management of networks and organizational performance. The theoretical basis was that network capital—activities such as exchange, communication, coordination, and control--the PODSCORB of networking (p. 361)—provided opportunities to improve network performance (p. 353). Such activity reduces uncertainty, maximizes “program benefits and minimize future losses,” and enhances their ability to control the agenda (p. 353).

Goerdels’ first test without past performance showed statistically positive relationship between performance (TAAS scores) and proactive management, but no influence for reactive management (p. 362). The proactive relationship held up when past performance was included in the model with the reactive management variable remaining insignificant (p. 362). When examining other performance measures, proactive management was statistically significant and positive for attendance rates, low-income TAAS pass rate, and Latino pass rate (p. 363). Reactive management remained neutral.

O’Toole and Meier (2004a) addressed two questions regarding contracting: Does contracting free up educational resources and improve performance? What explains the

extent of contracting in Texas school districts? Their measure for contracting was the percent of its budget spent on contracting. For the first question, the results showed statistically significant findings that more contracting was associated with less educational funding and lower performance when controlling for task difficulty and resources in schools with more than 1,000 students (R^2 of .61). As to the second question, the authors concluded that larger central office bureaucracies and more contracting had reciprocal relationships, hence the reference to one of Parkinson's classic laws that work expands to fill the time allowed for its completion "so it may be that bureaucrats trigger... a need for still more staff to deal with it" (p. 350).

David Pitts (2005) studied the influence of diversity and representation on performance using Texas school district data. His results for TAAS and dropout rates showed that teacher diversity was positive and significant, while managerial diversity was not significantly related to either measure. For SAT scores, teacher diversity was negative and significant, but managerial diversity remained insignificant. When testing for representation, he found that management representation was significant but negative for dropout rate and significant and positive for TAAS and SAT. The teacher variable was not significant for any of the three performance variables. Of importance, this result shows that the two variables "are two separate concepts that can have wholly different impacts on performance" (p. 623).

Hill's (2005) test of Texas school system data evaluated managerial succession and change in performance of TAAS scores. The theoretical basis for succession and performance suggested that three factors influence performance: motives of managers, means at their disposal, and opportunities available (p. 586). Hill added short- and long-

term performance to this model. He used networking as his substitute for means, where a successful manager “may be able to reduce their transaction costs by acting in conjunction with other units” (p. 589), thus increasing resources at the disposal of the manager. Opportunities were defined to a large extent as constraints and how the new manager dealt with them, in a sense creating new opportunities. Here constraints included percent minority students, percent low-income, and percent of non-certified teachers (p. 590).

His five hypotheses were: a change in management will have a negative effect on performance; the negative effect of succession is greater if the new manager is external; the negative effect of succession is mitigated by the experience of the replacement manager; the further an organization gets from the succession event, the greater likelihood that the organization’s performance will become more positive; and new managers who network more are likely to improve performance (pp. 589-590).

The results were mixed. For example, the managerial change variable, while negative, was insignificant in all models; however, the external hire variable was negative and significant in every test (p. 595). In the long run, districts that changed superintendents had a greater increase in TAAS scores than those that had no change in top management. Thus, managerial change matters over time; so the key lesson for those looking to change as a lever for improving organizational performance is patience (p. 596).

Meier, O’Toole, and Goerdal (2006) examined gender and management performance. The authors tested several hypotheses. First, after controlling for resources and constraints, females managing upward toward political principals would produce

more positive performance results than males. Second, women's downward management toward line managers would not have more positive performance impacts than males. Third, women managing outward toward network actors will have lower performance than males.

Their first test for the three management directions and gender showed only one difference: male managers interacted more with principals than female managers. In several regression equations, other differences were found, including the following: greater male interaction with school boards was negatively associated with performance, while more female contact with school boards showed better performance; male contact with principals did not have any statistically significant affect on performance, but female contact with principals was associated with poorer performance; there were no differences between men and women on measures related to college bound students; and for black and low-income test scores, women managers showed higher performance.

They concluded from this review that stark differences between men and women were not there, but since some differences between men and women managers were found in performance outcomes, they noted that "gender questions should have a prominent place in research on public management and government performance" (p. 4).

Nicholson-Crotty, Theobald, and Nicholson-Crotty (2006) used regression analysis to measure the results of different definitions of dropout rates in the schools and found substantially different results depending on the definition used. The conclusion was two-fold. First, multiple performance measures were more complex to understand than researchers and users generally acknowledged, and without a better understanding of how they were used may lead to substandard prescriptive advice. Second, definitions of

measures purportedly addressing the same issue should be the same. With different definitions of dropout activity in state and federal systems, researchers and practitioners found different outcome results, with the same school district being rated highly on one definition and much lower on another definition (p. 110).

Meier, O'Toole, Boyne, and Walker (2006) tested how strategic actors (strategy content) affected organizational performance. Strategic content is comes from Miles and Snow (1978) who identified four ideal types of organizations actors: prospectors, who continually search for market opportunities; defenders, who are more conservative on new opportunities and compete on the basis of price and quality not innovation; analyzers, who are quick to adapt to new opportunities (after analyzing the market); and reactors, where there is little or no strategy on dealing with the changing environment (pp. 358-359). They incorporated variables related to management strategy into the O'Toole/Meier model, with data coming from surveys of superintendents. Other data, as usual, came from the Texas Education Agency. For example, for the defender variable, they asked superintendents to rate their priority on five tasks: improving TAAS scores, focusing on college-bound students, emphasizing vocational education, improving bilingual education, and supporting extracurricular activities. Then, they asked them to rate seven factors in terms of their influence on decisions such as efficiency and combined the results of these two items into a defender variable (pp. 364-365). Reactors were measured by their ranking of seven factors affecting policy with scores on TAAS being the measure used for this activity (pp. 364). Prospectors were determined by creating an index on the basis of the number of times a superintendent initiated contact with one of seven key actors with the superintendent's support of change (pp. 364). Also

included in the model were networking, quality, managing upward, and stability with the usual performance outcomes and control variables.

They found, first, that the defender management strategy to be the only one statistically significant and positive for the TAAS performance variable (p. 370). They concluded that with such high stakes for the TAAS passing rate, “focusing efficiently on core tasks can be a rational strategy” (p. 371). Other management variables were positive and significant as well. When examining pass rates for Blacks, Latinos, whites, and low-income, the defender strategy results were significant and positive for whites and low-income students. Prospecting showed no positive influence on any of the subgroups, but was negative for Blacks (p. 371). For college bound students, reactors and prospectors were positive and significant, but defenders had no impact (p. 372). The strategy content variables had no impact on attendance and dropout rates.

Overall, the results of the study showed strong support that management matters in school performance and that strategies “are also relevant to public organizational performance” (p. 373); however, they also noted that management “is not some simple, undifferentiated, easy-to-capture notion” (p. 373), and their study only examined management at the top level; other management areas, such as internal management and direct service delivery, need examination as well. The present study is directed at internal management.

Using Texas data, Nicholson-Crotty and Nicholson-Crotty (2004) asked the following question: “under what conditions should we expect interest group influence to be greater or lesser” (p. 571)? Their study was not about organizational performance per se, but rather interest group power to influence management behavior. Their hypothesis

suggested interest group influence would be greater with greater access to the managerial decision-maker and when the decision-maker views the group as more powerful than other actors” (p. 572). The dependent variable came from a survey of superintendents who were asked about “their primary goal for improving the district” (p. 577). They rank ordered the following six choices: college preparation, performance on state standardized exam, bilingual education, athletics, vocational education, and extracurricular activities.

Independent variables included the following: percent of parents within a district with a college education or above (positively correlated with a focus on college prep). frequency of interaction with parent groups (not directly related to the dependent variable, but to moderate the influence of parent groups); and managers’ perception of power of the parent group to other groups (pedagogical expertise, responsiveness to parent demands, school board, Texas Education Agency, lowering costs, increasing efficiency, maintaining equivalency with other districts, teacher association (pp. 577-578).

Their control variables, which they suggested would be negatively correlated with the dependent variable, were: percent of students who receive an 1100 or better on college entrance exam (a need for managerial focus), percent of students classified as English language learner, and percent of students who pass all parts of the TAAS. Two environmental variables included an index of dissimilarity, a measure of heterogeneity of the student body and total enrollment, with a more heterogeneous and smaller student population allowing a clearer focus on a single higher order goal.

They found limited support for educated parents’ influence on superintendents’ focus on college prep. They also found support for enrollment as a mitigating factor, the

larger the school, the less the focus on college prep on the basis of educated parents. Pass rates on the TAAS were also positive and significant. In the interactive test of access and power, the results were somewhat different, with educated parents no longer significant; however, the combination of educated parents and access and educated parents and power were both positive and significant. These two findings suggested that for interest groups to be influential in a superintendent's priorities, they needed either access or power or both to be successful (p. 581).

The Texas studies demonstrated that management in many guises can be operationalized and tested quantitatively for its impact on performance, that environmental and client characteristics can be used as controls, and finally, that the O'Toole/Meier management and governance models are useful constructs for thinking about and testing organizational performance. Yet, for the most part, few of these education-based studies provided tactical advice for public managers. In many of the studies, significant results of management variables depend on situations not necessarily under clear control of management or perhaps not as clear before or during management decision-making activity as they seemed retrospectively. Further, there may have been some simultaneity between outcome measures and several independent variables. For example, lower turnover was associated with higher performance, but it is possible that teachers in high performing schools chose not to leave because of the quality of students as compared to teachers in lower performing schools who may be more likely to leave to do the greater challenges associated with lower performing students. Perhaps the limited prescriptive advice for public managers is more a result of the educational context of

these studies. In the next section I review several studies that used similar quantitative models but with data from sources other than Texas school districts.

Other Quantitative Studies

Nicholson-Crotty and O'Toole (2004) tested the O'Toole-Meier management model with police agencies, the first such non-educational examination of the model (p. 2). They used data from 570 police departments, census data, and surveys by the FBI and the Office of Justice Programs (pp. 8-9). The outcome measure was percentage of index crimes cleared by arrest. Management variables focused on internal activities such as the presence of educational requirements for officers, extent of classroom training and field training for new recruits, the presence of a collective bargaining policy for officers, use of technology to access criminal histories, arrest records, crime analysis tools in the field, and comprehensiveness of written directives (p. 9). Factor scores were used as the measure of internal management as well as for external variables such as training of citizens, neighborhood specific patrols, problem solving activities, and various networking activities.

Other variables that may have affected clearance rates included crime rates, factor analyzed extra duties (such as animal control, dispatch, and so on), new staff (difference in staffing levels between 1999 and 1997 divided by the population change between those two years), percent minority in population, total population, and population density. Statistically significant and positive findings were found for prior performance (again) and internal and external management. Statistically significant and negative findings were found for crime rates and population density (pp. 12-13). Overall the model

explained 67 percent of the variance in clearance rates with prior performance being the dominant predictor.

While this was the first test of the O'Toole/Meier management model outside education, it was also the first to feature specific internal management activities under the control of management, and the significant and positive findings linking these activities to better clearance rates suggests perhaps the first specific tactical (prescriptive) advice to practitioners, certainly outside the educational arena.

Brewer (2005) used survey data of a variety of federal employees, particularly front-line supervisors and non-supervisory personnel and tested a model predicting their impact on performance. He found that in general supervisors were more optimistic and positive on job-related attitudes, issues, agency performance, and assessment of their own supervisors (pp. 514-515). With regression, he found management variables overall to be strongly related to performance. Not surprisingly, his results confirmed that "high-performing agencies tend to have skillful upper-level managers, strong cultures that value employees and emphasize the importance and meaningfulness of the agency's work, and policies that empower those employees" (p. 519).

On a different note, Kerlin (2001) suggested big questions of public administration should focus on "service to society at large...not focus on instrumental questions, but on the consequences and value for the larger society in which public administration is embedded" (p. 140). Further, he stated "that focusing solely on the organizational level of analysis and action easily becomes antidemocratic" (p. 141). More specifically as related to the present study, according to Kerlin, the GPP project "provides no evidence of the effects of differences identified on any measure of outcome" (p. 141).

The issue of whether or not instrumental studies are antidemocratic aside, his point concerning the GPP had some validity. The GPP itself did not test the model against outcome measures, but it seems likely that effective organizational performance may be a prerequisite for achieving positive societal benefits, so that finding a link between management capacity and organizational performance is a step in the right direction in answering Kirlin's idea of big questions. Moreover, the GPP's capacity elements, especially the four subsystems, are often central features of most public administration management text books as well as the subject of individual classes. Research in these instrumental areas certainly could lead to better materials in text books and training programs and more effective teaching and learning. Further, since Kerlin's article was published, a few studies have attempted to link the GPP model with outcome measures, and these are described next.

Testing the GPP Model

Using data from the GPP on city governments, Donahue, Kneedler, and Seldon (2000) explored human resources management performance through quantitative analysis, but their focus was on HRM performance in city governments, not on policy outcomes. They also assessed the impact of two environmental variables, which they postulated would influence HRM capacity. These were differences in form of urban government and level of unionization.

Form of government in this case was a three-point continuum from strong mayor to strong city manager governments with mixed structures in the middle. They postulated that strong mayor governments with patronage systems "would have lower workforce capacity...than civil service systems administered by professional public managers" (p.

390). In theory, patronage-based governments would likely score less well on HR characteristics than those with professional civil service structures.

The other environmental variable, unionization, is a factor in housing agencies. The authors suggested that governments with strong unions and rigid civil service systems that result from strong unions would serve as “a significant constraint on the ability of top leaders to acquire and use the flexibility necessarily to link human resources management to clear performance objectives” (p. 391). In the case of housing agencies, those with strong unions would have less human resources management capacity and thus exhibit lower overall performance. Donahue, et al. (2000) postulated that high HRM should exhibit: sufficient information with which to plan effectively for current and future workforce needs; ability to hire faster than low performers’ ability to terminate employees sooner than low performers; and ability to terminate a larger percentage of employees during their probationary periods than low performers

The authors conducted a descriptive analysis of these data, generating several differences between high and low HR capacity cities: high capacity cities had a lower percentage of union workers compared to low capacity cities (34% to 88%); high capacity tended to be administrative/reformed cities; average population was almost twice the size in high capacity cities than low capacity cities; high capacity cities had a lower percentage of classified employees than low capacity cities (82% versus 88%), and a higher percentage of provisional/non-classified positions than low capacity cities (18% versus 12 %); high capacity cities had fewer classification titles than low capacity cities; and high capacity cities had higher turnover than low capacity (9.28% versus 5.5%).

In general these descriptive results supported the authors' hypotheses that unionization was negatively related with management capacity and with traditional strong mayor form of government (p. 401). The correlation analyses of these data, however, were not quite as conclusive. For example, while unionization was slightly negatively associated with capacity, the coefficient was not statistically significant. The coefficient for city classification was negative but only significant at the .10 level, modestly supportive of the hypothesis that the strong mayor form of government would have lower HRM capacity (p. 401).

When broken out by HRM criteria, the results were again modestly conclusive. Both unionization and strong mayor cities were negatively associated with faster hiring and a variety of tools for motivating employees with statistical significance generally reaching the .05 level; however, there were no statistically significant relationships between city classification and unionization when it comes to planning, sustaining or structuring the workforce (p. 401).

Testing the four outcomes of effective HRM generally supported the GPP model with overall capacity significantly associated with each outcome with three at the .01 level and one at the .05 level (average time to terminate). In essence, high HMR capacity cities "are significantly more likely to have the information they need...to plan effectively...to fill positions more quickly...to release persons who do not perform adequately during the probationary period...[and] the average time to terminate is lower in cities with higher capacity" (p. 403).

Testing bivariate relationships of HR outcomes with both contingent variables—level of unionization and city type—generated partial support of the stated hypotheses.

Unionization was negatively and significantly correlated with speed of hiring but positively and significantly correlated with speed of termination. Unionization was not significantly associated with the availability of information or termination during probation (pp. 403-404). For strong mayor cities, significant negative relationships existed for speed of hiring and information, but there were no significant relationships for the other two outcomes—average time to terminate and percent terminated during probation, lending partial support to the article’s hypotheses (pp. 404-405). As the authors noted, theirs was an exploratory effort with significant implications for assessing effective public management.

Coggburn and Schneider (2003) tested the GPP model along with three other variables on state government performance, in part addressing Kirlin’s concern for societal not instrumental impacts. Performance was measured

on the tangible distribution of public resources within states....expenditure allocation for particularized benefits (that is, reflected in programs such as employment security, public transportation, and health care, which provides services to specific groups...) and collective goods (that is, policies such as police protection, parks and recreation and community development, which ostensibly benefit all of society... (pp. 209-210).

In this instance, the “difference between the percentage of state government expenditures devoted to welfare and to highways” served as the dependent variable (p. 210). In addition to the GPP management capacity variable (the average numeric score

for the four key subsystems with an A equal to 4 points and a D equal to 1.33 points), the model included variables for citizen and government ideology and size of state government. The results suggested that 51 percent of the variance in state spending was explained by the model with all four variables statistically significant.

Higher management capacity was associated with broader, collective benefits, as was size of state government. Citizen and government ideology were associated with spending on individual benefits. The authors concluded that “state management capacity denotes states possessing the wherewithal...and foresight...to perform at high levels...to focus government’s efforts on programmatic areas that produce tangible results to large segments of the citizenry...” (p. 211). It is also possible that larger governments (the size variable) attracted better managers, and it was the better managers that drove higher performance.

Hou, Moynihan, and Ingraham (2003) took an element of the financial capacity part of the GPP model—rainy day funds--and quantitatively tested its link with management capacity. They found support for both capacity and rules as statistically significant in predicting rainy day fund balances with R^2 's ranging from 0.55 to 0.86 depending on the specified model. While limited in scope, this study supports the GPP model, at least for this somewhat obscure performance measure.

Jennings and Ewalt (2003) used the GPP model (excluding capital management) to test state management capacity’s influence on welfare performance (a societal as well as individual impact). As part of their model specification, they converted the letter grades of the GPP criteria to numeric scores and used them as independent variables in a multi-variable regression analysis at the state level. They used three outcome measures:

job entry, job retention, and earnings gain. Independent variables were: an index of TANF restrictive policy, change in state unemployment, median family income, state spending on TANF, Putnam's social capital index, a citizen's ideology score, individual case loads in a single year, and strict sanction enforcement. They found little support for the GPP model with the exception of managing for results, which had a statistically significant positive impact on the earnings gain measure. The model did not affect either the job entry or job retention measure. Interestingly, not one of the many independent variables was significant across all three outcome measures, suggesting that different outcome measures are likely the result of different management actions.

The authors suggested that the weak linkage may have resulted from the fact that capacity prepares one for higher performance but without leadership and linking mechanisms, high performance may not be achieved. This is suggested in the GPP's explanation of its own model (Ingraham, et al., 2003, pp 130-132). The reported model did not account for leadership or linkages. A second reason for the weak relationship was that the model may not have "captured the right dimensions of program strategy and management" (p. 25). A third reason, and one that may be the most important, was that data were aggregated at too high a level, masking both high and low performers so that the end result showed a weak relationship. The authors suggested that disaggregating data at the county level may have enabled them to pick up management effects of more significance, as was evidenced in the welfare study conducted by Ratcliffe, et al. (2007).

Moynihan and Pandey (2004) focused on managers of performance within an organizational context divided into two explanatory factors: environmental and organizational (p. 423). The environmental factors included support of elected officials,

influence of clients, and the influence of the public. Organizational factors included culture, centralization of decision authority, goal clarity, and barriers to reorganization and their impact on employees' perceptions of organizational performance. Data were gathered from a National Administrative Studies survey of state managers working in information management activities. The authors created their variables of interest by identifying key questions and answers from the survey and forming various indices with which to test with OLS.

They found statistically significant results for the following: elected officials support (positive); degree of public/media influence (positive); organizational culture (positive); clarity of goals (positive); and centralized decision making (negative). Also of interest were null findings for the following: rational, group and hierarchical organizational culture and degree of client influence.

Selden and Sowa (2004) tested a multi-dimensional model of organization performance. The dimensions included: management and program performance; processes and structures (capacity) outcomes; and objective and perceptual performance measures. For management outcomes they looked at voluntary turnover (objective) and operating staff job satisfaction (perception). "Lower turnover is indicative of a stronger, more effective organization" (p. 402). For capacity they examined management infrastructure, employee training, and performance management systems. Like the GPP project, they "view management capacity as the degree to which the necessary systems and processes are in place to maintain an organization" (p. 404). For program capacity they used quality of the classroom, quality of the teachers, and the nature of the services provided. For program outcomes, they used parental assessment of the school readiness

of their children. They demonstrated that management and program capacity have an impact on organizational performance, although there were limitations such as a small number of cases (p. 410).

King, Zeckhauser, and Kim (2004) examined “the variance among states in how they are managed on the basis of GPP data” (p. 1). They looked closely at three categories of independent variables, each with several components, and their relationship with the grades given to each state for the five management dimensions of the GPP as well as an overall score. Under government institutions, the variables were strong governor and professional legislature. For political and social environment, the variables were social capital, good government groups, and friends and neighbors. Under business environment, the variables were entrepreneurialship energy and tax burden. In general they found statistically significant relationships in each category with GPP subsystems and overall scores in predicted directions. Of note, a strong governor did not have a significant relationship with GPP scores. Overall the model explained about 25 percent of the variation in GPP scores with social capital being the highest positive variable and the presence of good government groups as the strongest negative value. So the GPP model, on the basis of this study, suggested that management was better in states with a good business environment, with strong social capital and professional legislatures (p. 21). On the other hand, this study did not address policy outcomes.

With the exception of the Donahue, et al., (2000) study, which examined HR characteristics (but not against outcome measures), GPP studies used grades for each subsystem in their models, not GPP criteria or characteristics, as my study employed. The next section reviews each GPP’s criteria by subsystems and related characteristics. For

each set of criteria, the GPP created a series of questions for responding governments. These questions were then adopted with close-ended answers for the survey used in this study. The questions and available responses are listed by each of the GPP elements used in this study in the next chapter.

GPP Subsystem Criteria

The remainder of this chapter summarizes criteria for human resources information technology, managing for results, and finally, for integrating management systems for the GPP model.

Human Resource Management

Human resources management is an essential subsystem within any public organization. The GPP defined human resources management as “policies, systems, and practices that influence employees’ behavior, attitudes, and performance, and subsequently the performance of the organization” (GPP, 2000, p. 101). Functions falling under the scope of HRM included: strategic and workforce planning, recruiting prospective employees, selecting training and developing employees, managing employee rewards and recognition, evaluating employee performance, classifying positions, creating a positive and safe work environment, and administering employee benefits (p. 101).

Working with practitioners and scholars, the GPP evaluated HRM systems of state, city and county governments over several years. This led to the identification of five criteria characterizing good human resources management.

1. A formal strategic analysis of present and future human resource needs
2. A hiring process that results in an initial skilled workforce

3. Programs that maintain an appropriately skilled workforce over time
4. Tools to motivate the workforce to perform effectively in support of the organization's goals
5. A leaner structure for the workforce (p. 102)

Criterion one focuses on the organization's understanding of personnel capacity over time and how this leads to planning for present and future human resource needs. Creating such a plan requires the organization to collect workforce data in order to evaluate current and future needs; to conduct needs assessment; and to meet its identified needs (Donahue, et al., 2000, p. 394). Criterion two addresses hiring practices of the organization, highlighting quality and timeliness of recruiting efforts. Such qualities speak to greater flexibility and discretion of hiring managers to find the right people quickly (p. 395). Criterion three examines the ability of an organization to keep a skilled workforce, which includes training, retention, discipline, and termination. Again, key characteristics of high performers are flexibility, discretion, and timeliness of management to keep high performers and to release low performers who do not meet performance standards. Criterion four acknowledges the motivation issue and how an organization uses a variety of tools and techniques to ensure motivated employees. Criterion five addresses the ability of an organization to meet its human resource goals with the right-sized classification system and flexible policies regarding promotions and compensation (GPP, 2000, p. 102). In general, these criteria focus on flexibility, timeliness, and discretion for program managers to perform their various functions. In

other words, high performance HRM exists when typical bureaucratic barriers are removed.

The GPP survey included approximately 100 mostly open-ended questions. GPP staff also collected and analyzed numerous documents related to the subject of the questions. Its overall assessment revealed a number of lessons from those jurisdictions achieving high performer status--those that received a grade of B+ or higher. High performance human resource management capacity among these governments reflected: technological sophistication; sufficient information needed for decision-making and planning; a diversity of selection and reward human resource management tools; ability to hire and fire faster; and fewer classified titles in pay plans (p. 121).

Information Technology

According to the GPP, information technology (IT) is a central feature of state and local government management for three reasons: quality, accurate, and timely information is critical to the service orientation of government operations; IT supports direct services as well as the management subsystems such as finance and human resources; and the Internet has become an integral part of government service, communications and transparency (GPP, 2000, pp. 133-134).

Criteria identified for this management system were developed through “a round-robin review process between academicians and journalists at *Governing* magazine” (p. 134). They identified seven criteria related to its overall importance in evaluating IT management:

1. Managerial support—IT systems support agency-wide and division specific “information that adequately supports managers’ needs and strategic goals” (p. 134)
2. Architecture--Various systems form a coherent architecture
3. Planning—Government has meaningful, multi-year information technology plans that are centralized, infused with management input and with agency-wide as well as department specific plans
4. Training—Training is adequate for end-users, and specialists have the training to operate the systems
5. Cost-benefit analysis/impact analysis—Government has the ability to evaluate and validate that IT investment costs are justified by the benefits
6. Procurement--Purchase of IT can be done on a timely basis
7. Citizen participation—The IT “systems support the government’s ability to communicate with and provide services to its citizens” (p. 134)

The GPP focused on an interesting IT tool to address managerial support. That tool is the Geographic Information Systems (GIS). A GIS system is “designed to make accessible a wide variety of place-based information, ranging from the location of utilities to the incidence of violent crimes in particular neighborhoods” (p. 139)—thus its importance to managers. Its survey in 1999 found 90 percent of states, 45 percent of cities and 59 percent of counties had GIS systems. At the state level, just having a GIS system does not appear to be a differentiator for management capacity, hence performance, since most states have such systems.

A second area under management support was the integration of IT systems in the support of basic functions such as finance, human resources, budgeting, and project management. The GPP asked yes or no integration questions for a number of specific management systems. These have been included in the survey used in this study with the addition of work order and PHAS dashboard applications.

The GPP assessment of planning was evaluated with several factors: the presence of a formal, integrated strategic information system planning, overall strategic plans within which IT was represented, and the frequency with which IT plans were updated. On the basis of the 1999 survey, 45 percent of cities, 76 percent of counties and 82 percent of states had formal IT plans in place. As to overall strategic plans, 74 percent of counties included IT within their plans and 60 percent of states did the same. Sixty-one percent of states and 62 percent of counties review plans annually or semi-annually.

Information Technology procurement questions focused on timeliness of purchasing IT hardware and software and centralization of procurement processes. For timeliness, six months seemed to be the key term with 83 percent of states being able to respond to a request for proposal in less than six months and 70 percent of counties beating this figure. Centralization is an issue for states and counties but perhaps not for housing agencies, since they are single purpose entities.

The GPP report did not have a specific write up for citizen participation, but it did have a section on trends and lessons learned which highlighted E-government initiatives related to involving the public.

Managing for Results

Managing for results or MFR is a system of management that includes the following procedures: “the creation and distribution of performance information through strategic planning and performance measurement routines” (GPP, 2000, p. 153). It is perhaps best tested when it is used in every day operations and resource allocation decisions (p. 154). Similar to other management systems, the GPP used surveys, document review, and interviews to elicit information to assess MFR. The GPP identified four characteristics that of a MFR system: strong support from the top; use of performance information systems; planning and performance information; and vertical integration. It is clear from the GPP’s research that a MFR framework seems to work best, or at least is initiated and supported, primarily from the top. One way to measure who supports a MFR framework is through involvement in strategic planning (goal setting), a cornerstone of MFR. The GPP survey shows that in states’ governors had the highest involvement with the second highest participants being the state budget office—often part of the executive office as well. In counties, the budget office had the highest involvement with the second highest group being individual agencies.

A performance information system (PIS) is used to create and distribute performance information; it offers the potential for more effective decision-making. These elements and the information therein are shared in various ways, obviously in published documents but also via the Web. Such systems usually contain the following elements: vision statement; a statement of core values; agency mission statements; descriptive goals; quantified performance measures; and targets. Under planning and performance reporting, the GPP looked at three possible ways to approaching MFR from

a reporting point of view. The three methods were: government wide, agency wide, and budget.

The Government Performance Project research showed that 40 percent of states, 26 percent of cities, and 44 percent of counties used all there reporting methods. Overall, 54 percent of states used government wide reports, as did 66 percent of cities, and 61 percent of counties. The key to this criterion, though, is not what area reports focus on but whether the reports at various levels reveal coordination among the different levels or whether there is conflict among the different levels. The question becomes one of goal consistency among the various levels of plans: government wide, agency wide, and program specific.

The GPP found relatively low levels of consistency among states with only six states (20 percent) showing consistency between statewide and agency goals (p. 160). Similar results were found for cities and counties (p. 161). Thus the desire for MFR to lead to clarity of task and purpose has not quite been realized (p. 161). For housing agencies, the question may be used to address whether or not an agency's strategic plan meshes tightly with HUD's overall goals and objectives. One would surmise that this is the case, since HUD is the major funding source and PHAS is one of the tools used for evaluating housing agency performance.

Vertical integration is "the idea of maintaining consistency between high level goals and lower-level goals and measures" (p. 161). High level goals are often aspirational and usually are not directly measureable. Thus, translating high level goals to agency objectives and then to program and individual measures is problematic, or at least challenging from a consistency perspective (p. 152). The GPP assessed this integration

through content analysis. They found governments struggling “to link goals and measures...” (p. 164). In states, 20 percent had strong links between goals and measures, and an equal 20 percent of states had measures that bore little consistency between measures and goals (p. 165).

A good example cited by the GPP researchers was Jacksonville’s linkages facilitated by a business plan which provided the framework to bridge the gap between high level goals and program measures (p. 166). Thus, a simple approach for housing agencies, already following federal guidelines for developing an annual five-year plan as well as being evaluated by HUD on the basis of PHAS, is to ask if they have business plans.

Integration of Management Systems

The final component of the GPP model for high performing organizations is the ability of organizations to integrate the management systems so they work in concert not as barriers to efficiency and effectiveness. “Integration is one of the qualities that...contribute to high-capacity in government” (GPP, 2000, p. 173). Leadership is also critical in this effort because leaders “give voice and substance to government’s vision. In speeches, strategic planning, budgetary documents, and daily actions intended to effectively mobilize government resources, leaders provide a common value base and clear priorities” (p. 173). Overall, the GPP found strong leadership in governments with high capacity results and its absence in those with low capacity.

To assess the state of integration in its study governments, the GPP did not use a survey, interviews, or document review as it did for the other components of its study. Rather, the GPP identified three key management systems as the focus of integration.

These were the human resources (people), financial management (money), and managing for results (a driver of for all other management systems). Quantitatively examining relationships between these three systems was intended as an exploratory effort in substantiating the overall findings of their long-term efforts.

They first compared descriptive statistics of components that relate to both MFR and HR and MFR and FM. Secondly, they used correlation analysis to test the relationships of FM and HR scores with each MFR criterion. The key component of MFR was strategic planning, and the two key components of HR were workforce planning and an HR strategic plan. The correlation was defined by the presence or absence of the different elements, with presence coded a one and absence coded a zero.

They found weak relationships between county MFR and HR systems (p. 178). Essentially, having a county-wide strategic plan did not mean a county would also have a workforce or HR strategic plans. The correlation analysis showed slightly different results with a significant correlation found between a county-wide strategic plan and an HR departmental strategic plan (p. 178).

Finally, the GPP assessed individual MFR criteria against HR and FM at the state and county levels. Here the results were different. Most importantly, the GPP found that HR and FM for both state and county governments were significantly correlated with MFR, giving support to the “hypothesis that an increase in MFR management capacity leads to increases of HR and FM capacity as well” (p. 181). Secondly, at the state level MFR had a higher correlation with FM than with HR, suggesting that financial management is more strongly related to performance measurement than human resources management. HR quite often at all levels of government is insulated from other parts of

government due to various civil service rules. At the county level, MFR correlations are positive and about equally related to both FM and HR.

For individual components of MFR, there were differences between levels of government such as for strategic planning, which was significant for both HR and FM at the state level but not at the county level. This difference may be explained by differences in structure of government with many counties being less unified (multiple elected officials in charge of key areas as opposed to one governor).

While exploratory in nature, the GPP findings suggested that using similar organizations like housing agencies may offer a simpler way to explore these linkages. The structural components of housing agencies are generally more similar than the various structures found in state and county governments. Therefore, the housing agency assessment of integration can follow the analytical logic used by the GPP but within a simpler structure which perhaps might be more revealing. It used four questions to represent this part of the model. The questions were intended to discover if housing agencies have (1) a workforce plan; (2) a strategic information system plan; (3) a strategic plan, and (4) a business plan. Further, the existence of these plans was tested for their relationship with housing agency performance.

Summary

Some 100 years ago Frederick Winslow Taylor was extolling the virtues of scientific management's ability to improve the performance of a ball bearing factory (Taylor, 1911/1998). This literature review revealed similar concerns exist today, but the focus is now on model building, control variables, networking, a variety of other management concepts, and perhaps less well-defined outcome measures. Recent studies

provide useful insight into the relationships among variables of interest, but most lack precision in informing practitioners of what to do. The criterion-based model created by the GPP took a different approach and identified high performance on the basis of actions, tools, and systems identified as better practices in the field, but it did not complete the linkage with outcome measures in its research efforts. While studies using GPP data to test various notions of performance have shown mixed results, none employed the detailed best practice characteristics identified by GPP researchers, *Governing* magazine journalists, and professional staff from governments participating in the study against outcome performance measures. My study tested part of the GPP model's relationship to high performance, using these detailed characteristics, with outcome performance measures from public housing agencies. Chapter III discusses the research methodology used for this test, linking capacity to a verifiable outcome measure.

CHAPTER III

RESEARCH METHODOLOGY

This chapter discusses research methodology used in this study, including approach, design, data sources, client and environmental variables, survey instrument, sampling, internal and external validity and reliability, operationalized management capacity variables, scoring criteria, and unit of analysis. The chapter ends with a discussion of assumptions and limitations.

Research Approach

The general problem addressed in this study was related to performance of public organizations. While there has been much prescriptive advice and numerous case studies that describe high performing government operations, relatively few have employed quantitative evidence for their cases. A primary purpose of this research was to test quantitatively if management capacity increased organizational performance in public housing agencies, validating key elements of the model developed through the Government Performance Project. The management capacity model incorporates specific criteria and operating characteristics under the control of public (and private) managers and certainly of housing agency managers. This specificity separates the GPP effort from other management studies that focused on broader case studies or a singular characteristic of an individual leader. Public management is more of a team effort accomplished through a variety of systems, and the GPP model reflects this reality.

A second purpose was to isolate the impact of the elements of the management capacity model--human resources, information technology, integration of management systems, and overall managing for results framework—to assess the relative impact of

these elements on organizational performance. A third purpose was to unpack the subsystems to determine “better” practices (actions, approaches and products) exhibited by high performing organizations, on the basis of PHAS scores. A fourth purpose was to adjust these results by controlling for various housing and client characteristics. This part of the analysis attempted to discover how variables not under the direction of management affected performance, the results of which may provide insight into HUD’s own assessment system, which does not adjust for potential mitigating variables (Rubenstein, Schwartz, and Stiefel, 2003). Finally, the predictive power of the model was tested through regression.

The second chapter described the long-running quest for improving organizational performance, beginning with the era of “new” public management. The new era includes the past two plus decades, but particularly the last ten years where quantitative models testing relationships between a host of management characteristics and organizational performance became de rigueur, especially those employing Texas school district and welfare reform data.

A more long-term, collegial effort was managed through the Government Performance Project, where practitioners, academics, and journalists through an iterative process identified a number of best practice examples with a specific framework in some ways harkening back to the classic era’s POSDCORB—planning, organizing, staffing, directing, coordinating and budgeting. The criterion-based model offered a systems view of organizational performance by focusing on functions managers control that support the organization along with two special features, integration of management systems, and managing for results. As previously explained, my study, however, did not use the full

GPP model (leaving out two subsystems—capital and financial management); so it was only a partial test.

Research Design

The specific research problem examined was whether criteria identified in a management capacity model developed through the Government Performance Project impacted outcome performance measures of public housing agencies in a statistically significant manner. Management subsystems, environmental and client characteristics, along with outcome measures, were necessary to test the model. Several tools were used to determine quantitative relationships between high performing and non-high performing organizations. These included descriptive and correlation analysis, and a t-test of differences in means in comparing two groups, an after-the-fact, quasi-experimental design, as suggested by Johnson (2010, p. 167), with the management subsystems serving as the treatment and PHAS scores as the outcome. Statistically significant differences in a test of means addressed the research questions regarding the association between management capacity and high performance. Finally, regression analysis was also used to discover more detail (e. g., strength and predictive power of the model) regarding the relationships among the variables. The regression test followed the reduced form model developed by Lynn, et al., (2000), depicted in Figure 2 and was written as:

High Performer (O) = $f(E, C, M)$ where

O = PHAS scores

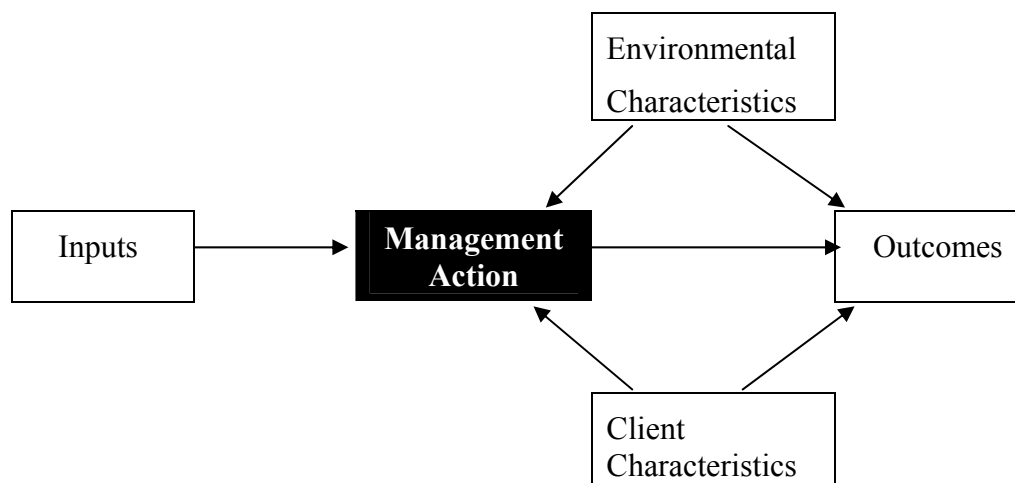
E = Environmental characteristics (age of property, size of project, building type)

C = Client characteristics (neighborhood poverty rate, occupancy type, elderly versus family)

M = Management capacity (human resources, information technology, managing for results, alignment and integration)

Figure 2

Performance Model Revisited



Methodology

The research method selected to determine the impact of the management capacity model on organizational performance involved primarily a quantitative examination of public housing agencies with a range of outcome performance scores. This section reviews sources of data, client and environmental variables, survey instrument, sampling, and internal and external validity and reliability.

Data Sources

The Department of Housing and Urban Development maintains a web site of housing agencies by state. Each agency's section has several key pieces of data. These

include contact information—address, phone number, e-mail address, Public Housing Assessment System scores, and number of housing units. The author examined each agency by state, identified those agencies with more than 250 housing units, and collected published PHAS scores for 2008 (there was not a breakout of sub-scores, only the final score on the basis of a 100-point system). Public Housing Assessment System scores represented the outcome measures used in the model. Since HUD applies different rules for agencies with 250 or fewer housing units, very small agencies were left out of the study. Data extracted from HUD’s web site resulted in approximately 700 such agencies with more than 250 housing units, but only 542 of these ended up with accessible email addresses used to send out the initial survey.

Client and Environmental Variables

A major change in budget management for housing agencies began in 2006 (HUD, 2006). Rather than a lump sum awarded to each agency (on the basis of a regulatory formula and Congressional allocation), the new approach funded each agency at the development (housing project) level using the new project expense level (PEL) calculation (Federal Register, 2005, pp. 76964-76966). In essence, funding for the entire agency became a sum of cost determinations for each development or project operated by the agency on the basis of a formula including the following seven variables used in this study: size of project, age of property, bedroom mix, building type, occupancy type, location, and neighborhood poverty rate. Each had a specific value (coefficient) calculated with a regression from a cost study project completed by the Harvard Graduate School of Design (2003). The coefficients represented a percentage above or below the reference project from the study, and when used with other elements converted to a dollar

value, which then represented the estimated cost/budget for any particular housing project or development. For my purposes, these coefficients were useful in forming environmental and client characteristics. Table 4 shows the variables, related coefficients, and definitions.

The Department of Housing and Urban Development has computed a cost variable for each development in each housing agency as part of its funding formula process. Hence, the total of these variables were available, through a calculation, for each agency (HUD, 2008, Project Expense Level calculations). Neighborhood poverty rate, location, and occupancy type related primarily to client characteristics; the others dealt with physical characteristics of the housing stock. These, therefore, were used in the performance model as client and environmental variables.

The HUD model suggested that larger size (above 150 units) contributed to economies of scale for costs with a negative coefficient (-1.47%). This break point for economies of scale makes some sense on the cost side, but perhaps not on the management side. With an increasing number of units, managers must have more workers and more complicated coordination to deal with the greater unit size in both operations and maintenance. Thus, the performance model will use size not for economy of scale but as a management challenge, assuming the larger the size, the greater the challenge for management. The size variable used was the actual number of units, not the coefficient from the Harvard study. Also included for controls were a building age and building type index on the basis of a summation of the coefficients for each housing agency. The management capacity subsystem variables came from responses to a survey. The next section reviews information about the survey.

Table 4

Constant, Coefficient, and Variables

Variable	Coefficient (%)	Definition
Constant	520.18%	
Size of Project	0 -1.47%	0-149, row townhouse 150+, high rise/mixed, scattered
Age of Project	0% 0.29% to 9.73%	0-8 years 9-28+years (approximately 0.29% for each additional year)
Unit Size (bedroom mix)	17.61% 37.65% 48.73% 0%	Percent of 2 bedroom units Percent of 3 bedroom units Percent of 4 or more bedroom units Other
Building Type	0% -2.01% -0.23% -0.21% 0%	Walk-up garden Detached/semi-detached Row/townhouse High-rise/mixed Scattered
Occupancy Type	0.0% -5.83%	Family Elderly
Location	2.55% 0% 0%	Metropolitan Central City Metropolitan Non-Central City Rural
Neighborhood Poverty Rate	0% 2.13% 4.30% 6.6%	0% to less than 20% More than 20% to less than 30% More than 30% to less than 40% 40% or more

Source: HUD, 2008

Survey Instrument

The GPP project used surveys to collect information from participating governments regarding management subsystems and managing for results. The questions

used in my survey were essentially the same as used by researchers in the GPP and reported in their work (GPP, 2000) as well as in the survey response by the City of Phoenix, Arizona (1999). The study survey, derived directly from questions used by the GPP, solicited information about human resources, information technology, integration of management systems, and managing for results. The primary difference between the two approaches was that the GPP survey questions were mostly open-ended. The study survey provided answer choices for respondents in various formats. These responses became coded numbers that were used in part of the analysis. More detail about these variables and codes are provided in a later section of this chapter. Originally, this study was intended to capture the full GPP model, and the first e-mail survey had 44 questions with a number of subsections, but a low response rate to this lengthy survey led to its reduction to 26 questions with a number of subsections with the elimination of capital and financial management subsystems. Details regarding survey questions, response choices, and coding can be found in Tables 8, 9, 10, and 11. The survey document was electronic, formatted to fit Survey Monkey's system, and is only available as a PDF.

Sampling

Survey Monkey was used to administer the survey via email. Surveys were sent to housing agency executive directors with a link to the on-line form on Survey Monkey's web site in late July 2009. The email included a cover letter to the executive directors explaining the purpose of the survey, among other factors. Attachment 1 is a copy of the first email. This initial effort resulted in 542 accessible e-mail deliveries. Survey Monkey required an opt-out provision in the e-mail, and only the recipient of the e-mail with the link to the survey had the ability to enter data into the on-line form. It could not be

forwarded to, for example, a staff person for action. So the executive director had to complete the actual response (or the person accessing the on-line survey had to use the executive director's computer). These factors may have contributed to the difficulty in collecting a reasonable number of responses to the on-line e-mail. Survey Monkey has a system for sending reminder e-mails to anyone on the list who had not yet responded. Three reminders were sent out over a seven-week period of time. Unfortunately, the response rate to the initial survey was quite low, only seven percent.

The survey email instructions and subsequent letter for the mail survey, which was essential the same as the e-mail, generally followed Mangione's (1998) guide for mail surveys: a good respondent letter, contact information in the letter, good first sentence, the importance of the study, who was being asked to participate, guarantee of anonymity, voluntary participation, easy to read, no cost on-line response, and paid return postage for regular mail (pp. 401-402). No monetary incentives were offered, but all were invited to receive a summary of the results. (Only one agency director requested a summary.)

Further, the original plan intended to collect a large amount of information directly from HUD through the FOIA process, including all PHAS category details. As a result of cost constraints, that avenue was closed. Because of this, the initial survey increased in size, which probably led to lower response rates, and detailed PHAS figures were not used in the analysis; only the composite PHAS score was used.

As previously mentioned, because of the low initial response rate, the survey was shortened to 26 questions by eliminating sections related to the finance and capital subsystems. This revised survey was then sent out through Survey Monkey in October

2009 to those who had not responded with a similar cover e-mail and instructions as the first e-mail. Again, several reminder e-mails were sent out over a five-week period. This resulted in an additional 22 responses, for a total of 58 responses from out of 542 working emails for a response rate of 11 percent.

Since this rate was still quite low, a second tactic was used: mail surveys with the same 26-question instrument. The identical survey with a similar cover letter was sent to approximately 380 housing agencies out of the 484 agencies left over from the internet survey (those that had not responded). The mailing was handled by a professional marketing firm and included a stamped, addressed return envelope in two separate mailings. These mailings were completed in the fall/winter of 2009. A total of 66 completed surveys were returned for a response rate of 17 percent. With a total of 124 responses from a working e-mail list of 542 meant a final response rate of 23 percent; however, after review of responses and data cleaning, only 103 usable responses remained for a final response rate of 19 percent. Follow up emails were sent to 15 agencies that responded but were missing data. Only two provided missing data.

Both email and mail surveys are subject to major non-response because obviously “it is *very* easy for recipients not to respond” (Mangione, 1998, p. 405, emphasis in original). A few agencies replied to the mail survey or follow up email stating that they simply did not want to respond, and a couple stated that if the survey were required by HUD, they would comply; otherwise they too declined to respond. It is possible that fear of criticism on the part of less than stellar performers blunted the response rate, even though anonymity was promised.

The single greatest concern related to non-response was that non-respondents may be different than respondents. In the present case, two important characteristics were similar for both the respondents and the original population of interest: size of housing agencies (number of units) and PHAS scores. Table 5 illustrates size by percent for a breakdown of both the sample and population of interest for this study. The matches between the two were quite close with the possible exception that the sample was slightly underrepresented in agencies with fewer than 300 units.

Table 5
Unit Size Comparison

Size in Units	Study Sample	Population	Difference between Population and Sample
Less than 300	12%	16%	4%
Less than 500	48%	51%	3%
Less than 1,000	73%	76%	3%
Less than 1,500	84%	86%	2%
Less than 2,000	90%	90%	0%
Less than 2,500	94%	93%	-1%
Less than 3,000	95%	92%	-3%

The outcome measure, PHAS score, was fundamental to the study. A review of the population and sample range of PHAS scores are shown in Table 6. Overall, it appears that the sample scoring was slightly higher than the population scoring, and the sample had fewer average and below average performers (on a percentage basis). The

differences were not large, but it was not possible to determine if there might be a small bias in the sample towards higher performers.

Table 6

PHAS Score Comparison

PHAS Scores	Study Sample	Population	Difference between Population and Sample
Less than 70	2%	6%	4%
Less than 80	12%	17%	5%
Less than 90	56%	61%	5%
Less than 95	92%	89%	-3%

For a number of reasons, content of the survey instrument should be high. The survey questions as well as range of response possibilities were derived from extensive work done in the Government Performance Project. The questions were drawn from actual questions published in the City of Phoenix’s (1999) written response to the survey. Response categories were derived from published GPP reports reviewing responses by states, cities, and counties. Where this information was not available, I created categories for responses. The questions and possible responses in this survey were concrete and unambiguous. They were specific in asking, for example, whether or not certain products had been created such as a strategic IT systems plan. In fact, the mere presence of a variety of plans was the basis for a key model element, integration of management

systems. This clarity is demonstrated in the section describing the subsystem variables in the next section of this chapter.

Cronback’s alpha was used to test the reliability of survey responses. Table 7 provides the coefficients from this test estimated there internal consistency of survey responses.

Table 7
Cronback’s Alpha for GPP Variables

Variables	# of Questions and Sub-questions	Cronback’s Alpha
Human Resources	7	.46
Information Technology	21	.75
Managing for Results	17	.93
Integration	4	.61

Two of the categories have relatively high alpha values, information technology and managing for results. Two have low alphas, human resources and integration, suggesting potential problems in discerning differences between high and average performers. On the other hand, using the GPP model’s actual questions and response categories limited the use of alternative questions and responses in order to be consistent with GPP research.

Management Subsystem Variables and Scoring

The survey instrument was modeled after questions used in the Government Performance Project. The survey consisted of a number of Likert-scales, multiple choice, and simple yes and no questions. Overall there were 26 questions in the survey of which 22 were directed at components of the management capacity model, but several questions had subparts, which resulted in a total of 56 possible responses. Tables 8, 9, 10, and 11 identify survey questions and response choices for each dimension of the management capacity model along with their coded scoring options in parentheses.

Human Resources Subsystem Variables and Scoring

Table 8 reports the components with codes for human resources subsystem. Total scores for human resources could range from 7 to 34 points, with higher scores representing characteristics of high performance management capacity.

Information Technology Subsystem Variables and Scoring

Table 9 reports the components with codes for the second subsystem, information technology. Scores for an information technology questions could range from 20 to 69 points, with higher scores representing characteristics of high performance management capacity.

Managing for Results Variables and Scoring

Table 10 reports the components with codes for the third subsystem, managing for results. Scores for a managing for results questions could range from 28 to 121 points, with higher scores representing characteristics of high performance management capacity.

Table 8

Management Capacity Survey Questions for Human Resources with
Component Variables and Scoring Codes

H1	Human Resource	Questions 5, 6, 7, 8, 15e, f, g, 9, 10, 11, 12, 13
1.	Existence of a workforce plan-- question 5 no (1); yes (2)	
2.	Turnover in 2007 and 2008 (questions 6, 7 and 8) A calculated percentage on the basis of total number of employees who left each year divided by the total number of full-time equivalent employees in each year; 0-2 percent (6); 3-4 percent (5); 5-6 percent (4); 7-8 percent (3); 9-10 percent (2); 11 and higher (1).	
3.	Speed of hiring (question 9) Five choices: less than 30 days (5); 31-60 days (4); 61-90 days (3); 91-120 (2); more than 120 days (1)	
4.	Speed of termination for performance (question 10) Five choices: less than 30 days (4); 31-120 days (3); 121-180 days (2); more than 180 days (1)	
5.	Unionization (question 11) Six choices: 0-20 percent (5); 21-40 percent (4); 41-60 percent (3); 61-80 percent (2); 81-100 percent (1)	
6.	Contracting (question 12) Five choices: 0-3 percent (5); 4-6 percent (4); 7-9 (3); 10-12 percent (2); and 13 percent and higher (1)	
7.	Number of classified titles (question 13) Six choices: 1-5 (6); 6-10 (5); 11-15 (4); 16-20 (3); 21-25 (2); and 25 or more (1)	

Table 9

Management Capacity Survey Questions for Information Technology with
Component Variables and Scoring Codes

H2	Information Technology	Questions 14, 15a, b, c, d, e, f, g, h, i, j, 16, 17a-c, 18a-e
1.	Access to a GIS System question 14 No (2); yes (1)	
2.	Integration of IT systems (question 15) There were ten systems listed for this question with four possible answers: the system is not in place (1); the system is in place but does not meet our needs (2); the system is in place and partially meets our needs (3); and the system is in place and fully meets our needs (4). The systems included the following: budgeting, specialized financial reports, cost accounting, payroll, hiring, HR management, training management, procurement, work orders, and PHAS dashboards. Points could range from a low of 10 to a high of 40 for this IT item.	
3.	Existence of a formal strategic information systems plan (question 16) no (1); yes (2)	
4.	IT purchasing time frames (question 17) Three purchasing options were listed with five time frames. The time frames included the following: within 3 months (5); within 2 to 6 months (4); within 7-8 months (3); within 9-10 months (2); 11 or more months (1). The three purchasing options included: written request for proposal; formal competitive bid; and negotiated competitive bid. Total points could range from 3 to 15.	
5.	E-government tools (18) no (1); yes (2) E-tools included the following: on-line application for housing, on-line waiting list, public access via kiosks, on-line complaint system, and on-line employment application. Points could range from a low of 5 to a high of 10.	

Table 10

Management Capacity Survey Questions for Managing for Results with Component Variables and Scoring Codes

H3	Managing for Results	Questions 19, 20a-i, 21, 22a-e, 23a-e, 24, 25, 26
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1. Existence of a strategic plan (question 19)
no (1); yes (2)

2. Involvement in creating strategic plan (question 20)
There were nine choices for involvement with five different levels of involvement: never (1), rarely (2), sometimes (3), often (4) and very often (5).
Choices for those involved included: agency director, senior staff, budget office, department/division directors, line staff, residents, interest groups, citizens, consultants. Total points ranged from 9 to 45.

3. Existence of an IT performance information system (question 21)
no (1); yes (2)

4. Elements in IT performance information system (question 22)
no (1); yes (2)
Items included were: vision statement, state of core values, descriptive goals, quantified performance information and targets.
Scores could range from 5 to 10.

5. Timeliness of performance reporting (question 23)
There were six time periods with five reporting personnel. The time choices with codes included: daily (6), weekly (5), monthly (4), quarterly (3), semi-annually (2), and annually (1).
Delivery choices included: agency-wide, department/division wide, budget, senior staff, and public. Total points ranged from 5 to 30.

6. Existence of a business plan (question 24)
no (1); yes (2)

7. PHAS review (question 25)
Time frames with codes included: daily (6), weekly (5), monthly (4), quarterly (3), semi-annually (2), and annually (1).
Total points range from 6 to 30.

Integration of Management System Variables and Scoring

Table 11 reports the components with codes for the third subsystem, integration of management systems. Scores for an integration of management system index for these questions could range from 4 to 8 points, with higher scores representing characteristics of high performance management capacity.

Table 11

Management Capacity Survey Questions for Integration with Component Variables and Scoring Codes

H4	Integration of Management Systems	Questions 5, 16, 19
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1. Existence of a workforce plan-- question 5
no (1); yes (2)
2. Existence of a formal strategic information systems plan--question 16
no (1); yes (2)
3. Existence of a strategic plan—question 19
no (1); yes (2)
4. Existence of a business plan—question 24
no (1); yes (2)

Unit of Analysis

The quantitative focus in this study was on the management capacity model. The model as used in the GPP research assumed the unit of analysis is the government or agency “...where these systems predominantly reside” (Ingraham, et. al, 2003, p. 23). In this study that means the unit of analysis was the individual housing agency, especially considering the management subsystems of the agency were linked with PHAS outcome

measures for the agency. It should be noted that while the housing agency was considered the unit of analysis, the survey was sent to executive directors of housing agencies. The survey questions likely required a number of staff people to determine the appropriate responses. One hopes that the responses represent an assessment of real data and not perception, judgment, or a seat of the pants guess. A major advantage of using public housing agencies was that in general all housing agencies perform the same service under the virtually the same regulatory framework. Differences in performance may be more easily discovered whether they focus on management variables or client and housing characteristics.

Summary of Predictive Model

The predictive reduced form model reads: High Performer (O) = $f(E, C, M_{1-4}) + E$. Using the criteria from the GPP model collected in the survey, this model is spelled out in detail in Table 12.

Assumptions and Limitations

Basic assumptions used in this study included the following: a score of 90 and higher on the PHAS represented high performance; a score of 94 and higher on the PHAS represented very high performance; a score of 89 or lower on the PHAS represented average to low performance; a score of 69 or lower represented very low scores; respondents answered the questions on the survey honestly and objectively, and respondents understood the questions and answer options.

Limitations of the study included the following: the sample used in the study was limited to housing agencies with 250 or more housing units; the executive director was the only person in the agency given access to the on-line survey (per Survey Monkey

Table 12

Predictive Model Elements

Outcome	Environmental	Client	M ₁₋₄
PHAS	<ul style="list-style-type: none"> • Size • Building age • Building type • Number of bedrooms 	<ul style="list-style-type: none"> • Neighborhood poverty rate • Location • Occupancy type 	<p>M₁—Human Resources</p> <ul style="list-style-type: none"> • Workforce plan • Turnover • Speed of hiring • Speed of termination • Unionization • Contracting • # of classified titles <p>M₂—Information Technology</p> <ul style="list-style-type: none"> • GIS • Integration of IT systems • Formal strategic information systems plan • Purchasing time-frames • E-government tools <p>M₃—Managing for Results</p> <ul style="list-style-type: none"> • Strategic plan • Involvement in its development • IT performance information system • Elements in IT performance system • Timeliness of reporting performance information <p>M₄—Integration of Management Systems</p> <ul style="list-style-type: none"> • Workforce plan • Strategic information systems plan • Strategic plan • Business plan

rules, the email with the link to the survey could not be forwarded to anyone else); this did not mean, however, that other staff members could not provide answers to the executive director. Executive directors (per Survey Monkey rules) could opt out of the survey without even looking at the instrument itself (a number took this option, hence they could not receive a reminder email). While the study group and population mirrored each other on two key characteristics, number of units and range of outcome scores, the low response rate limits the ability to generalize beyond the study population. Not all emails in HUD's system were accurate or working. Differences between the two groups could be masked to some extent if agencies that scored in the high 80s are similar to those scoring in the low 90s. The model tested was only a partial model, since two subsystems were not included: capital and financial management.

CHAPTER IV

DATA ANALYSIS

This chapter presents descriptive and statistical findings concerning the GPP management capacity model's relationship to the performance of housing agencies. First, descriptive data and correlation analysis were conducted to determine control variables' relationship to housing agency performance. Second, independent samples t-tests were used to determine whether or not statistically significant differences existed between high and average performing agencies. Finally, the predictive properties of a modified GPP model were tested with a regression analysis.

Descriptive and Correlation Findings

The first group of variables described relates to the physical/environmental control variables: number of units, building age, number of bedrooms, and building type. The second group of control variables relates to client characteristics: occupancy type, geographic location, and neighborhood poverty rate. Variable characteristics have been divided into ranges to allow for comparisons. The cross tabulation function of SPSS was used to create comparative tables and determine statistical significance of the relationships between control variables using Chi-square and Pearson's R.

Property Control Variables

Table 13 compares high and average performers on size, i.e., number of housing units, on the basis of four categories: very small (250-500), small (501-1000), medium (1001-1500) and large (1501 plus). The hypothesis suggested an inverse relationship between size and performance; that is, an agency with fewer units would likely achieve a

higher level of performance, and conversely, an agency with many units would likely be an average performer.

Table 13

Unit Size by Range for High Performing and Average Performing Agencies

Range	High	Average	Total
Very small (350-500)	23 51.1%	28 48.3%	51 49.5%
Small (501-1000)	9 20.0%	15 25.9%	24 23.3%
Medium (1001-1500)	8 17.8%	5 8.6%	13 12.6%
Large (1501+)	5 11.1%	10 17.2%	15 14.6%
Total	45 100%	58 100%	103 100%
	Value	Approx. T	Significance
Pearson's R	.027	.271	.787
Chi-Square	2.752		.431

The first notable finding was that over 70 percent of both high and average performers fall into the small and very small categories. This high percentage is consistent with the population of housing agencies in general. In this sample, high performers had fewer agencies in the large category, on a percentage basis, than average performers, 11 versus 17 percent, and more in the small category, 51 to 48 percent, consistent with expectations. While these descriptive characteristics suggested high

performers might be different from average performers, as the hypothesis stated, the greatest difference was only 6 percentage points, which is below the 10 percent threshold used by some as a clue to statistical significance (Johnson, 2010, p. 167). The lack of 10 percent difference on this characteristic in both small and large ranges was reflected in the non-significant Pearson's R and Chi-square.

Age of housing is detailed in Table 14. The hypothesis suggested that agencies with a greater proportion of newer units would be associated with higher performers, and those with older units would be associated with average performers. Newer was defined at 20 or fewer years old.

Table 14

Age of Housing Units by Range for High Performing and Average Performing Agencies

Range	High	Average	Total
26+ years	26	38	64
	57.8%	65.5%	62.1%
21-25 years	13	17	30
	28.9%	29.3%	29.1%
20 or fewer years	6	3	9
	13.3%	5.2%	8.7%
Total	45	58	103
	100%	100%	100%
	Value	Approx. T	Significance
Pearson's R	-1.21	-1.23	.223
Chi-square	2.177		.337

As seen in Table 14 a good majority of all housing stock is 26 or more years older, 58 percent for high performers and 66 percent for average performers. At first glance age appeared to be influential, since high performers had fewer older units and more newer units compared to average performers, but Pearson's R and Chi-square tests confirmed no statistically significant differences in means.

Table 15 reports the results of the cross tabulation of the number of bedrooms variable. The hypothesis stated that agencies with fewer bedrooms would be more closely associated with high performers and those with many bedrooms with average performers. Average performers showed a slightly higher percentage of bedrooms in the fewer than 1.5 bedroom category (19 to 11 percent) and slighter fewer agencies on a percentage basis for larger bedroom sizes (41 to 44 percent), but the percent differences did not reach the 10 percent threshold; so even though there appeared to be some advantage for average performers, contrary to the hypothesis, the lack of a larger difference was reflected in the non-significant finding for Pearson's R and Chi-square.

Table 16 illustrates building type for high and average performers. The hypothesis suggested that detached housing would be easier to manage and progressing through row-house to high rise to walk up and scattered housing would be more difficult to manage. These three dimensions of building type became the range values for comparing this variable. High and average performers were similar in their mix of housing types, suggesting little difference on this variable, as the Pearson R and Chi-square results indicated.

Table 15

Number of Bedrooms by Range for High Performing and Average Performing Agencies

Range	High	Average	Total
2-4	20	24	44
	44.4%	41.4%	42.7%
1.5-2	20	23	43
	44.4%	39.7%	41.7%
Fewer than 1.5	5	11	16
	11.1%	19.0%	15.5%
Total	45	58	103
	100%	100%	100%
	Value	Approx. T	Significance
Pearson's R	.076	.096	.446
Chi-square	1.201		.548

Client Control Variables

The next three tables summarize data for client characteristics: family versus elderly occupancy, central city versus non central city location, and range of poverty levels. Table 17 reveals data concerning occupancy of housing, ranging from mostly families to mostly elderly. The hypothesis suggested that agencies with a larger proportion of elderly would be more closely associated with high performers and those with families, average performers. Contrary to the hypothesis, average performers had about five percent more agencies with elderly clients than high performers; however, the percentages for family occupancy were virtually identical and represented a much larger proportion of occupancy than elderly. So the advantage was not great, nor did it exceed

the 10 percent difference threshold, reflected in a non-significant Pearson's R and Chi-square.

Table 16

Building Type by Range for High Performing and Average Performing Agencies

Range	High	Average	Total
Detached	15	23	38
	33.3%	39.7%	36.9%
Row house	8	8	16
	17.8%	13.8%	15.5%
High rise	22	27	49
	48.9%	46.6%	47.6%
Total	45	58	103
	100%	100%	100%
	Value	Approx. T	Significance
Pearson's R	-.047	-.473	.637
Chi-square	.563		.755

Table 18 summarizes results for high and average performers on the basis of location within the geographic area: rural, non-central city, and central city. The hypothesis stated that agencies in rural areas would more likely be high performers than those in central cities. High performers had 51 percent of housing located in rural areas compared to 41 percent for average performers. Additionally, high performers only had 42 percent of their units in central cities compared with 52 percent for average

performers. This difference was right at the 10 percent threshold, suggesting support for the hypothesis; however, Pearson’s R and Chi-square remained insignificant.

Table 17

Range of Occupancy for High Performing and Average Performing Agencies

Range	High	Average	Total
Family	17	22	39
	37.8%	37.9%	37.9%
Family to elderly	24	28	52
	53.3%	48.3%	50.5%
Elderly	4	8	12
	8.9%	13.8%	11.7%
Total	45	58	103
	100%	100%	100%
	Value	Approx. T	Significance
Pearson’s R	.036	.363	.717
Chi-square	.652		.722

The hypothesis regarding poverty suggested that agencies in higher poverty neighborhoods would be associated with average performers, while high performers would be associated with neighborhoods with lower levels of poverty. Table 19 shows that average performers had almost twice the percentage of housing in neighborhoods with the highest levels of poverty as compared to high performers, and about 11 percent fewer units located in lower poverty neighborhoods. This seemed to support the hypothesis, but despite these differences, Pearson’s R and Chi-square remained insignificant.

Table 18

Range of Location for High Performing and Average Performing Agencies

Range	High	Average	Total
Rural	23	24	47
	51.1%	41.4%	45.6%
Non-central city	3	4	7
	6.7%	6.9%	6.8%
Central city	19	30	49
	42.2%	51.7%	47.6%
Total	45	58	103
	100%	100%	100%
	Value	Approx. T	Significance
Pearson's R	.099	.998	.321
Chi-square	1.009		.604

Finally, to test relationships among the control variables, a correlation analysis was conducted, and is reported in Table 20. It appears that several variables are measuring the same underlying properties. There were statistically significant relationships between number of units and location; number of bedrooms and building and occupancy type; occupancy and location; and poverty and number of units, number of bedrooms, occupancy type, and location. From a size perspective, occupancy and number of bedrooms has the strongest relationship with a correlation of .534. This makes sense in that older residents often are housed in efficiency or one-bedroom apartments. Age and building type were unrelated to the other control variables. In general, this allows the use of fewer control variables in predictive models, but with no statistically

significant findings in the cross tabulation analysis, it may not make a difference in predictive power of the model.

Table 19

Range of Poverty for High Performing and Average Performing Agencies

Range	High	Average	Total
Greater than 30%	4	9	13
	8.9%	15.5%	12.6%
20 to 30%	16	23	39
	35.6%	39.7%	37.9%
0 to 20%	25	26	51
	55.6%	44.8%	49.5%
Total	45	58	103
	100%	100%	100%
	Value	Approx. T	Significance
Pearson's R	-1.252	-1.252	.214
Chi-square	1.584		.453

Correlation Analysis of Control Variables with Other Models

This section reports the results of correlation analysis for the control variables related to the performance results. As previously mentioned, the basic performance model results in this study were defined by PHAS scores with high performers achieving 90 or greater and average performers scoring less than 90.

Table 20

Correlation Analysis of Control Variables

	Units	Age	Bedrooms	Building	Occupancy	Location	Poverty
Units	1.00						
Age	.031	1.00					
Bedrooms	.007	.005	1.00				
Building	.110	-.036	-.210*	1.00			
Occupancy	-.025	-.026	.534**	-.184	1.00		
Location	.276**	-.040	.069	.068	.222*	1.00	
Poverty	.324**	.186	.326**	-.048	.207*	.428*	1.00

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

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

There are other ways to break out PHAS scores, and for purposes of the correlation analysis, several others were employed. The core model (90/90) represents HUD's categorization of performance on the basis of the Public Housing Assessment System. Agencies that score 90 or more on PHAS are designated high performers. Anyone scoring lower than 90 points is categorized as average or below average. There were 45 high performers and 58 average and below average performers in the sample used in my study.

A second model, called high-low or 90/80, included the 45 agencies that scored 90 or higher and the ten agencies that scored below 80 (low) on PHAS. This model tests HUD's definition of high performers against HUD's definition of below average performing agencies, with a more extreme standard for non-high performers.

A third model, very high and low or 94/80, allows for testing extremes at both ends of the performance spectrum. In this model, there were 19 very high performers and ten low performers. The final model, very high-average, 94/90, compares the highest performers against all the average agencies. There were 19 very high performers and 58 average performers.

It was hoped that the different populations break outs would allow additional insight into the relationships between performance and the variables of interest. Table 21 shows the strength of linear relationships between the control variables and performance scores for the alternative models.

In addition to the range variables shown in the cross tabulation review, this analysis included actual variable figures, e.g., size includes both range and the actual count of units per agency. The primary finding was simple: there were no significant correlations between any of the control variables and any of the performance combinations, except one. The exception was the high-low (90/80) where range of occupancy (elderly versus family) was negative with a p value of 0.10. This supported the hypothesis that having proportionately higher elderly population was associated with higher PHAS performance.

Table 21

Correlation Coefficient and Statistical Significance of Control Variables and Various Performance Combinations+

Variables	Core 90/90	High/Low 90/80	Very High/Low 94/80	Very High /Average 94/90
Units*	.033	-.036	-.012	.035
	.744	.717	.903	.724
Range of unit size	.024	-.096	-.048	.038
	.806	.333	.633	.704
Age of housing	.078	-.022	-.063	.044
	.431	.822	.524	.659
Age range	-.102	.080	.077	-.080
	.306	.421	.440	.422
Number of bedrooms	.040	.057	.001	.009
	.692	.564	.989	.930
Range of number of beds	.066	-.090	.014	.095
	.506	.365	.891	.342
Building type	-.075	.072	.057	-.064
	.452	.470	.571	.520
Building type range	-.045	.065	.085	-.025
	.652	.516	.393	.799
Occupancy type	-.094	.125	.038	-.104
	.346	.209	.705	.275

+Spearman's rho results are shown; Tau b scores were also computed with similar results.

*First row is correlation coefficient; second row is significance level.

Table 21, (Continued)

Correlation Coefficient and Statistical Significance of Control Variables and Various Performance Combinations+

Variables	Core 90/90	High/Low 90/80	Very High/Low 94/80	Very High /Average 94/90
Range of occupancy*	.028	-.161	-.128	.032
	.781	.103**	.196	.747
Urban non-urban location	-.067	-.020	-.049	-.066
	.503	.840	.623	.509
Range for location	.099	-.007	.026	.092
	.321	.942	.793	.353
Level of poverty	.128	-.048	-.010	.116
	.199	.629	.918	.243
Range for level of poverty	-.121	.068	.038	-.106
	.225	.496	.700	.285

+Spearman's rho results are shown; Tau b scores were also computed with similar results.

*First row is correlation coefficient; second row is significance level.

**Significant at the .10 level

Overall, size, age of housing, bedroom number, building type, geographic location, and poverty levels did not have any statistically significant impacts on performance scores for this data set.

Independent Samples T-tests

This section reports the results of independent samples t-tests for the management subsystem variables detailed in chapter 3. The review covers human resource variables, information technology, managing for results, and finally integration of management systems. The core model (90/90) is described in detail, but other models were also tested

and statistically significant findings from these models are reported. Following the review of t-tests, an examination of the regression model is presented.

Human Resources

High performance for human resource activities are summarized in the bullet statements below. They represent theorized high performance dimensions of the variables: the existence of a formal workforce plan; a lower attrition rate (turnover); faster hire times; faster termination times (for performance); fewer employees in unions; fewer employees contracted out; and fewer classified positions in personnel plan.

Table 22 displays the results of the t-test for each survey question (numbers 5 through 13) for human resource variables. The first column in the table lists the variable, the second column indicates the rows for high and average performance data; this is followed by the number (N) of agencies tested for each level of performance, the mean score, standard deviation (SD), t-ratio, and significance level (Sig) associated with the t-test. It should be noted that IT applications related to human resources are reported in the IT section of this chapter.

As can be seen in Table 22, only one variable was statistically significant: unionization. This result supported the hypothesis related to unionization, because a lower level of unionization was related to higher performance in this data set. When comparing mean scores, one finds that there appears to be a bit of a difference in the two-year attrition variable, with higher performers averaging 10 percent a year compared with average performers 12.5 percent a year; however, this difference did not reach statistical significance. The means for the remaining variables were similar.

Table 22

T-test for the Significance of the Mean Difference between High and Average Performers for Human Resource Characteristics

Human Resource Variables	90/90 Model	N	Mean	SD	t-ratio	Sig
Existence of a workforce plan	High	43	1.40	.50	-.60	.548
	Average	57	1.46	.50	-.60	
Two year average attrition	High	43	10.02	13.76	-.81	.419
	Average	54	12.49	15.65	-.82	
Time to hire	High	44	3.98	.976	1.19	.236
	Average	57	3.74	1.03	1.20	
Time to terminate for performance	High	44	4.27	1.00	1.06	.290
	Average	57	4.04	1.20	1.09	
Percent of employees in unions	High	44	4.57	1.02	1.96	.053*
	Average	56	4.04	1.56	2.06	
Percent of employees contracted out	High	44	4.68	.96	.35	.725
	Average	57	4.61	.96	.35	
Number of classified positions	High	44	3.98	1.56	-.29	.773
	Average	55	4.07	1.68	-.29	

*Significant at the 0.05 level.

Student t-tests were also run for the other models (90/80, 94/80 and 94/90). Only one variable was statistically significant at the 0.10 level; this was the existence of a workforce plan in the 94/80 model where 68 percent of high performers had a workforce plan as compared with 50 percent of low performing agencies. Of course, the number of agencies in both categories was small, 19 for high and 10 for low. It should be noted that

a comparison of survey answers by performance level indicated that overall, high performance dimensions were more closely linked to high performance agencies; yet, the differences between high and average performers rarely exceeded 10 percent, which, according to Johnson (2010), is a clue to possible statistically significant results.

Figure 3 shows the percent difference between high and average scores on human resource variables linked to high performance dimensions. Variables above the 0 line show where the characteristics were associated with high performers and those below the 0 line with average performers. This difference suggests that high performance dimensions of attrition, hire time, termination time, union membership, and contract employees were more often found in high performing agencies (71 percent), while workforce plan and number of classified titles were associated with average performing agencies (29 percent). Further, it shows where the percent differences between high and average performers exceeded the 10 percent threshold. One variable exceeded this threshold, unionization, and it was statistically significant.

Table 23 summarizes each variable, its high and average performance dimension, and which type of agency (high or average) showed an advantage on the variable. Advantage here means that on the high side, the agency exhibited more of the high performance characteristics and on the low side, the agency exhibited fewer of these lower performance characteristics.

The results showed that on ten of the fourteen characteristics (71 percent), high performers had better scores, securing the advantage towards better performance. Average performers had the advantage on four of the characteristics (29 percent). On the basis of the descriptive results, it appeared that human resource variables should exert

some positive influence on agency performance; however, t-test results did not support the trends, as previously noted.

Figure 3

Percent Difference between High and Average Performers on Human Resource Variables



Information Technology

This section reports the results of t-tests for the information technology variables and includes a section detailing each variable. High performance for information technology activities are summarized in the bullet statements below. They represent the theorized high performance dimensions of the variables: access to a geographic information system (GIS); key systems in place and fully meeting agency needs (budget, specialized financial reports, cost accounting, payroll, hiring, human resources management, training management, procurement, work orders, and PHAS performance dashboards); existence of a formal strategic information systems plan; speed (within three

months) of generating the following IT purchasing actions:., written request for proposal, formal competitive bidding, and negotiated competitive bidding; existence of the following on-line tools (e-government): application for housing, waiting list, public access via kiosks, complaint system, and employment application.

Table 23

Advantage Ranking of Human Resource Variables

Variable	Hypothesis	Advantage
Workforce Plan	Yes: higher performance	Average
	No: lower performance	Average
Attrition	Lower: higher performance	High
	Higher: lower performance	High
Hire Speed	Fast: higher performance	High
	Slow lower performance	High
Termination Speed	Fast: higher performance	High
	Slow: lower performance	High
Unions	Low: higher performance	High
	High: lower performance	High
Contract Employees	Low: higher performance	High
	High: lower performance	Average
Classified Titles	Low: higher performance	Average
	High: lower performance	High

Tables 24 displays the results of the t-test for each survey question related to information technology items (14 through 18). In the table the first column lists the

variable, the second column indicates the rows for high and average performance data; this is followed by the number (N) of agencies tested for each level of performance, the mean score, standard deviation (SD), t-ratio, and significance level (Sig) on the basis of the t-test. As can be seen in Table 24, only two variables were statistically significant: fully implemented budgeting system and use of kiosks for public access. These results supported the hypotheses related to this specific system and e-government tool. Other than these two items, there was no support for the remaining IT variables from a statistically significant point of view. It is possible that, between the time the GPP model was researched (about ten years ago) and the time of my study, housing agencies as well as other government organizations have improved their IT capacity. Certainly the rapid pace of improvement in both hardware and software in general would suggest substantial opportunities were available to public organizations to improve IT capacity.

Student t-tests were also run for the other models (90/80, 94/80 and 94/90). For the 90/80 model, the training management system variable was on the cusp of significance with a p level of 0.109. The 94/90 model also had statistically significant findings for the budgeting system ($p = 0.078$) and on-line application for housing ($p = 0.092$). So for research question 2, these results offer only limited support that IT subsystem characteristics increase organizational performance.

Figure 4 shows the percent difference between high and average scores on IT variables (except for e-government tools) linked to high performance dimensions. Variable scores above the 0 line show where the characteristics were associated with high performers and those below the 0 line associated with average performers. With the exception of the GIS variable, all remaining variables were descriptively related to high

Table 24

T-test for the Significance of the Mean Difference between High and Average Performers for Information Technology Systems

Variables	90/90	N	Mean	S.D.	T-ratio	Sig
Existence or access to GIS	High	45	1.40	.495	-1.006	.317
	Average	58	1.50	.504		
Budget	High	45	3.47	.968	1.739	.085*
	Average	58	3.12	1.027		
Financial reports	High	45	3.53	.894	1.449	.150
	Average	58	3.28	.894		
Cost accounting	High	45	3.29	1.141	.907	.367
	Average	58	3.09	1.113		
Payroll	High	44	3.59	.897	1.485	.141
	Average	58	3.29	1.076		
Hiring	High	45	1.96	1.313	.237	.814
	Average	58	1.90	1.209		
Human resources management	High	45	2.07	1.338	-.478	.634
	Average	58	2.19	1.263		
Training management	High	45	1.78	1.241	-.708	.481
	Average	58	1.95	1.191		
Procurement	High	45	3.09	1.258	.087	.931
	Average	58	3.07	1.057		
Work order	High	45	3.60	.809	.216	.830
	Average	58	3.57	.652		
PHAS performance dashboards	High	45	2.69	1.276	.723	.471
	Average	57	2.51	1.227		

*Significant at the 0.10 level.

Table 24, (Continued)

T-test for the Significance of the Mean Difference between High and Average Performers for Information Technology Characteristics

Variables	90/90	N	Mean	SD	T-ratio	Sig
Strategic Information System Plan	High	45	2.18	.747	.299	.766
	Average	58	2.14	.605		
Time for written RFP	High	45	4.64	1.090	-1.07	.915
	Average	57	4.67	1.006		
Time for competitive bid	High	45	4.62	1.114	.571	.570
	Average	57	4.49	1.182		
Time for negotiated bid	High	45	4.60	1.156	.824	.412
	Average	56	4.39	1.330		
On-line application	High	45	1.42	.621	1.044	.299
	Average	58	1.31	.467		
Housing waiting list	High	45	1.18	.387	.304	.762
	Average	58	1.16	.365		
Public kiosks	High	45	1.20	.457	1.844	.068*
	Average	58	1.07	.256		
Complaint system	High	45	1.16	.367	-.226	.821
	Average	58	1.17	.381		
On-line employment application	High	45	1.24	.435	.036	.972
	Average	58	1.24	.432		

*Significant at the 0.10 level.

performers on the high performance characteristic of each variable, as the hypotheses suggested (13 out of 14 variables). There were several instances other than the budgeting system, which was statistically significant, that exceeded the 10 percent difference threshold signaling potential significance as suggested by Johnson (p. 167, 2010). These included systems for financial reporting, cost accounting, payroll, procurement,

dashboards, and negotiated bidding. The likely source of insignificance was either high performers also did poorly on low dimensions of the variables, or there were only a small number of agencies in both high and average performers in the high dimension range of the variable, which would limit the potential for increasing mean scores.

Figure 4

Percent Difference between High and Average Performers on IT Variables

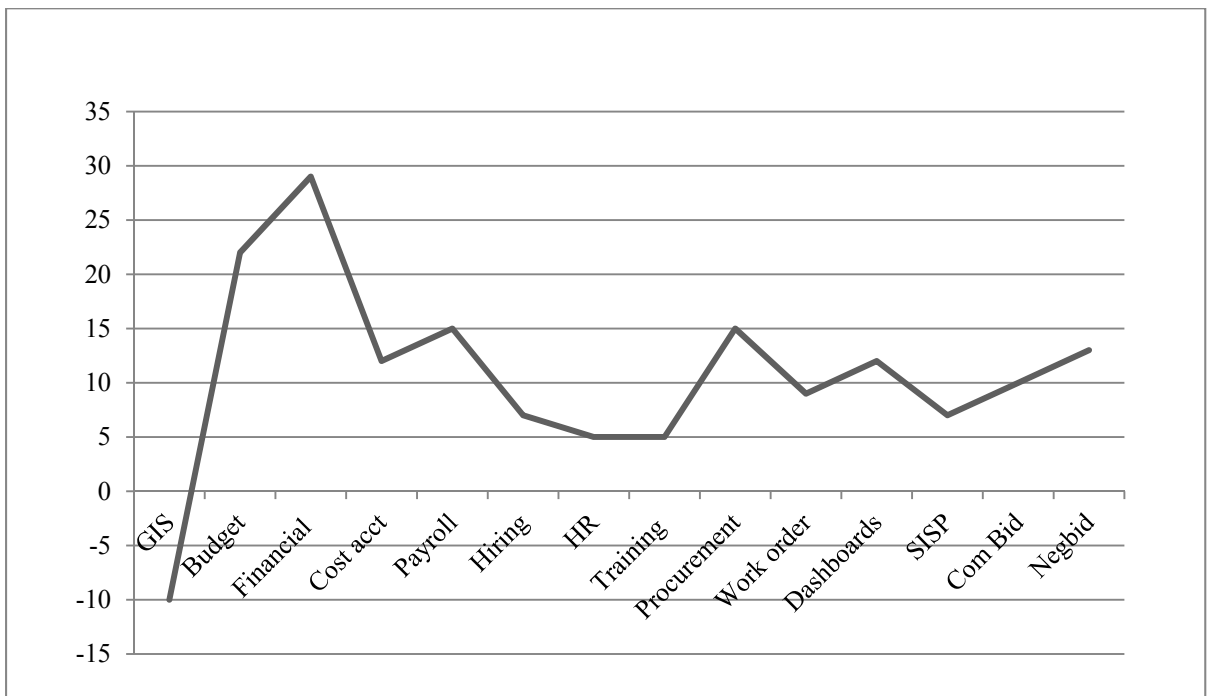


Table 25 summarizes each IT variable, its high and average performance dimension, and which agency (high or average) showed an advantage on the variable. Advantage here means that on the high side, the agency exhibited more of the high characteristics and on the low side, the agency exhibited fewer of these characteristics.

Table 25

Advantage Ranking of Information Technology Variables

Variable	Hypothesis	Advantage
GIS	Yes: higher performance	Average
	No: lower performance	Average
Budget System	Fully in place: higher performance	High
	Not in place: lower performance	High
Financial Reporting	Fully in place: higher performance	High
	Not in place: lower performance	Average
Cost Accounting	Fully in place: higher performance	High
	Not in place: lower performance	Neither
Payroll System	Fully in place: higher performance	High
	Not in place: lower performance	High
Hiring System	Fully in place: higher performance	High
	Not in place: lower performance	Average
HR System	Fully in place: higher performance	High
	Not in place: lower performance	Average
Training System	Fully in place: higher performance	High
	Not in place: lower performance	Average
Procurement System	Fully in place: higher performance	High
	Not in place: lower performance	Average
Work Order System	Fully in place: higher performance	High
	Not in place: lower performance	Average
Dashboards	Fully in place: higher performance	High
	Not in place: lower performance	High
Strategic Information System	Fully in place: higher performance	High
	Not in place: lower performance	High

The results show that on 15 out of 24 of the characteristics (63 percent), high performers had better scores, securing the advantage towards better performance. Average performers had the advantage on eight of the characteristics (33 percent), and one was a tie. On the basis of the descriptive results, high performers scored better on these information technology variables than average performers. On the other hand, some of the results were confusing. For example, on four variables, high performers had the best and worst characteristics. This mix likely led to a few insignificant findings for t-tests.

Figure 5 completes the view of information technology with a look at e-government services. On three of these variables (60 percent), high performers scored better on the high performance dimension. Average scored better on one, and one was a tie. Table 26 identifies who had the advantage on these items. High performers had the advantage on six characteristics, average performers on two, and two were essentially ties. Overall, it appeared that high performers have a slight advantage on e-government use.

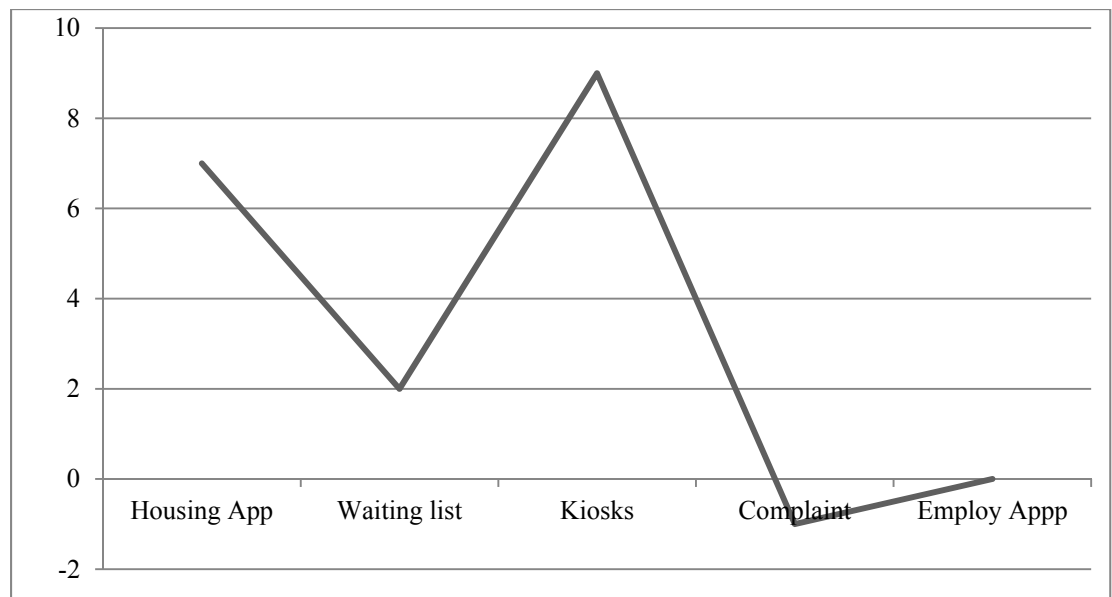
Managing for Results

Performance variables for managing for results are summarized in the bullet statements below. They represent the theorized high performance dimensions of the variables: existence of a strategic plan; involvement of key players at the very often level (executive director, senior staff, budget office, department/division directors, line staff, public housing residents, interest groups, citizens, and consultants); existence of a IT performance information system plan with the following elements: vision statement, statement of values, descriptive goals, quantified performance information, and targets;

timeliness (monthly) of performance reports to the following: agency wide, department division directors, budget, senior staff, and the public; existence of a business plan; frequency (monthly or sooner) of senior staff review of PHAS; and winner of a Government Finance Officers Award (GFOA) excellence in financial reporting award.

Figure 5

Percent Difference between High and Average Performers on E-Government Variables



So few agencies applied for the award that this item was dropped from the statistical analysis. The absence of agencies applying for a GFOA award suggests several possibilities. One possibility is that housing agency staff, especially finance members, may not consider themselves government employees in the sense that city, county, and perhaps state employees see themselves. Many housing agencies are authorities, reporting to appointed boards, not elected officials. Hence, the finance staff members' professional affiliations may not reside with organizations like GFOA. A second possibility is that

finance managers in housing agencies (as well as their executive directors) have chosen not to submit their financial reports for the GFOA award, to minimize outside review of their financial conditions. Certainly HUD is aware of agencies' finances, since HUD conducts annual audits, but other stakeholders may not be fully informed.

Table 26

Advantage Ranking for E-Government Variables

Variable	Hypothesis	Advantage
Housing Application	Yes: higher performance	High
	No: lower performance	High
Waiting List	Yes: higher performance	High
	No: lower performance	High
Public Kiosks	Yes: higher performance	High
	No: lower performance	High
Complaint System	Yes: higher performance	Average
	No: lower performance	Average
Employment Application	Yes: higher performance	Neither
	No: lower performance	Neither

In a examination of financial reporting in large Florida cities, specifically Management and Disclosure Analysis (GASB Statement 34) of financial reporting, Guo, Fink, and Frank (2010) found cities who provided minimal information in the first year of the study continued to provide minimal information in the third year, even though there were several major economic and property tax changes in Florida during the same period (p. 64). Those cities that tended to disclose more in the first year paid “at least minimal

attention to changes in the socioeconomic conditions in their community and to potential legislative drivers of their future revenue streams” (p. 64). Some cities were simply reluctant to be more transparent in their disclosure statements.

Table 27 displays the results of t-tests for each survey question (19 through 25). In the table the first column lists the variable, the second column indicates the rows for high and average performance data; this is followed by the number (N) of agencies tested for each level of performance, the mean score, standard deviation (SD), t-ratio, and significance level (Sig) on the basis of the t-test.

As can be seen in Table 27, only one variable was statistically significant: involvement of the budget office in developing a strategic plan (at the 0.10 level). There were a couple of others that approached the 0.10 level, but did not reach it. These were statement of values ($p = 0.148$) and quantified performance information ($p = 0.169$) in the IT performance information system plan and timeliness of reporting to the budget office ($p = 0.154$). Overall, the core model did not support the hypotheses related to managing for results and organizational performance.

Student t-tests were also run for the other models (90/80, 94/80 and 94/90). In the 90/80 model, timeliness of reporting at the division level reached statistical significance at 0.10 level. In the 94/90 model, involvement of senior staff (.103) and budget office (.060) in developing the strategic plan were statistically significant at the 0.10 level.

Table 27

T-test for the Significance of the Mean Difference between High and Average Performers for Managing for Results Characteristics

Variables	90/90	N	M	S. D.	T-ratio	Sig
Existence of a strategic plan	High	45	1.49	.506	.502	.617
	Average	57	1.44	.501	.501	
Involvement of:						
Executive director	High	45	2.64	2.506	1.023	.309
	Average	58	2.14	2.481	1.022	
Senior staff	High	45	2.60	2.472	1.238	.218
	Average	58	2.00	2.413	1.235	
Budget office	High	45	2.53	2.427	1.705	.091*
	Average	58	1.74	2.268	1.690	
Division directors	High	45	2.44	2.436	1.171	.245
	Average	57	1.89	2.289	1.162	
Line staff	High	45	1.80	1.902	.887	.377
	Average	58	1.47	1.894	.887	
Residents	High	45	1.78	1.731	.660	.511
	Average	58	1.53	1.949	.670	
Interest groups	High	45	1.36	1.433	.786	.434
	Average	58	1.12	1.557	.794	
Citizens	High	45	1.36	1.448	.905	.368
	Average	58	1.09	1.537	.911	
Consultants	High	45	1.33	1.537	.642	.522
	Average	58	1.14	1.527	.642	

*Significant at the 0.10 level

Table 27, (Continued)

T-test for the Significance of the Mean Difference between High and Average Performers for Managing for Results Characteristics

Variables	90/90	N	M	S D	t-ratio	Sig
Existence of an IT performance information system plan	High	45	1.24	.435	1.132	.260
	Average	58	1.16	.365	1.108	
Vision statement	High	45	.42	.812	1.169	.245
	Average	58	.26	.609	1.128	
Statement of values	High	45	.44	.841	1.457	.148
	Average	58	.24	.572	1.390	
Descriptive goals	High	45	.44	.841	1.153	.252
	Average	58	.28	.643	1.115	
Quantified performance information	High	45	.47	.842	1.386	.169
	Average	57	.26	.642	1.342	
Targets	High	45	.38	.747	.219	.827
	Average	58	.34	.762	.220	
Agency wide	High	45	2.84	1.413	-.423	.673
	Average	58	2.97	1.463	-.425	
Division director	High	45	3.31	1.395	-1.069	.288
	Average	58	3.60	1.363	-1.065	
Budget office	High	45	3.24	1.401	-1.435	.154
	Average	58	3.60	1.138	-1.398	
Senior staff	High	45	3.38	1.628	-.697	.487
	Average	58	3.59	1.402	-.684	
Public	High	45	1.87	1.486	.133	.895
	Average	58	1.83	1.477	.133	
Existence of a business plan	High	45	1.38	.490	.096	.924
	Average	57	1.37	.487	.096	
Frequency of senior staff performance review	High	45	3.31	1.145	.145	.885
	Average	58	3.28	1.281	.147	

Figure 6 shows the percent difference between high and average scores on MFR strategic planning (SP) variables linked to high performance dimensions. Variables above the 0 line show where the characteristics were associated with high performers and those below the 0 line with average performers. As can be seen, high performers scored much higher for internal stakeholder involvement, and average performers scored higher on external stakeholder involvement.

Figure 6

Percent Difference between High and Average Performers on MFR SP Variables

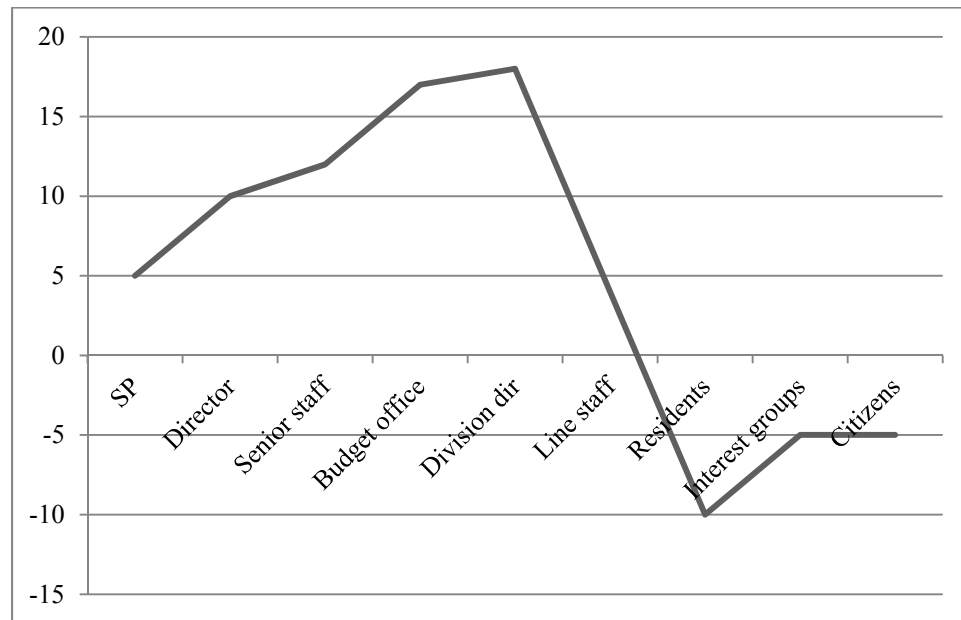


Table 28 identifies who had the advantage on these items. On 12 of these items, high performers had higher percentage of better scores than average performers (80 percent). Average performers had better scores on three of the characteristics (20

percent). It appears that high performers had the advantage over average performers on most MFR variables.

Table 28

Advantage Ranking of Strategic Planning Results Variables (MFR)

Variable	Hypothesis for High Performance	Advantage
Strategic Plan Involvement	Yes	High
Director	Very High	High
Senior Staff	Very High	High
Div Director	Very High	High
Line Residents	Very High	High
Interest Groups	Very High	Average
Citizens	Very High	Average
Consultants	Very High	High
IT Performance	Very High	High
Vision	Yes	High
Values	Yes	High
Goals	Yes	High
Data	Yes	High
Target	Yes	High

Figure 7 shows the percent difference between high and average scores on MFR IT performance plan variables linked to high performance dimensions and the advantage explanation is found in Table 29. Again, high performers had a small edge over average performers regarding better scores on these variables.

Figure 7

Percent Difference between High and Average Performers on IT Performance Plan

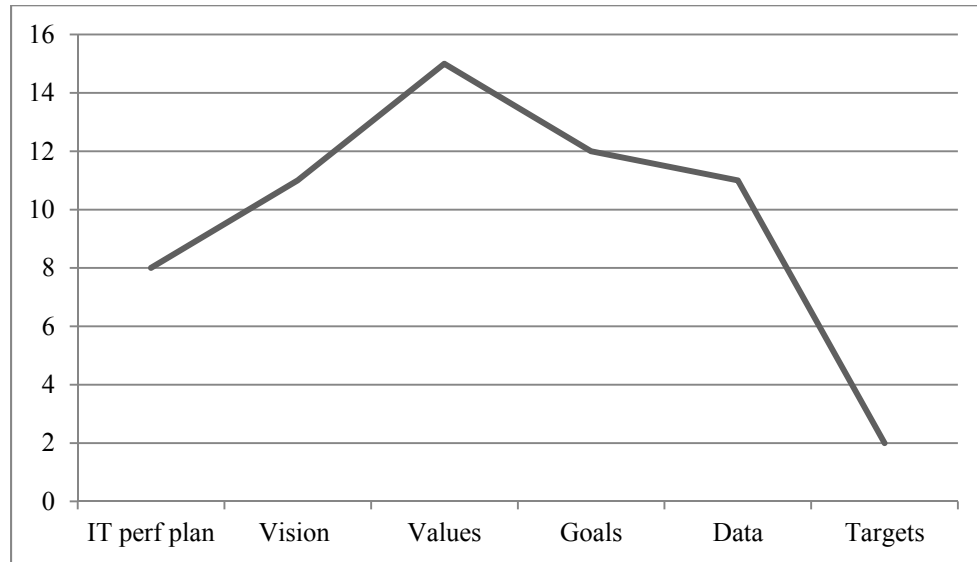


Table 29

Advantage Ranking of Other Managing for Results Variables

Variable	Hypothesis	Advantage
Timeliness of Reporting	Quarterly or better: higher performance	Neither
	Less than quarterly: lower performance	Average
Business Plan	Yes: higher performer	Neither
PHAS Review	More timely: higher performance	High
	Less timely: lower performance	High

Integration of Management Systems

The final segment of the performance model assessed through t-tests was integration of various management systems into the administrative infrastructure of the

organization. This variable is a composite of four previously reported responses. In essence, integration is a surrogate in some sense for leadership as well for the existence of a certain connecting infrastructure that forms a significant part of management capacity. The hypotheses for this section suggested the high performance dimensions would have a formal workforce plan, IT performance information system plan, strategic plan, and business plan.

Table 30 provides a summary of the t-tests for these four variables. As can be seen from this table, none of the variables achieved statistical significance. Thus, the hypotheses for integration of management systems were not supported. Other performance models were tested as well. In only one, the 94/90 model, which reduces the number of agencies in the high performer category, the existence of a workforce plan was positive and significant with p value of .087.

Figure 8 shows the select results for integration variables. High performers had the edge on average performers on all but the business plan variable, suggesting, as with the other model variables, that high performers appeared to have a stronger hold on the high performance dimensions of the model's hypotheses, but not sufficiently high to reach statistical significance in most cases.

Each of the four research questions included a test for the predictive power of the GPP model. The results of the predictive analysis are presented next. Of course, with few statistically significant results from the correlation and t-test analyses, one might guess that using this model for predictive purposes for this data set will be problematic.

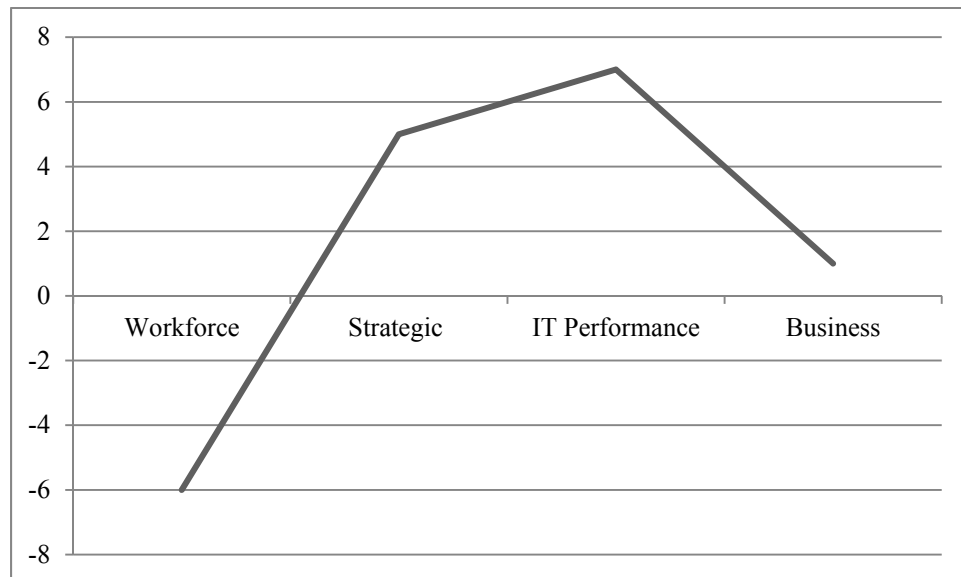
Table 30

T-test for the Significance of the Mean Difference between High and Average Performers for Integration of Management Systems Characteristics

Variables	90/90	N	Mean	S. D.	t-ratio	Significance
Workforce plan	High	43	1.40	.495	-.603	.548
	Average	57	1.46	.503	-.604	.547
Strategic plan	High	45	1.49	.506	.502	.617
	Average	57	1.44	.501	.501	.618
IT performance information system plan	High	45	1.24	.435	1.132	.260
	Average	58	1.16	.365	1.108	.271
Business plan	High	45	1.38	.490	.096	.924
	Average	57	1.37	.487	.096	.924

Figure 8

Percent Difference between High and Average Performers on Integration and Alignment Variables

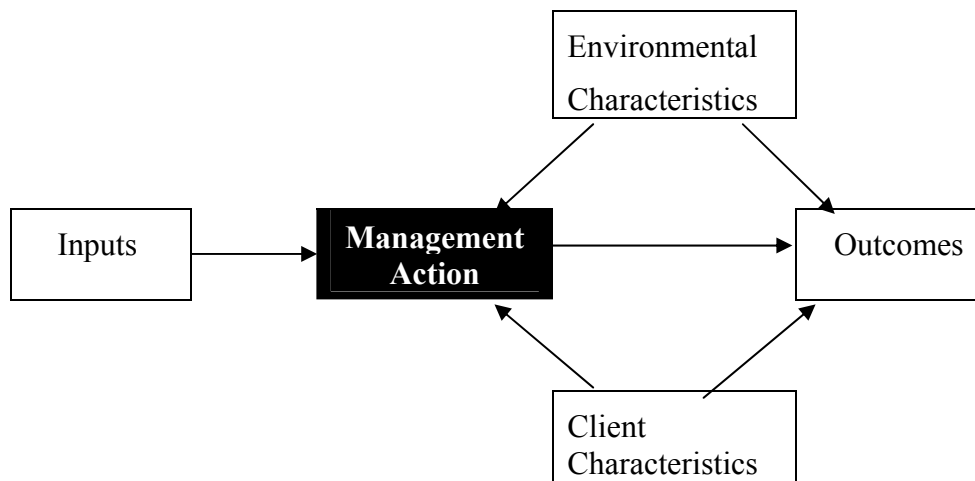


Regression Analysis

This section reports the findings from regression analysis of the GPP model represented by the survey results in this study. The basic model is presented in Figure 9 (already seen in Figure 1). On the basis of the correlation and t-test analyses, a limited number of variables have been selected for the regression test. These are shown in Table 31.

Figure 9

GPP Performance Model



In addition, since past performance is usually considered a sure sign of current performance, a correlation analysis was computed between the prior year's PHAS score and the current year score. The result was a correlation coefficient of 0.79 with a p value of less than 0.001. Obviously, past performance matters for current (and future) performance.

The first regression model tested was described in Table 31 with details reported in Table 32. The R square was .205; the adjusted R² .079, F(13) = 1.62, p < .10). Approximately 8 percent of the variation in PHAS scores was explained by this model. Consistent with the correlation and t-tests, this result was weak, barely suggestive of a link between these activities and performance. Only two of the variables in the regression achieved statistical significance: level of unionization and timeliness of performance reporting to the agency's budget office. A limitation of the tested model is that it consisted only of support functions, not delivery of direct services to clients. Perhaps being able to predict eight percent of the variance in PHAS scores on the basis of human resource activity, information technology infrastructure, linking mechanism of managing for results, and integration and alignment is about as good as one might expect from support functions.

On the other hand, over 90 percent of the variance in PHAS scores remained unexplained. Clearly, factors other than support services, the characteristics measured in this study, had a much greater impact on performance scores. The final chapter addresses the issue of what might be missing from the model as well as the modest correlations resulting from the t-tests.

The results of my study are consistent with other quantitative tests of the GPP model, such as Donahue, et al. (2000), which found descriptive evidence but not statistical confirmation that the HRM part of the model led to better outcomes, and Jennings and Ewalt (2003), which also found only limited support using GPP grades as independent variables.

Table 31

Predictive Model Elements

Outcome	Environmental	Client	M ₁₋₄
PHAS	<ul style="list-style-type: none"> • Building age • Occupancy 	<ul style="list-style-type: none"> • Neighborhood poverty rate 	<p>M₁—Human Resources</p> <ul style="list-style-type: none"> • Workforce plan • Unionization <p>M₂—Information Technology</p> <ul style="list-style-type: none"> • Integration of some IT systems • Select E-government tools <p>M₃—Managing for Results</p> <ul style="list-style-type: none"> • Involvement in its development • Elements in IT performance system • Timeliness of reporting performance information <p>M₄—Integration of Management Systems</p> <ul style="list-style-type: none"> • Workforce plan

When prior year PHAS scores were added to this model, the adjusted R² increased to 0.36, which suggests that path dependence, prior history, is far more influential on predicting current performance than the management capacity variables used in the first regression run (Pfeffer, 1997, p. 45). The influence of past performance is also consistent results of the Texas school studies, where prior performance was a major predictor of current performance. It makes sense that an organization which achieves a high level of

performance would work hard to maintain its high performance status. Other performance models were run, but none exceeded the R^2 of the first model. The final chapter addresses both the relatively strong descriptive results but meager statistically significant support for the tested model.

Table 32
Regression Results for Model

Variables	Unstand Coeff		Stand.Coeff		Sig.
	B	Std. Error	Beta	t	
(Constant)	1.782	.428		4.159	.000
Age of housing	.007	.025	.031	.282	.779
Occupancy type	-.040	.037	-.109	-1.057	.293
Level of poverty	.037	.030	.131	1.231	.222
Existence of a workforce plan	.065	.109	.064	.597	.552
Percent of employees in unions	-.067	.040	-.180	-1.704	.092*
Budget system	-.090	.069	-.185	-1.309	.194
Financial reports	.059	.082	.108	.717	.476
Payroll	-.053	.062	-.102	-.847	.399
Public kiosks	-.172	.143	-.129	-1.204	.232
Involvement of budget office	-.031	.024	-.146	-1.285	.202
Statement of values	-.161	.201	-.221	-.802	.425
Quantified performance information	.117	.184	.173	.633	.529
Timeliness of reporting budget office	.088	.041	.226	2.130	.036**

*Significant at the .01 level

**Significant at the .05 level

Summary of Data Analysis

This section summarizes the results of the preceding data analysis. Table 33 includes the variables that were statically significant for all models tested. Note that the 94/80 model (very high and low) had no statistically significant findings.

The first research question asked if high performing housing agencies differed significantly from average performers on human resource criteria. There were seven primary variables tested. Two reached statistical significance in the expected direction: unionization and the existence of a workforce plan (in the 90/80 model). Thus, fewer than 30 percent of the HR variables supported this hypothesis. With over 70 percent of these variables being insignificant, the central conclusion is that the answer to the first question is, generally, no: human resources management did not increase organizational performance.

While unionization certainly is a management challenge, the model did not contain specific testable characteristics or behaviors for this variable other than the percent of employees in unions. Further, in the core model, average performers had a greater percentage with workforce plans than high performers; it was only in the high/low model where high performers did better on this variable. On the other hand, the descriptive results where the high performance dimensions were displayed visually (Figure 3), high performers clearly showed an advantage, with better survey response scores about 71 percent of the time. This tendency is suggestive, not definitive, that high HR capacity may contribute to better organizational performance. While the GPP model and research note that the HR functions ensure that the right people get hired at the right time due to having the right information available (workforce plan), neither the GPP

research nor my study addressed the characteristics of public employees. A workforce plan and timely hiring do not necessarily lead to hiring employees geared to high performance.

Table 33

Summary of Variables with a P Level of 0.1 or Less

Variable	90/90	90/80	94/90	94/80
<u>Control</u>				
Occupancy Range		.103		
<u>Human Resources</u>				
Unionization	.053			
Workforce Plan			.087	
<u>IT</u>				
Budget System	.085		.078	
Training		.109		
On-line Application			.092	
Kiosks	.068			
<u>MFR</u>				
Involvement Senior Staff			.103	
Budget Office	.091		.060	
Reporting Division Director		.019		
Reporting Budget		.041		
<u>Integration</u>				
Workforce Plan			.087	

Research on the applicant pool for the public sector suggests government work is not highly desirable or recommended from older people, parents and high school teachers (Henry, 2010, p. 206). Only 5 percent of top students consider government as the

most preferred employer (p. 207). Studies also show that public employees choose public service not for pay but to make a difference and because of security (pp. 90-91). The question is: do these characteristics help or restrain public employees from reaching high performance levels?

The second question asked if high performing housing agencies differed significantly from average performers on information technology criteria. There were five key variables, several with sub-variables in this subsystem. The following had no significant findings: access to a GIS, existence of a strategic information systems plan, and speed of IT purchasing. One out of ten application systems was statistically significant: budgeting. Budgeting software is a critical system in public agencies; so this is an important finding. Two e-government tools were also statistically significant: on-line application for housing and use of public kiosks. Because of the importance of budgeting and the two e-government tools, the answer to the research question suggests that there is some impact on performance for higher IT management capacity. Like HRM, descriptive results, where the high performance dimensions of IT were displayed visually (Figures 4 and 5), high performers clearly showed an advantage, with better scores about 62 percent of the time. This trend is suggestive, not definitive, that high IT capacity may contribute to better organizational performance.

Question three asked if high performing housing agencies differed significantly from average performers on managing for results criteria. There were six key variables, several with sub-variables in this subsystem. There were no statistically significant results for the existence of a strategic plan, IT performance information system plan, or business plan. There were four sub-variables that reached statistical significance: involvement of

the budget office and senior staff in developing the strategic plan and timeliness of reporting performance information to the budget office and division directors. Because of the importance of budgeting, the answer to the research question suggests that there is some impact on performance for higher MFR capacity. Like descriptive result for the other subsystems, where the high performance dimensions of MFR were displayed visually (Figures 6 and 7), high performers clearly showed an advantage, with better scores about 70 percent of the time. This result is still just suggestive, not definitive, that high MFR capacity may contribute to better organizational performance.

The fourth research question asked if high performing housing agencies differed significantly from average performers on integration and alignment of management systems criteria. There were four variables tested here, and only one reached statistical significance (in the 94/90 model): existence of a workforce plan. With 75 percent of the variables not-significant, the answer to this question suggests Integration does not increase organizational performance. On the other hand, descriptive results, where the high performance dimensions of Integration were displayed visually (Figure 8), high performers clearly showed an advantage, with better scores about 75 percent of the time. This result is suggestive, but not definitive, that high MFR capacity may contribute to better organizational performance.

Finally, questions five and six asked if control variables affected organizational performance. One out of seven was statistically significant in the 90/80 model. This variable was occupancy type (elderly versus family), where having more elderly clients was associated with higher performance. With 85 percent of the variables insignificant,

the answer to this question strongly suggests that control variables in this data set did not influence performance one way or another.

As to the predictive power of the model, only 8 percent of the variance in performance scores was explained. With prior performance results included in the model, the explanatory power increased to 36 percent, giving credence to the past as marking current performance and a harbinger of future performance. In general the model was not particularly useful as a predictor of performance in public housing agencies.

Still, the examination of each variable's survey response, categorized by high and average performers, found a reasonably strong advantage for high performers from a percent difference perspective. These results hint at the potential value of the management capacity model. The final chapter in this study addresses more fully these mixed results.

CHAPTER V

SUMMARY, DISCUSSION AND RECOMMENDATIONS

This study examined whether or not management capacity increased organizational performance. The specific research problem analyzed was whether significant differences existed between high and average performing public housing agencies on select criteria identified in the GPP management capacity model and whether this model could predict outcome performance measures in a statistically significant manner, while controlling for exogenous influences. Descriptive results of survey responses generally showed high performing agencies with better scores on most high performance dimensions of individual criteria, indicating a propensity towards supporting the GPP model; however, quantitative data analysis found limited statistically significant differences between high and average performers, including control variables, and limited predictive power of the model.

This chapter begins with a summary of the study and its results. It continues with a discussion of key findings and their implications for practitioners and for future research. It concludes with a few thoughts on management and performance, and offers several recommendations for training that help focus attention on improving system functioning, which in turn should improve operational performance.

Summary

As the literature review in chapter 2 summarized, since the 1990s, scholars have paid special attention to theory, research, and practice of public management under the assumption that effective management is one of the primary means for achieving superior performance. To some extent, this renewed attention to management was influenced by

popular business writings of the 1980s and 1990s (Peters and Waterman, 1982; Hammer and Champy, 1993) as well as the reinventing literature of the 1990s (Osborne and Gaebler, 1992; Barzelay, 1992). A number of cases but limited quantitative research studies have been published showing that management matters in the performance of public organizations (Lynn, 1996). Several researchers strongly encouraged the use of quantitative tools to test management in its various and complex forms (O'Toole and Meier, 1999; Lynn, Heinrich, and Hill, 2000). This study followed the recommendations of these scholars by using quantitative methods to test the special case of management capacity's impact on organizational performance.

Data analysis revealed two levels of results. First, at the descriptive level, high performing agencies scored better on high performing dimensions of GPP model characteristics 76 percent of the time. Second, quantitative tests of the model showed only minimal support linking the model to outcome measures of housing agencies. Table 34 lists statistically significant and insignificant results by model characteristics on the basis of t-tests and correlation analysis.

In the predictive model, unionization and timeliness of reporting of performance information to the budget office were positively related to performance; no other model variables were significant in the regression. Clearly, there were many more insignificant findings among the elements of the model than significant findings. The meaning of these results will be discussed in the next section of this chapter.

Table 34

Summary of Quantitative Findings Using all Models

Characteristics	Significant	Insignificant
Control	Occupancy (elderly/positive)	Size Age Number of bedrooms Building type Location Level of poverty
Human Resources	Unionization (more/negative) Existence of a workforce plan	Attrition rate Faster hire times Faster termination times Percent of contract employees Number of classified titles
Information Technology	Budgeting system Training application On-line housing application Public kiosks	GIS Specialized financial reports Cost accounting Payroll Hiring HR management Procurement Work order PHAS dashboards Existence of a strategic information systems plan Speed of IT purchasing Waiting list Compliant system Employment application
Managing for Results	Involvement of senior staff and budget office in developing strategic plan Timely performance reporting to the budget office and division directors	Strategic plan Involvement of executive director, senior staff, line staff, residents, interest groups, citizens and consultants in develop of plan IT performance plan Timeliness of reporting to agency, division directors, senior staff, and the public
Integration	Existence of a workforce plan	Strategic plan IT performance plan Business plan

A brief discussion of the descriptive results follows by elements of the model tested in this study. This discussion is necessary to set the stage for interpreting the model as it relates to this study. The interpretation addresses three questions: Why was there only weak support for the model? Is high management capacity necessary but not sufficient for increasing performance of public organizations? What can practitioners do to enhance the impact of support services on organizational performance?

Control Variables

In analyzing each control variable in the cross tabulation, the study found two contradictory trends: high performers matched high performance dimensions of size (number of units), property age, location, and neighborhood poverty—all consistent with research hypotheses; average agencies had better responses on high performance dimensions on number of bedrooms, elderly occupancy, and building type. Overall, however, the core conclusion was that, contrary to expectations, environmental and client variables were not a major influence, one way or another, on performance of housing agencies, except for elderly occupancy in the 90/80 model. These overall results suggest that performance of public housing agencies depends more specifically on actions of managers and line staff (and perhaps residents as co-producers), not outside factors.

Human Resources

For the primary performance model (90/90), the differences in survey results related to the high performance dimension of each variable's hypothesis showed high performers with lower attrition rates, faster hire and termination times, and fewer contract employees (70 percent of the variables). Average performers had higher percentage of agencies with a workforce plan (which was reversed in the 94/90 model) and fewer

classified positions (30 percent), contrary to the hypotheses. Overall the conclusion for this data set was that unionization and existence of a workforce plan were the only human resource variables to show a statistically significant impact in the theorized direction on the performance of housing agencies, but descriptive results suggested a trend towards supporting the model's influence on performance. In general, the impact of unionization is thought to reduce managerial discretion and flexibility, which constrains managers from achieving higher performance (Donahue, et al., 2000). This study appears to support that contention.

Missing from this analysis was any direct evaluation of the quality of support, line, and management staff. Perhaps performance is more closely linked to the characteristics of staff than characteristics of staff work. Management capacity systems matter, but employees matter as well. Maybe a more appropriate question is: what matters more for performance--people or management subsystems?

Information Technology

With the exception of GIS, on-line complaint, and employee application systems, the actual survey percent differences on the high dimensions of each variable and subsets favored high performing agencies. So, while only a couple subsets of the five IT variables were statistically significant, descriptive results clearly supported the trend linking high performing characteristics with high performing agencies. As compared to the HR subsystem, it appears that the influence of the IT subsystem impact was slightly greater. Certainly, compared to unionization, the statistically significant variables in this subsystem appear more amenable to management control.

Managing for Results

There were interesting results on the survey related to those involved in developing a strategic plan. High performers had better survey scores on involvement of the director, senior staff, budget office, division directors, and line staff—all internal to the agency. Average performers had better scores on involvement of residents, interest groups, and citizens—all external to the agency. Since only involvement of the budget office and senior staff were statistically significant, one might conclude it was more important for internal staff to be active in developing the strategic plan than for external stakeholders (at least as far as achieving higher PHAS scores), which appears contradictory to general advice given on strategic planning (Bryson, 1995). Perhaps this means internal stakeholders were more focused on HUD's performance requirements than external stakeholders, and more likely to emphasize responding to the elements of PHAS.

Regarding the strategic information system performance plan and timelines of PHAS review, all high performing dimensions on the survey responses belonged to high performing agencies. Neither the variable on timeliness of reporting performance information nor the existence of a business plan exhibited a preference for high or average performers in the t-tests, but timeliness of performance reporting to the budget office was significant in the regression model at the .05 level.

Overall, the conclusion regarding the subsystem for managing for results is that it has minimal impact on housing agency performance with this data set. Yet, descriptive data revealed a trend in the direction of supporting the model. It also suggested that agency budget offices were key players in the planning and reporting arenas.

Integration

In responses to these items on the survey, high performing agencies had higher scores on the existence of a strategic plan and IT performance plan with average performers having a better score on the workforce plan. Both high and average performers had similar scores on the existence of a business plan. As with other elements of the model from which these items were drawn, there was limited support for the GPP model from a statistically significant point of view. On the other hand, descriptive data clearly show a modest trend linking the high dimensions of several of these variables with high performing agencies. Perhaps the absence of statistically significant results in this lever of high performance suggests that leadership may play a more prominent role in linking capacity to performance. The lack of leadership (assuming it takes leadership to enforce integration and alignment) may provide some insight into the overall weak results of the quantitative testing.

Discussion

The analysis of management capacity's ability to increase the performance of public housing agencies, including control variables, leads to the following conclusions:

1. Past performance was the strongest predictor of present performance
2. Unionization was a drag on performance
3. Budget related characteristics (application system, involvement in the strategic plan, and timeliness of performance reporting) mattered more for high performance than any other factors in the GPP model
4. Planning documents overall did not seem to affect performance one way or another

5. Environmental and client variables did not affect performance one way or another with the exception of elderly occupancy in the 90/80 model
6. There were more insignificant findings for each element of the model than there were significant findings
7. Every element of the model had at least one statistically significant variable
8. Descriptive results seem to support the model for about 76 percent of the model's characteristics
9. The lack of statistically significant results for integration and alignment suggests a lack of leadership may have been the driving factor in the overall weak results of this study

Interpretation

This study provided at best weak support for the GPP model. While statistically modest, there was some quantitative but greater descriptive support that management capacity increased performance of public housing agencies. A question raised by this study was why was there only weak support for the model? There are several possible answers to this question.

First, as acknowledged in the GPP work, high capacity sets the stage for better performance; it does not guarantee better performance (Ingraham, et al. 2003). In other words, management capacity is perhaps necessary but not sufficient for achieving superior results. This helps explain the preponderance of high performers with greater percent scores than average performers on the high dimensions of most subsystem variables yet with limited support from statistical tests. On the other hand, it could also

mean that average performers may have adopted a number of best practice characteristics identified in the GPP model but were missing something else that led to higher PHAS scores. If average performers have adopted high performance management subsystem behaviors, then one might ask: is it the system or the people that matter when it comes to performance? Obviously with model variables and past performance only explaining 36 percent of the variance in PHAS scores, there is something else driving performance. The something else is likely direct service provision, and as has already been suggested, a lack of leadership.

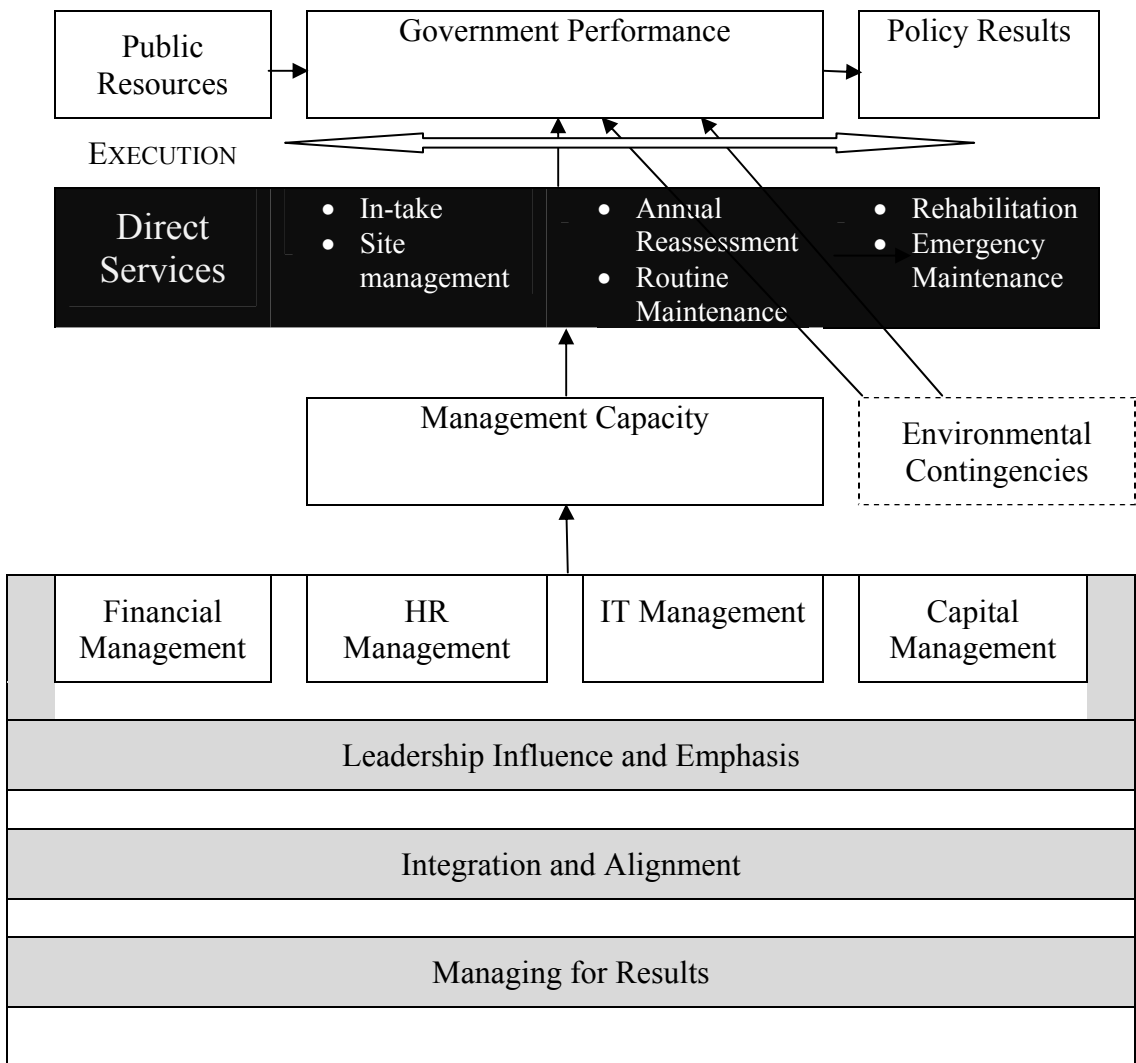
The GPP model is incomplete in regards to the linkage between government activity and outcomes. Visually the model has been depicted as shown in Figure 10 (Ingraham, et al. 2003, p. 16), except for one important addition, which will be discussed shortly. Integration, managing for results, and leadership form the foundation for the management subsystems. The four subsystems have been called the black box of management. The capacity of these subsystems and the three foundation elements lead to high performance. Absent from the original picture was direct service provision, the link between the work of management capacity and the outputs and ultimately outcomes of the production function of government. This element has also been called execution--the business term for implementation (Bossidy and Charan, 2002).

The new element in Figure 10, shown in black, represents direct service provision for housing agencies. The functions in the bullet statements, acted upon by people within the organization contribute to performance in a more direct way than management capacity subsystems, which are support services. Bossidy and Charon define execution as “the missing link...the main reason companies fall short of their promises...the way to

link the three core processes of any business—the people process, the strategy, and the operating plan...the discipline of getting things done” (p. i).

Figure 10

Modified Performance Model



The GPP model includes these core processes, but virtually by definition, does not address the steps necessary to get things done because those steps are the action part of a direct service operating plan. In many ways the GPP model is the contemporary version of POSDCORB—general management functions. The model does not address tasks, functions, and performance of direct service provision, which have their own management challenges. So high subsystem capacity helps set the stage for superior performance, but direct service functions deliver the goods.

The answer to the second question: is high management capacity necessary but not sufficient for increasing performance of public organizations, cannot be clearly answered on the basis of the overall results of this study. That is, it is possible, on the basis of the statistical results of this study, that high management capacity is not necessary in order to achieve high performance. Rather, high outcome performance may be more dependent on how direct service delivery is accomplished.

Certainly, there were high performers that did not score well on some model characteristics and average performers that scored well. On the other hand, there were key variables that did make a difference in performance and were mostly related to high performers, and these were important parts of the model. These included several areas where budget function characteristics were included in the model. There is no doubt that budgeting is a critical support function in government. The other variable that showed a major impact on performance was unionization.

In addition, the discussion of the descriptive findings where high performance characteristics were associated with agencies with high PHAS scores suggests that support services have some positive impact on performance. A central question for

practitioners becomes how to balance the needs of support services and direct delivery functions. Moreover, to complete the GPP model, it should be tested with direct service deliver characteristics to get a more complete picture of what impacts organizational performance.

Another reason the model was not that powerful may be because the model relies rather significantly on planning documents. There are workforce plans, strategic information systems plans, strategic plans, and business plans: one for each subsystem, two for managing for results, and all four for integration and alignment. Following Bossidy and Charon (2002) as well as Mintzberg (1994), current and classic reviews of strategic and other planning, the mere existence of plan is not enough to guarantee high performance. While the GPP engaged in document review, this study did not. It is possible that some of the plans reported by housing agencies were not particularly well done or actively used. They may have existed primarily for public perception, not action. With no way to evaluate their merit, which would require digging deep into operational areas, this study perhaps missed an opportunity to assess their importance as part of subsystems or levers of high performance.

Additionally, perhaps PHAS scores are not sufficiently restrictive or refined to separate high and average performers. Recall from data in Table 6 that about 44 percent of the population of housing agencies over 250 units in size achieved high performer status with PHAS scores 90 or higher. Even when more restrictive models were tested (using 94 as a cutoff point for high performance and 80 or lower for low performance), only a few additional variables reached statistical significance as the hypotheses suggested. While this was somewhat informative, it did not really change the predictive

results to any extent. PHAS clearly meets HUD's needs, but perhaps the threshold for high performance is too low to separate high and average performers, at least on the basis of the variable used in this study. It is also possible that because PHAS is heavily dependent on compliance performance, this summary measure is not sufficiently inspirational for managers and line workers. It is possible that they are satisfied with average performer status.

The absence of effective leadership may also be a reason for the model not performing so well. As discussed by Ingraham, et al., (2003) and Bossidy and Charon (2002), leadership may be an important ingredient moving high capacity to high performance. In describing leaders of highly graded governments in the GPP model, Ingraham, et al. (2003) suggested that leaders improve management capacity by creating "effective and integrated systems [and] provide energy and vision, but support in the form of a strong management team is required to move the organization constructively forward" (p. 130). Integration of systems was essential in removing the "stovepipe" mentality so endemic among employees (p. 133). Common leadership practices discovered in the GPP research were: early and specific identification of leadership base and strength; clear statement and frequent reinforcing of strategic values, vision, and priorities; capacity building around priorities; progressive building of integrating mechanisms and communications; and strong focus on implementation (p. 134). This latter point is particularly emphasized by Bossidy and Charon (2002). They summarize: "the leader has to be engaged personally and deeply in the business...execution requires a comprehensive understanding of a business, its people,

and its environment...only the leader can make execution happen, through his or her deep personal involvement in the substance and even the details of execution” (p. 24).

These leadership dimensions suggest the possibility that ultimately organization success may be somewhat idiosyncratic, depending upon the ability of the leader (or leadership team) to take management capacity to the next level. It may be that individuals have a built in mechanism that leads them down one path or another. As Ajzen and Fishbein (1980) have suggested, a core set of beliefs, attitudes, and intention leads to specific behaviors (theory of reasoned action). The presence of intentional managers (leaders) may be the differentiator for agencies to fill the gap between management capacity and high performance.

Further, the managing for results (MFR) framework requires leadership for effective implementation. As has been discovered even in the so called model governments (reputational leaders), there are two implementation trends: ritualistic and holistic (Burke and Costello, 2005). As Burke and Costello note: “If the human dimensions are neglected, the implementation is more ritualistic, and the reform is less likely to mesh with any substantive range of management decision-making process” (p. 283). Human dimensions included employee involvement, buy in and leadership, especially “how leadership mustered their power to promote MFR, especially from a perspective of value enhancement rather than command-and-control models” (p. 276). It is possible that some housing agencies engage in ritualistic MFR, so that even average performers had good scores on the GPP lever of performance, but failed to reach high PHAS scores.

Ingraham, et al. (2003) call for more research on the ways leadership impacts performance, particularly from the review of the GPP model (p. 30). Perhaps the leadership dimension's key to linking management capacity to outcome performance measures is the integration element in the GPP model. As Ingraham, et al. (2003) stated: "Effective management is fundamentally concerned with the extent to which the management systems are orchestrated as part of a unified, cohesive whole with shared values, common goals, and allied objectives..." (p. 20). The lack of statistically significant support for this element of the model in this study suggested that its absence may have depressed the influence of the rest of the model. The lack of consistency in this element also suggested an area for training, as discussed below.

Finally, it is possible, as the discussion of variables related to the planning documents suggested, that there was some measurement error in the survey results. Certainly, the Cronback's alpha suggested less than desirable reliability for human resource management (.45) and integration and alignment (.61) survey responses. Closed ended survey questions may not have been the best way to assess, for example, the impact of planning documents. The mere existence of plans says something positive about an organization, but not enough to discern if plans were well-executed and used. The case study method is more appropriate for delving into the details of planning documents. In addition, it is possible that executive directors responding to the survey did not necessarily exercise great care in determining their answers. They may not have researched their responses thoroughly.

In addition, it should be remembered that this study did not use the full GPP model in the study. Two subsystems were excluded: capital and financial management. It

is possible that these elements would have provided more definitive responses separating high and average performers. The fact that budget items were statistically important in IT and MFR analyses is suggestive that the two missing subsystems may have added to the explanatory power of the tested model.

Relationship to Previous Research

It is hoped that this research has made a small contribution to growing effort to discern quantitative links between management and performance and to those studies adding to the body of work addressing the GPP model. It is one of a few to test the model with outcome performance measures. The most prolific source of recent quantitative studies of management and performance has been Texas school data. As reviewed in Chapter 2 and summarized in Table 3, these studies had a number of other predictor variables linked more directly to the outcome measure of interest. These models clearly were more fully developed, capturing multiple factors linked directly to student performance, than the GPP model tested in this study, which was limited to characteristics of two support subsystems and two levers of high performance. It was not surprising that Texas regression tests ended up with higher R^2 figures than the model tested in this study. The Texas models generally had R^{2s} in the .40 to .60 range, but much of the variance in the outcome measure was explained by several control variables. The more limited model tested in this study had an R^2 of .08 with housing control variables showing little impact on performance. While low, this score could be interpreted as somewhat meaningful simply because of the indirect nature of subsystem linkages to the ultimate outcome measure used in this study. So this study appears to make a modest

contribution to the efforts to quantifiably link management actions to agency performance.

As to the other studies examining the GPP specifically, this study generally is supportive of those that found positive links between the model and agency performance. This study strongly supported Donahue, et al. (2000) with their finding that more unionization would negatively affect HR capacity; this was a significant quantitative finding of the present study. The descriptive findings in this study generally matched those of the Donahue study as well, such as hiring and terminating faster, and turnover, but differed on number of classified titles. Both studies had similar statistical results as well, with a few significant relationships, but percent differences in responses being largely in favor of high performing characteristics.

The positive link between internal functions (subsystem model) and state spending on collective versus individual items suggested greater professionalism on the part of staff, which then was linked to a greater focus on collective spending reaching more people than on essentially entitlement spending (Cogg and Schneider 2003). Perhaps the use of welfare and highway spending as the outcome variable may have contributed to the finding.

Little support for the GPP model was found in the Jennings and Ewalt (2003) study, in which the authors suggested that high subsystem capacity may prepare one for high performance, but without leadership and linking mechanisms, may not achieve high performance (p. 56). This is consistent with my study.

Overall, my study is consistent with other quantitative studies assessing the impact of the GPP on performance with weak statistical but strong descriptive support.

This suggests that there is value in the model's prescriptions, but practitioners should understand that achieving a high level of management capacity is only part of the journey towards superior performance. They still must deliver the goods in appropriate, efficient, and effective ways. The next section offers some recommendations for practitioners.

Recommendations for Practice and Future Research

Practice

From a descriptive point of view, this study clearly supported most of the GPP high performance characteristics. A good workforce plan should be a valuable asset in an agency with higher than average turnover and where there might be greater competition for jobs. A workforce plan would allow for more systematic hiring, which, one hopes, would lead to hiring better people and so on.

Speed of hiring and terminating for performance appeared to be a high performance characteristic. Thus, agencies looking to improve performance may want to evaluate their hiring and terminating velocities, which would also include termination during probationary periods (not addressed in this study). It makes sense that more timely hiring of qualified individuals could contribute to more effective operations and more timely termination of poor performing employees certainly would give the agency a chance to bring in better performers much quicker.

The results for the number of classified positions suggested that having fewer titles in a classification plan was a characteristic of high performers. In general, fewer titles suggested greater flexibility and greater flexibility in allocating personnel might very well lead to more cost effective performance. As previously discussed, this appears to be a trend among state and local governments as well.

The only HR variable that was statistically significant was unionization. This could be a tough issue for managers to tackle. The negative relationship found in this as well as other studies, suggests there are opportunities that might be explored by perhaps working with union officials to allow more flexibility in assignments or other factors that might be impacting performance negatively. In the 2011 political climate in many parts of this country, unionization has been attacked as a source of fiscal strain if not underperformance (Tumulty, 2011). This finding raises a serious question for housing agencies that want to improve performance. They need to find ways to reduce the negative impacts of unionization without demonizing their own workforce.

From an IT perspective, it seems axiomatic that fully integrated systems should help managers perform better, but of course, there is a monetary cost for purchasing and implementing such systems. It certainly was an interesting finding that the use of public kiosks was statistically significant, but agencies may be constrained by cost in implementing this feature. One might surmise that agencies who communicate via kiosks are perhaps more committed to communicating in other ways as well and that is why they had high PHAS scores to begin with.

Housing agencies update a regulatory required five-year plan annually. To the extent this serves as an agency's hands-on strategic plan, the need for a separate plan may be unnecessary. On the other hand, descriptive results clearly showed some advantage to high performers for the existence of separate strategic plan and participation of key stakeholders in developing such a plan. It also appeared that involvement of internal stakeholders was more important than external stakeholders in developing the plan. Average and below average performers may want to revisit both the development of such

plans (and one would hope, the use of them) as well as who the primary stakeholders might be.

The characteristics of high performance dimensions of the GPP variables do not represent earth shattering breakthroughs in operating behavior. There seems to be little risk and much to gain by incorporating them into basic operating procedures. They likely represent opportunities to exercise the often extolled but seldom achieved continuous improvement philosophy of the quality movement from thirty years ago and still a core part of a number of companies today (Sholtes, 1998; Liker, 2004).

Future Research

A number of items in the GPP model used here examine timeliness actions such as the speed with which employees are hired and fired, procurement processes, and review of performance information. Over the past 15 or so years, attention to speed of producing work has taken on important considerations. This has been especially the case early on in manufacturing, especially with various processes related to designing and building cars (Womack, Jones, and Roos, 1991) and expanding into the service sector, which more closely resembles government work. Research in this area indicates that speed—doing things faster—appears to be linked strongly to better quality, lower cost, and higher customer satisfaction (Meyer, 1993; Stalk, Jr. and Hout, 1990; Miller, 2002). Moreover, as the results of this study suggest, stronger support services appears to be linked to better performance. It seems abundantly evident that the more one can learn how to provide high quality, speedy, essential support services to those providing direct services, the greater likelihood these efforts will result in better performance.

From a management perspective, a number of organizational factors contribute to desired outcomes. Focusing on support services only is limiting. For example, the Balanced Scorecard focuses on four dimensions: learning and growth, business process, customer, and financial or other outcomes (Kaplan and Norton, 1996). The GPP model generally fits into learning and growth and business process but not customer or outcomes. The Baldrige award, another criterion-based model, has seven elements: leadership, strategic planning, customer focus, measurement and analysis, workforce focus, process management, and results (Heaphy and Gruska, 1995). The GPP model fits into leadership, strategic planning, and workforce focus, although not with the same detail. These models offer a manager a more comprehensive focus on which to base achieving a high performance organization. On the other hand, these models lack the degree of specificity that the GPP model has provided. So adding the GPP high performing behaviors, activities, and products to a broader model may offer a genuine opportunity for an organization to pursue and perhaps achieve excellence.

As to housing agencies, one of the areas that might prove to be illuminating is to determine why and how an agency improved their PHAS score from the 70s and perhaps low 80s to high performance status (90 or higher). Obviously detailed case studies would be in order here. Discovering management actions that changed an agency's low performer to high performer status could inform all housing agencies about actions that could improve or maintain their performance levels.

Since unionization was one of the few human resource characteristics with a statistically significant impact, one might find a comparison of low/average performers and high performers with high levels of unionization revealing specifically how the issue

of unions is handled. What do high performers do differently than low/average performers with high levels of unionization? Such results could lead to better working relationships between management and unions and perhaps better performance.

A major theme of the management research into school districts was the impact of networking. Executive directors of housing agencies network too. How their networking impacts performance was not addressed in this study. This would also be an area for future research.

Public housing agencies offer a unique opportunity to assess a number of management questions, but much of the data is difficult or expensive to obtain. It seems reasonable to suggest that HUD open up its data sources and assist researchers by providing easier access to housing agencies around the country. A cooperative effort could lead to a major source of data on operations and management and hopefully to a number of suggestions to improve management practices and productivity of the nation's public housing agencies.

Limitations

There were several limitations to this study. First, a low response rate clearly limits the ability to generalize any findings to the population of public housing agencies in the United States. While the overall characteristics of those agencies that responded reflect the larger group of agencies, it is not possible to generalize the results. Moreover, the number of housing agencies with fewer than 250 housing units is large and these were specifically excluded from the study by design.

Second, PHAS scores are defined by a 100 point scale with the core model separating high performers from others at the score of 90. There may be few if any

substantive differences between agencies scoring 88 or 89 and 90 or 91 so that the demarcation used in this study may not capture differences or similarities among these agencies. Of course, this was one of the reasons for testing the other performance designations in this study (90/80, 94/90 and 94/80), which showed several differences.

Third, the nature of the survey questions, which generally were ordinal and nominal in nature, may not have been discriminating enough to identify real differences in the characteristics of interest. The scores on Cronback's alpha suggested this for two parts of the survey, HRM and Integration. Fourth, this study only tested part of the GPP model. So findings and conclusions about the model are limited to the elements employed here, not the full model.

Training Opportunities

Metaphorically speaking support services, such as those in the GPP model, form the foundation for direct government service provision. As with a building, the foundation is essential for its support but it is not visible (hence the term black box); it is not flashy, nor is it often recognized for the good work that occurs in these functions. The work is often taken for granted in good times, and unfortunately, often blamed during bad times. Because it is indirectly linked to the production function in government, it is challenging to make a strong link between subsystem performance and agency performance. While housing agencies have a multi-faceted, single outcome measure that captures customer/client and regulatory oversight concerns, many other public services do not have such strong links. This is problematic for measuring direct service provision and even more difficult for linking support services, GPP subsystems, to outcome measures.

This suggests that subsystem managers have a special challenge in ensuring the work they do gets recognized and funded appropriately and that performance standards deal more specifically with internal needs (internal customer satisfaction) in order to ensure they are doing the best that they can do. One would hope that this effort has a cascading impact, influencing direct service providers to take advantage of superior internal support to provide superior services to external clients, whether they are individuals, neighborhoods, or communities at large.

The somewhat invisible nature of many support services also raises the question of how well managers and line staff understand the importance of these functions. There are two primary concerns. One is that these services should provide seamless, fast, and reliable support to the direct service functions. The corollary is that these services should not be a drag on direct service performance. At times, support services assume a central or controlling role in an organization, essentially leaving direct services in a less important position. Understanding how systems of support lead to better performance requires a different mindset, a change from focusing on what is done inside the organization to those who receive the goods or services outside the organization. In some ways, this entails changing from a producer-focused to a customer/client-focused organization (Sholtes, 1998). This concept is not prevalent in government today and for many requires a reorientation. This suggests a number of potential training opportunities.

A core part of the quality movement with its deep roots in the Deming philosophy focuses on process improvement, customers, and outcomes as well as supply or inputs (Sholtes, 1998; Liker, 2004; George, 2003). Each one of these areas, especially when viewed as a system, offers opportunities for both dramatic and continuous improvement.

Maleyeff (2007) offers elements of such a training program on the basis of concepts from Lean and Six Sigma (p. 22). These include defining customers, identifying waste and value added work, using specific project management tools, process mapping, various analytical tools such as root cause and statistical analysis, and a number of workplace organizing techniques.

The tools suggested by Maleyeff are central to both Lean and Six Sigma methodologies. For successful implementation, however, leaders/managers must adopt the management philosophy as well as the tools, or risk the failed outcomes of fad-of-the-year approaches experienced by uncommitted organizations. This philosophy also requires continuous thinking, analyzing, redesigning, and studying work systems, processes, and the human assets for which leaders are proud to say are the most important assets of the organization (Sholtes, 1998).

Conclusion

Managerialism can simultaneously be a fad and a promise. When used mostly for perception (ritualistic), performance management efforts generally do not lead to better outcomes, hence the lack of evidence bemoaned by Pollitt (1990) and Ammons (2002). When used to improve policy outcomes (holistic), the promise is likely to be kept. Growing quantitative evidence suggests that management matters, as reported in numerous studies using Texas school data and social service information (see Tables 2 and 3). These foundational studies have set the stage for continuing efforts to unpack management's influence on performance. The GPP model and related studies, including my study, add value to this growing literature through both modest support of the model

and the identification of ways to enhance the model, but much more work needs to be done to firmly link the model to high performance.

The journey to improved performance of public organizations is never ending. Considering the precarious economic conditions facing this nation and the fiscal challenges confronting many governments, understanding and improving performance may be essential for determining budget priorities, for informing managers of where improvement is needed, and quite likely for helping the public to retain a level of trust in their public institutions. Smart, effective, and productive government that delivers value for the money is essential for maintaining a vibrant democracy.

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APPENDICES

APPENDIX 1

[The text below as used in the email addressed to the executive directors of the housing agencies. Similar text was used in the regular mail surveys as well.]

After many years working in the public sector, including six with a public housing agency, I know firsthand the challenges facing housing managers. More importantly, I believe housing agency managers are an untapped resource in helping academics and practitioners learn how to address public management challenges.

In working towards my new career in academia, I am conducting research on organizational performance, looking primarily at support services such as human resources, information technology, capital management and financial management. Below is a unique link to a 45 question survey about these services and general management related only to public housing, not Section 8, support programs.

Link

This link is tied to your specific email address and cannot be forwarded to anyone else to complete. This ensures that only one survey will be submitted from each agency. The survey is hosted on Survey Monkey's secure site. It would be greatly appreciated if you could respond to the survey by August 14.

Since a number of questions may require some research, you may wish to delegate answering parts of the survey to your staff on a printed copy. Once completed manually, it should only take you a few minutes to enter those answers on the on-line version. You can answer questions on-line at different times and change answers to questions already completed up to the time you click on the submit button. Once you submit the survey, you will no longer have access to the on-line link.

This study is primarily for academic purposes. Of course, lessons learned should interest public managers, and some effort will be made to share these through various academic outlets. Data will be aggregated, so no names of individual housing agencies will be used in the write up. This research is not sponsored by HUD (or anyone else). If anyone would like an executive summary, you may contact me by email. The study should be completed by spring 2010.

Every response to this survey is important because a high response rate generally means greater validity of survey results, which in turn means more solid lessons learned. So to each of you I offer my sincerest thanks for taking time to respond.

Please feel free to contact me or Dr. Howard Frank (954-483-3117, howardf@fiu.edu) if you have any questions or concerns about this survey.

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PRESENTATIONS AND PUBLICATIONS

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