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Author(s): John Topinka

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

John Topinka
University of Memphis

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. 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 by examining 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. 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 as well as environmental and client control variables. The findings offer limited statistically significant findings but strong descriptive support for the model.

Introduction

Organizations “are the primary instruments through which modern societies achieve their social, political, and economic objectives” (Tompkins 2005, 1). Achieving objectives or, more broadly, organizational performance, has been a persistent concern of those studying and managing these entities since the early 1900s. This is when good management became 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; Gulick [1937] 2003; Osborne and Gaebler 1992; Peters and Waterman 1982; Pfeffer and Sutton 2006; Simon 1945; Taylor [1911] 1998; Waldo 1980).

Most of the historic literature on performance focused on 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). Nonetheless, the richness of this literature is felt clearly as abundant sources of propositions for continuing study, including those related to most quantitative assessments of management.

One of the classic publications from this rich history came out during the first of four “tides of reform,” scientific management, during the New Deal era through World War II (Light 1997). This era stimulated scholars and practitioners to search for new administrative tools. An enduring legacy of that era is found in the writings of Luther Gulick, who defined executive functions in the long-memorialized acronym POSDCORB: planning, organizing, staffing, directing, coordinating, reporting and budgeting (Gulick 1937). Gulick (1937) intended his notes to serve as a guide to help get “the best results” for complex bureaucracies (3).

The fourth great reform era, liberation management, occurred during the 1980s and 1990s (Light 1997). A tidal wave of published efforts offered various management elixirs to cure performance ills, detailing ways to find excellence (Peters and Waterman 1982), reengineer organizations (Hammer and Champy 1993), reinvent government (Osborne and Gaebler, 1992), balance performance scoring (Kaplan and Norton 1992), break through bureaucracy (Barzelay 1992), and manage for results (Gore 1993). While these case studies, reports, and anecdotes enriched the field of management, these more modern efforts also often lacked rigorous quantitative assessments showing that management mattered in the performance of public organizations (Ammons 2002; Lynn 1996); nor did they specifically address classic executive functions, (except in part the Balanced Scorecard) as articulated by Gulick with one notable exception: the Government Performance Project, which began in the late 1990s (Government Performance Project 2000 hereafter GPP; Ingraham, Joyce, and Donahue 2003).

Government Performance Project

Under the aegis of the Maxwell School of Citizenship at Syracuse University and funded by the PEW Charitable Trust, the GPP reincarnated POSDCORB. It is a unique model grounded in research and analytical work of practitioners, academicians, and reporters from *Governing* magazine (*Governing* 2000). The GPP defined management or, more specifically, management capacity using four management subsystems, integration and alignment of goals and objectives, and a managing for results framework – all levers of high performance (Ingraham, Joyce, and Donahue 2003). The

four management subsystems are human resources, information technology, finance, and capital management. A summary of model criteria is provided in Table 1.

Table 1: GPP Management Capacity Criteria

Financial	Human Resources	IT	Capital	MFR
Multi-year perspective on budgeting	Conducts strategic analysis of present and future human resource needs	Agency-wide IT systems provide information that adequately supports manager's needs and strategic goals	Conducts a thorough analysis of future needs	Engages in results-oriented strategic planning
Mechanisms that preserve stability and fiscal health	Able to obtain the employees it needs		Monitors and evaluates projects throughout their implementation	Develops indicators and evaluative data that can measure progress toward results and accomplishments
Sufficient financial information is available to policy-makers, managers and citizens	Able to maintain an appropriately skilled workforce	IT system forms a coherent architecture	Conducts proper maintenance of capital assets	Leaders and managers use results data for policy-making, management, and evaluation of progress
Appropriate control over financial operations	Able to motivate employees to effectively support its goals	Conducts meaningful, multi-year planning		
	Has a civil service structure that supports its ability to achieve its workforce goals	IT training is adequate		Clearly communicates the results of its activities to stakeholders
		Can evaluate and validate the extent to which IT system benefits justify investment		
		Can procure IT systems needed in a timely manner		
		IT systems support the agency's ability to communicate with and provide services		

Source: GPP 2001, Appendix E, 231-232.

The GPP model is an action focused model; it describes what and how people manage as best practices. For each of the criteria in Table 1, the GPP identified specific, measurable elements demonstrating management capacity. The human resource subsystem includes 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, Joyce, and Donahue 2003, 37). The information technology (IT) subsystem includes characteristics that show how IT systems support timely and effective decision making by managers (40). Financial management systems address how resources are allocated “in line with strategic priorities and have a means of effectively and accountably spending the money” (33). Capital management deals with a government’s ability to plan for, fund, and maintain physical assets.

Supporting the GPP subsystems in the model are 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, Joyce, and Donahue 2003, 43). Integration and alignment characteristics encompass whether or not the agency has a clear mission and vision and that the right information and resources are provided to the right people at the right time (46–47), again clearly executive functions. Integration is made up of key elements from each of the categories in Table 1, suggesting the linkages among these subsystems is also necessary for high performance.

Based on document review, surveys, and interviews, researchers assigned a letter grade (A to F), indicating the level of management capacity for each of them, A of course meaning high management capacity and D low capacity (GPP 2000, Appendix B). The GPP published grades for all 50 states (twice), for 35 cities, and for 40 counties over a three-year period. The performance criteria were quite detailed for each element of the model, and the resulting grades gave strong indication of the management capacity of participating governments, but GPP researchers did not test the model using policy or program outcomes; other researchers, however, used GPP reports on specific governments to examine a variety of performance constructs.

Tests of the GPP Model

State government has been a popular locus to test GPP grades and various types of performance, most of which, however, were not focused on program performance. For example, O’Leary and Yandle (2000) showed that states with formal environmental dispute programs tended to have higher GPP grades than states without such programs, while Cogburn and Schneider (2003) found states with higher GPP grades spent more dollars (in percent terms) on building highways than welfare, suggesting spending on broader, collective benefits such as highways is better than spending more

on welfare. Of course, some might argue the opposite view, especially those receiving welfare. Fossett and Thompson (2005) found no significant relationships between state GPP grades and index scores for administrative response to the disadvantaged. This might be a type of process performance measure.

King, Zeckhauser and Kim (2004) examined several characteristics that might help explain different GPP management capacity grades earned by states. They suggested that certain characteristics of government institutions, political and social environment, and business environment might have affected GPP grades. For example, they found high social capital, entrepreneurial energy, and professional legislatures were associated with higher GPP grades. A high good government group score (number of good government organizations in the state) was associated with lower GPP grades, suggesting the need for outside groups to push for better state government. There was no observable impact for a strong governor, neighboring states, or tax burden. Overall the model explained about 25% of the variation in GPP grades, but none of these items focused on program performance.

On the other hand, Jennings and Ewalt (2003) used the GPP model to test state management capacity's influence on welfare performance, using recognized performance measures: job entry, job retention, and earnings gain, and a number of other independent variables. 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 authors suggested that the weak linkage might have resulted from the fact that capacity prepares one for higher performance but without leadership and linking mechanisms, high performance may not be achieved.

Finally, on the state side, Hou, Moynihan and Ingraham (2003) focused on GPP's financial capacity element – rainy day funds – and quantitatively tested its link with management capacity. They found support for both capacity and financial 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 supported one part of the financial subsystem in the GPP model.

At the local level, only a few studies exist. Using a fuzzy rule-based system to evaluate financial management, Ammar et al. (2001) generated similar but not identical assessments of financial management as the GPP

method for cities in the GPP survey. This method adds a level of expert judgment to be incorporated into the evaluation of quantitative measures of financial health, which by itself is a form of performance – the government’s skill in financial management, but this study did not address program performance.

Donahue, Selden, and Ingraham (2000) used the most extensive best practice criteria from one element of the GPP model of any study. While most of the studies employed numeric representations of individual subsystem grades in their tests, this study explored detailed GPP human resources management (HRM) criteria through descriptive and quantitative analysis of 29 city governments. They postulated that more professional (manager-council) and less unionized governments would exhibit higher HRM best practice characteristics (those under the Human Resources column in Table 2) than strong mayor or more unionized governments (390–391); however, this study was not a test of policy or program performance either, but rather a test of internal capacity. They found mixed support for both descriptive and correlation analysis that in fact the HR best practices were linked to the manager-council form of government. The largest descriptive difference was the unionization variable. Higher capacity cities had a lower percentage of union workers compared to lower capacity cities (34.5% to 88%). This suggested that level of unionization might be worth investigating possibly with some predictive power. Thus, it was added to this study.

Research Approach

Generally, quantitative examinations of the GPP model did not use specific best practice characteristics in their tests; rather, they used reported grades (or numeric values of those grades) for GPP subsystems; moreover, for the most part, these studies did not examine GPP grades related to outcomes of interest to the public – program outcomes – except for Jennings and Ewalt (2003). The test in my study was different in that it used detailed GPP criteria to test management capacity’s influence on a publicly reported outcome performance measure for public housing agencies. Public housing agencies offered a unique opportunity to test this performance link, since the federal Department of Housing and Urban Development had been using for some time a performance management system abbreviated PHAS and known as the Public Housing Assessment System to assign performance points to agencies across the country. The points ranged from 0 to 100 and essentially served as a single performance score. Several other reasons exist

that make housing agencies a good test for the GPP model. First, there are many public housing agencies of varying sizes in almost every state. So, the study is not limited to one geographic area. Second, with some exceptions, housing agencies follow the same rules and have the same funding sources. Third, they are assessed for performance using the same measures on an annual basis. Fourth, they all do the same type of business. This suggests that differences in performance are likely to be from differences in management (and implementation), controlling for environmental variables.

Keep in mind, however, that the GPP model is much like Gulick’s POSCORB, executive, not program functions. As Jennings and Ewalt (2003) noted, the functions in the GPP model set the stage for high performance but connecting them to that performance is a different challenge, since they are one step removed from direct program activity.

My study tested specific characteristics of the GPP model listed in Table 2 against the Public Housing Assessment scores for the public housing agencies in the United States.

Table 2: Tested GPP Characteristics with Desired Results

Human Resources	Information Technology	Managing for Results	Integration
<ul style="list-style-type: none"> • Less unionization* • Existence of a workforce plan • Lower attrition rate • Faster hire times • Faster termination times • Lower percent of contract employees • Fewer classified titles 	Effective software for <ul style="list-style-type: none"> • Budgeting • Training • On-line housing application • Public kiosks • GIS • Specialized financial reports • Cost accounting • Payroll • Hiring • HR management • Procurement • Work orders • PHAS dashboards • Existence of a strategic information systems plan • Speed of IT purchasing • Waiting list • Compliance system • Employment application 	<ul style="list-style-type: none"> • Involvement of senior staff and budget office in developing strategic plan • Timely performance reporting to the budget office and division directors • Existence of a 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 • Past performance* 	Existence of: <ul style="list-style-type: none"> • Workforce plan • Strategic plan • IT performance plan • Business plan

*Not explicitly part of the GPP model

The characteristics in Table 2 are written to show their high-performance vectors. For example, faster hire times and lower attrition rates should be associated with greater management capacity and thus higher performance. Note that financial and capital management were not included in this study for two reasons. First, in discussing and sharing the long survey with public housing professionals, this author was advised getting housing directors to respond to any survey would be a challenge and getting them to respond to a long survey next to impossible. The shorter survey, without financial and capital characteristics, still had almost 60 required responses, bordering on too long. Second, elements of financial and capital management can be found in the remaining GPP model itself. Indeed, it was difficult to get housing directors to respond to the shorter survey, which initially was done through Survey Monkey (3 iterations), then through regular mail with a stamped return envelope, and finally through regular mail with a financial incentive (a new dollar coin). The final response rate was only 19%.

The research reported here tested GPP criteria shown in Table 2 against performance scores of over 100 public housing agencies, suggesting that effective executive management capacity is linked to higher organizational performance, but with somewhat limited statistically significant results. Two non-GPP variables were also tested, one being the level of unionization in each agency and the other prior year PHAS grades with lower unionization and higher historical PHAS grades being statistically significant predictors of current high performance.

The rest of this paper starts with a description of the Public Housing Assessment System and housing related environmental variables. It continues with an explanation of the hypotheses, data sources, and methods used. The next part explores the quantitative and descriptive findings. It ends with some concluding comments.

Public Housing Assessment System (PHAS)

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, the Department of Housing and Urban Development (HUD) developed its first Public Housing Assessment System in 1998 to evaluate the performance of public housing agencies (U.S. Government Accountability Office 2002 hereafter GAO). The system consists

of four major categories with a number of sub-indicators as shown in Table 3.

Table 3: 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.

HUD applied 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). HUD evaluated each of the sub-indicators through a variety of methods, including site visits, electronic audits, and random sample resident surveys. The results of these evaluations led 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 60 to 89 points, and a troubled performer's score is below 60 points. These scores were used as the dependent variable in this analysis with agencies scoring 90 and above as part of the high-performance group and those scoring less than 90 points in the average group.

It should be noted that in 2011 HUD introduced a revised PHAS program but still using a 100-point system with four categories, which continues with the change in the administration. The four categories and points are physical assessment subsystem (PASS-40 points); management assessment subsystem (MASS-25 points); financial assessment subsystem (FASS-25 points); and capital fund program (CFP-10 points). HUD

eliminated the resident satisfaction category, moved some financial indicators to management and dropped a number of management items (HUD, n.d.). The changes added two financial indicators, which may be in response to GAO's recommendation for stronger oversight of housing agency financial management (GAO 2009). GAO did not address other performance items in its 2009 report.

HUD's own performance management program focuses primarily on program goals and objectives. For example, the 2011 Annual Performance Report for HUD focused on program outcomes not internal assessment tools such as PHAS. Program outcomes were reported for mortgage foreclosure assistance, affordable housing, homeless veterans, energy efficiency, and internal management improvements, where, interestingly, one of its objectives was to reduce end-to-end hiring times (13), a key characteristic of the GPP. HUD's Office of Strategic Planning and Management did not deal with PHAS in its annual performance reports. This makes sense because PHAS in its original and revised forms address public housing agency management, not federal agency management.¹

In addition to PHAS grades, a number of environmental variables were also tested to assess their impact on performance, with several focusing on physical assets of public housing and several on client characteristics.

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 level (individual housing project) using new project expense level (PEL) calculations (Federal Register 2005, 76964-76966). The PEL's reflect HUD's understanding of the task difficulty of managing public housing. Of course, the amount of funds still depended on Congressional allocation. In essence, funding for the entire agency became a sum of cost determinations for each development 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 analysis

¹ Annual performance reports for HUD can be found at HUD.gov, Office of Strategic Planning and Management.

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 each housing development. For my purposes, the sum of the coefficients for each development and characteristic were totaled for each agency to create physical and client variables. Based on the coefficients, high performers should be: larger, with newer housing, fewer bedrooms, with detached or semi-detached housing, more elderly residents, a rural or non-central city location, and with lower neighborhood poverty rates.

Using the abbreviated GPP model and environmental variables, the following hypotheses were tested related to public agency outcomes (PHAS scores).

Hypotheses

- Public housing agencies with PHAS scores 90 and above will score higher than average performers on human resources, information technology, managing for results, and integration and alignment elements of the management capacity model.
- Public housing agencies with PHAS scores 90 and above will have proportionately more housing units, newer housing units, units with fewer bedrooms, more row house and high-rise units, more elderly residents, more non-central city location, and they will be located in lower poverty neighborhoods.
- Public housing agencies with PHAS scores 90 and above will have proportionality fewer employees in unions.
- Public housing agencies with PHAS scores 90 and above in the current year will have had scores above 90 in the prior year.

Data and Method

Data.

Housing agencies were the unit of analysis for this study. Data for housing agency performance and other information were drawn from HUD's web site with information on PHAS scores (also obtained through the survey), email addresses, and number of housing units (agencies with 250 or fewer units were excluded from the review, since they follow different rules than larger agencies). HUD provided project expense level reports for each agency with associated coefficients. These were summed to get a single number for each environmental variable for each agency, where appropriate. Data extracted from HUD's web site resulted in 542 agencies with useable email addresses. Data on GPP characteristics came from email and regular mail surveys conducted mostly in the fall/winter of 2009/10. Questions used in the survey were 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, AZ (1999). The study survey solicited information about human resources, information technology, integration of management systems, and managing for results criteria. The study survey provided answer choices for respondents in various formats based on the reported breakout of responses in the GPP review. For example, the characteristic speed of hiring had five possible responses: less than 30 days; 31-60 days; 61-90 days; 91-120 days; and more than 120 days. No open-ended questions were included.

With a total of 124 responses from the original list of 542 agencies meant a final response rate of 23%; however, after review of responses and data cleaning, only 103 usable responses remained for a final response rate of 19%. The single greatest concern related to non-response bias 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. Both high and average performers in the sample reflected similar characteristics on these two key variables with the total population from which they came.

Method

I analyzed both environmental and GPP variables with descriptive statistics (cross tabs) and a t-test of differences in means of two independent groups. This was an after the fact, quasi experimental design, as suggested by Johnson (2010 167), with the management subsystems serving as the treatment and PHAS scores as the outcome. Environmental variables were intended to illuminate task difficulty, as previously explained. Statistically significant differences in a test of means addressed the research hypotheses

regarding the association between management capacity, environmental variables, and high performance. Johnson (2010) also noted that in survey research, one generally finds that a 10-percentage point difference in a response to a question between the two groups often reflects statistically significant differences (167). This is explored as part of the findings as well. Also, I conducted a regression analysis with key variables from each part of the model as well as with two other variables, level of unionization and prior year PHAS scores.

Quantitative Findings

The environmental variables were tested through correlation analysis. Not one of the seven environmental variables was statistically significant. Each of the variables was subdivided into various components for the test. For example, the unit size variable was split into four sizes: very small (350–500), small (501–1000), medium (1000–1500), and large (1501+), and age of housing units was divided into three levels: 26+ years, 21–25 years, and 20 or fewer years. Bedroom size was divided into less than 1.5, 1.5 to 2, and 2 to 4 bedrooms. There were three building types tested: detached, row house and high rise. Occupancy type consisted of elderly, family to elderly, and family only. Location types were rural, non-central city, and central city, and poverty ranges tested included greater than 30%, 20% to 30%, and 0% to 20%. Perhaps the new project expense level-funding model has equalized funding based on task difficulty; thus, harder to manage agencies have more resources so that these environmental variables or task difficulty challenges have been reduced or eliminated, as suggested by the results of the correlation analysis. This would support the value of the new funding model.

Table 4 reports the t-test results for all statistically significant variables from the GPP model plus the additional variables added to the study: unionization and past performance. It should be noted that the specific criteria identified in Table 2 were operationalized in the survey with multiple choice options for responders. For example, the unionization question provided six possible choices: 0–20%, 21–40%, 41–60%, 61–80%, and 81–100%. Some criteria were answered simply yes or no such as for the existence of a workforce plan.

As can be seen in Table 4 only one HR variable (non GPP) was statistically significant: unionization. This result supported the hypothesis

Table 4: T-test for the Significance of the Mean Difference between High and Average Performers for All Tested Variables

	90/90 Model	N	Mean	SD	t-ratio	Sig
% of employees in unions	High	44	4.57	1.02	1.96	.053**
	Average	56	4.04	1.56	2.06	
Budget	High	45	3.47	.968	1.739	.085*
	Average	58	3.12	1.027		
Public kiosks	High	45	1.20	.457	1.844	.068*
	Average	58	1.07	.256		
Bud office in Strategic Plan	High	45	2.53	2.427	1.705	.091*
	Average	58	1.74	2.268	1.690	
Prior Year PHAS	High	43	91.65	4.076	.622	.000**
	Average	56	81.59	7.762	1.037	

**Significant at the 0.05 level; *Significant at the 0.10 level

related to unionization, because a lower level of unionization was related to higher performance in this data set. Only two IT variables were statistically significant at the 0.10 level: 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. It is possible that, between the time the GPP model published its research and the time of this study (about 8 years), housing agencies as well as other government organizations 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. Most housing agencies use one of a handful of specialized software products, and the companies offering those products do compete with each other for clients. So, it is likely that housing agencies in general have good software programs.

As for managing for results, only one GPP variable was statistically significant: involvement of the budget office in developing a strategic plan (at the 0.10 level); however, past performance can certainly be attributed to managing for results as well. This variable was statistically significant in the t-test. Obviously, past performance matters for current (and future) performance.

The results shown in Table 4 were based on dividing the agencies into two groups: one with PHAS scores 90 and above and the other with scores lower than 90. T-tests were also run dividing the agency population into those with scores 90 and above and those 80 and below and those with scores 94 and above and those below 90. This reduced the number of cases in

each group to create greater differences between them. Additional GPP characteristics surfaced as statistically significant in these models, as shown in Table 5. Interpreting these results is somewhat problematic, since budgeting related characteristics are the only variables significant in all three models. On the other hand, it does suggest that the GPP model may have more influence on performance than the base model suggest. As a final test, a regression analysis was run on these data and is explained next.

Table 5: Summary of Variables with a P Level of 0.10 or Less – All Models

Variable	90/90	90/80	94/90
<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

Regression Analysis

This section reports the findings from the regression analysis of the GPP model represented by the survey results in this study. The basic model is presented in Figure 1. The dependent variable used was the PHAS score. On the basis of the correlation and t-test analyses, a limited number of variables were selected for the regression test. Level of unionization was included as well, since this can be considered a human resources characteristic. These are shown in Table 6 and the results are shown in Table 7. The R^2 was .205; the adjusted R^2 .079, $F(13) = 1.62$, $p < .10$. Approximately 8% 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 8% of the variance in PHAS scores based on 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.

Figure 1: GPP Performance Model

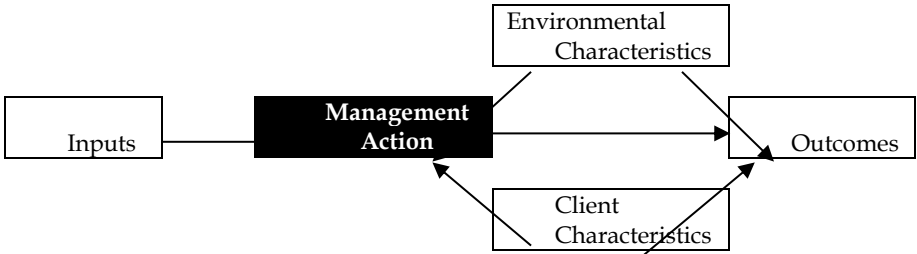


Table 6: Predictive Model Elements

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 	M ₁ – Human Resources <ul style="list-style-type: none"> • Workforce plan • Unionization M ₂ – Information Technology <ul style="list-style-type: none"> • Integration of some IT systems • Select E-government tools M ₃ – Managing for Results <ul style="list-style-type: none"> • Involvement in its development • Elements in IT performance system • Timeliness of reporting performance information M ₄ – Integration of Management Systems <ul style="list-style-type: none"> • Workforce plan

When prior year PHAS scores were added to the regression 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, 45). It makes sense that an organization which achieves a high level of performance would work hard to maintain its high-performance status.

Table 7: Regression Results for Base GPP/PHAS Score Model

Variables	Unstd Coef		Std Coef		sig
	Beta	SE	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 info	.117	.184	.173	.633	.529
Timeliness of rptng budget office	.088	.041	.226	2.130	.036**

**Significant at the 0.05 level; *Significant at the 0.10 level

The results of my study are consistent with other quantitative tests of the GPP model, such as Donahue, Selden, and Ingraham (2000), which found strong descriptive evidence but not much statistical confirmation that the HRM part of the model led to better outcomes, and Jennings and Ewalt (2003), who also found limited support using GPP grades as independent variables, but at least with a genuine outcome measure.

Descriptive Findings

While only a few of the variables achieved statistical significance in the predicted direction, descriptive statistics suggested high performers did better on a large majority of responses related to the high-performance dimensions of each variable. For example, an effective budgeting system was statistically significant for high performance. In the survey, 69% of high performers had effective budgeting systems with only 47% of average performers indicating such effectiveness, a difference of 22 points. Looking at the results for each question in the survey related to GPP criteria, I found high performers had higher scores than average performances on 71% of the HRM characteristics; 63% of the IT characteristics; 60% of e-government characteristics; 67% of strategic planning characteristics; 100% of IT plan characteristics; and 75% of integration characteristics. Most differences were simply not large enough to reach statistical significance.

As noted by Johnson (2010) often a difference of 10 percentage points in a survey response between two groups of interest would result in a statistically significant finding. Table 8 shows those variables that had a 10-point difference between high and average performers. Those characteristics that were statistically significant have an asterisk next to them, one of which only had a 9-point difference. Of the 20 variables listed there, all but two are linked to high performers. Perhaps of some interest in the strategic planning category, involvement of residents was a negative 10 points, suggesting the more involved residents were in strategic planning, the lower that agency's performance score. Also, of note, out of the 19 items with a 10-point difference, only four were statistically significant in the base model of the study.

Table 8: Characteristics Where Survey Responses Exceeded 10 Percentage Points Difference between High and Average Performers

Category	Difference
<i>Environmental</i>	
Age of Housing*	
<i>Human Resources</i>	
Unions*	12
<i>IT Systems</i>	
GIS	-10
Budget*	22
Financial	19
Cost Acct	12
Payroll	15
Procurement	15
Dashboards	12
Comp Bid	10
Negotiated Bid	13
Kiosks*	9
<i>Involvement in Strategic Planning</i>	
Director	10
Senior Staff	12
Budget Office*	17
Division Directors	18
Residents	-10
<i>IT Perform Plan</i>	
Vision	11
Values	15
Goals	12
Data	11

Source: Crosstabs and author's calculations

These results confirm the idea that achieving the high-performance dimensions articulated in the GPP model appears to set the stage for high performance. It certainly suggests, as the Donahue, Selden, and Ingraham (2000) and Jennings and Ewalt (2003) studies indicate, that GPP elements appear to be associated with more professional approaches to management; yet, completing the link to high performance may involve some other element missing from the model. A couple of potential missing links are discussed in the concluding section.

Conclusion

Do high performing public housing agencies exhibit high performance dimensions of GPP management capacity criteria? The answer is mixed. On one hand, tests of statistical significance show limited support for this relationship. Budget related characteristics (application systems and involvement in the strategic plan) and use of public kiosks were the only significant model items from a statistical point of view. Budgeting is clearly an important function in POSDCORB and in modern bureaucracies, so these findings strongly support the link to management capacity; the rest of elements in the base model did not achieve statistical significance, hence weak support overall for the GPP model.

On the other hand, descriptive findings suggest that high performing housing agencies do exhibit better responses on about 78% of the items tested. Two other variables, not part of the GPP model, that achieved statistical significance were level of unionization and past performance. Agencies with low levels of unionization performed better than those with high levels of unionization. This finding is generally consistent with the results in Donahue, Selden, and Ingraham (2000) and suggests further research might be in order to determine what about unionization hinders high performance. A study by Dluhy, Becker and Topinka (2001) suggests non-union housing agency staff are more cost effective than union staff. Perhaps non-union staff are more effective as well.

It makes sense that past performance is a strong predictor of current performance. It suggests the power of culture, habit, and other behavioral concepts that link continuity of action. The challenge of reaching high performer status must instill some kind of persistency in those agencies, since they appear to be able to maintain that status from year to year. It might also mean that average performers might be content to be average, since the rewards for achieving high performance grades may not be worth the effort (based on someone's cost benefit calculation).

An obvious 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, Joyce, and Donahue 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 higher survey scores than average performers on the high-performance 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 might have led to higher PHAS scores. The missing characteristics not directly measured in the GPP model may have to do with leadership, systems, and people, the workers themselves.

Part of the missing leadership and system characteristics may be related to direct service provision, the link between the work of management capacity (support functions) and the outputs and ultimately outcomes of the production function of government. This element has also been called execution—a business term for implementation (Bossidy and Charan 2002). Bossidy and Charon (2002) 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” (i).

The GPP model includes some of these 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 executive functions. The only letter it is missing is “I” for information technology. The GPP 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. A third characteristic not measured in the GPP is the quality of the workforce. This is implied to some extent within the concept of execution, but it is possible that high performers who do well on support functions have higher quality workers in direct service provision as well and that is what moves an agency from average to high performance.

Based on the statistical results of this study, perhaps high management capacity is not absolutely necessary in order to achieve high performance. Rather, high outcome performance may be more dependent on how direct service delivery is accomplished and the leadership that inspires high levels of execution along with the people who can get it done, in spite of average and perhaps below average support services. 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 GPP characteristics 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, strategic planning, and IT characteristics were included in the model. There is no doubt that these are critical support functions in government. Further, having a tradition of high performance and perhaps fewer union workers also helps with high performance.

Finally, 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.

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