Testing a Multi-Dimensional Model of Organizational Performance: Prospects and Problems

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ABSTRACT

Scholars have been preoccupied for generations with identifying the “best measure” and model of organizational performance. Drawing on previous work focused on the development of multi-dimensional frameworks or models of organizational performance, this article presents our perspective on organizational performance, discussing a multi-dimensional model that emphasizes the importance of assessing the two primary dimensions of performance, management and program performance. We advocate for the use of both perceptual and objective measures in seeking to understand organizational performance, finding that examining these perceptual and objective measures has significant usefulness in fully capturing performance. In addition, through the use of multi-level random coefficient (or hierarchical) modeling, we find various interconnections between management dimensions and program dimensions in understanding organizational performance in twenty-two human service organizations providing early care and education services.

Few topics have perhaps vexed public and nonprofit management scholars more than the question of what constitutes organizational performance or effectiveness. Numerous scholars throughout the development of organization theory have focused on developing the best way to define and/or measure organizational performance. The explosion of research has unfortunately left the field with numerous and often conflicting models of organizational performance (Likert 1967; Miles 1980; Pfeffer 1982; Quinn and Rohrbaugh 1981, 1983; Rainey and Steinbauer 1999). Overall, the knowledge base is far from clear about what the most important explanatory factors for assessing and measuring the performance of public and nonprofit organizations are (Likert 1967; Miles 1980; Pfeffer 1982; Quinn and Rohrbaugh 1981, 1983; Rainey and Steinbauer 1999). In recent years, some scholars have placed their focus on advocating for and developing more...
comprehensive, multi-dimensional frameworks of organizational performance, seeking to reconcile the aforementioned conflicting models and emphasizing that a concept as complex as organizational performance may be more appropriately captured through a multi-dimensional framework than through a single construct (Cameron 1978, 1981; Quinn and Rohrbaugh 1981, 1983; Rojas 2000). In previous work, we have sought to contribute to the work of these scholars exploring the concept of organizational performance or effectiveness, presenting our own multi-dimensional and hierarchical model of organizational performance or effectiveness (Sowa, Selden, and Sandfort 2001). In this article, we are taking the first step toward refining this model with the use of multi-level random coefficient (or hierarchical) modeling to explore the proposed dimensions of this model.

Using data collected from twenty-two human service organizations providing early care and education services, this article examines a model of organizational performance that emphasizes the importance of capturing the multiple dimensions of performance, management and program performance, and the multiple hierarchical levels of operation existing in an organization. With this model and analysis, we are seeking to contribute to the scholarly debate surrounding the challenges of conceptualizing and measuring organizational performance. While this study does not provide the definitive answer to this debate, it does build on the work of scholars before us, and we believe that it provides some important re-thinking or re-conceptualization concerning the critical components of organizational performance and the measurement of these components that may help improve future debate and research.

CONCEPTUALIZING ORGANIZATIONAL PERFORMANCE

Organization theory has produced a plethora of models exploring organizational performance; in fact, some scholars have stated that there are as many models as there are studies of organizational performance or effectiveness.¹ Since our model builds on the work of previous scholars, we briefly review some of the criteria that have been employed in previous models of organizational performance prior to discussing and analyzing our multi-dimensional model for measuring organizational performance.

Some scholars focus on internal organizational factors when defining criteria of performance, such as organizational goals or the procedures for accomplishing these goals. The rational goal, or purposive-rational model, of organizational performance assumes that organizations are designed to achieve certain goals, both formally specified and implicit. It focuses on the extent to which an organization reaches its goals as the key criterion of performance (Etzioni 1964; Pfeffer 1982; Price 1972). Other scholars emphasize different internal measures when they develop portraits of organizational performance, such as various measures of organizational health (Argyris 1964; Bennis 1966; Likert 1967). Some researchers focus on internal organizational components, such as strong communication systems and stable policies and procedures, that contribute to the achievement of organizational control. Others focus on human relations measures, such as workforce cohesion, morale, and human resource development.

¹ Scholars often use the terminology “effectiveness” and “performance” interchangeably to describe the same phenomenon, the overall ability of organizations to perform well or effectively pursue their missions. Therefore, for the sake of simplicity, we will refer to the phenomenon under investigation as organizational performance.
Still other scholars focus on external factors in developing criteria of performance, emphasizing the relationship of an organization to its environment. The system resource model, developed by Seashore and Yuchtman (1967), defines organizational performance through the overall survival of the organization, “the ability to exploit its environment in the acquisition of scarce and valued resources to sustain its functioning” (Seashore and Yuchtman 1967, 393). Therefore, in this conception, the inputs into an organization are more important than its outputs because an organization’s ability to maintain sufficient resources for survival is the most important indicator of performance. Finally, another approach to conceptualizing performance focuses on an organization’s relationships with key external actors. The ecological model, or the participant satisfaction model, defines organizational performance according to an organization’s ability to satisfy key strategic constituencies in its environment (Boshcken 1994; Connolly, Conlon, and Deutch 1980; Keeley 1978; Miles 1980; Zammuto 1984).

This research demonstrates that, because every organization is slightly different, appropriate criteria for assessing performance might vary. Organizations with clearly defined and easily measured goals may be best assessed using the rational goal model. On the other hand, organizations with more ambiguous goals may be better appraised using other factors, such as fiscal health, the ability to attract and sustain resources, or the ability to satisfy key stakeholders. In addition, in selecting criteria, scholars exercise different value judgments about what is most appropriate in determining organizational performance (Cameron and Whetten 1983). Scholars recognize that different models may shed light on certain facets of performance, similar to the way in which individual pictures may only reveal one aspect of the subject under investigation (Morgan 1997).

Several scholars have tried to address this conundrum by incorporating aspects of each of these models into comprehensive frameworks that should provide a more complete picture of what constitutes organizational performance (Cameron 1981, 1982; Quinn and Rohrbaugh 1981, 1983). Cameron (1978, 1981, and 1982) developed a multi-dimensional approach that attempts to reconcile the system resource, rational goal, internal process, and participant satisfaction models. Quinn and Rohrbaugh (1981, 1983) developed a spatial model of organizational performance that attempts to acknowledge the competing values that surround the assessment of organizational performance. They demonstrate that there are generally three sets of competing values operating in the evaluation of organizational performance: an internal organizational focus versus an external focus, a focus on means versus a focus on ends, and a focus on flexibility versus a focus on control. While it may not be possible to reconcile these values into one measure of performance, by clarifying the values operating in the study of performance or effectiveness, these scholars argue that their framework allows scholars to clearly articulate values, explicitly assign weights to these values, and then develop formula for combining scores on each criterion in the framework.

Multi-dimensional models of organizational performance have gained increasing prominence among public management and nonprofit scholars, with many studies using multi-dimensional approaches and others arguing that the nature of public and nonprofit organizations demands such frameworks that capture multiple dimensions of these organizations (Cameron 1982; Forbes 1998; Herman and Renz 1997, 1999; Kushner and Poole 1996; Ostroff and Schmitt 1993; Rainey and Steinbauer 1999; Rojas 2000). In our previous work, we have added to this by suggesting a model of organizational performance that puts an emphasis not only on the multiple dimensions that comprise organizational
performance but also on the multiple, hierarchical levels at which performance must be measured in an organization in order to gain a complete picture as to its performance. We propose this model following the logic of Campbell (1977, 18), who states, “A better way to think of organizational effectiveness is as a construct that has no necessary and sufficient operational definition but that constitutes a model or theory of what organizational effectiveness is. The functions of such a model would be to identify the kinds of variables we should be measuring and to specify how these variables, or components interrelate—should be interrelated.” The following section describes the assumptions that drive the model being tested in this article, focusing on the dimensions of performance and the different measures that should be included in a multi-dimensional model.

A MULTI-DIMENSIONAL MODEL OF ORGANIZATIONAL PERFORMANCE

The model proposed in this article posits that organizational performance is comprised of two primary and distinct dimensions: management and program. “Management” refers to organizational and management characteristics—the things which describe an organization and its capabilities and the actions of managers within it. Measures of management encompass variables that tap structure and process as well as those that represent the outcomes of these management systems and activities. “Program” refers to the specific service or intervention provided by the organization. It also has variables that relate to the structure and process of the program as well as the outcomes created by the intervention. Before delving more deeply into the specific measures included in this model, we present the underlying assumptions driving this framework or model of organizational performance.

Assumption 1 There are multiple dimensions of performance, with the primary dimensions being management and program performance.

In specifying multi-dimensional frameworks or models of organizational performance or effectiveness, scholars have generally differentiated dimensions along certain theoretical premises or assumptions. We believe that a fruitful distinction is between the effectiveness of management of an organization and the effectiveness of the programs that the organization operates. Organizational performance is more than the mere outcomes of the programs it operates or the services it provides. It is also a function of its management structures, how well they operate, and their impact on the most crucial organizational resource, its employees. This is particularly true in public and nonprofit organizations, especially human service organizations, where staff play an essential role in translating organizational inputs into outputs (Hasenfeld 1983). Improving management effectiveness or performance and overall organizational capacity may lead to better program performance, as organizational capacity or management effectiveness can provide a foundation for the sustainability, improvement, and growth of programs (Letts, Ryan, and Grossman 1999).

Assumption 2 Management performance and program performance are further composed of two subdimensions: (1) processes and structures and (2) outcomes.

For each primary dimension, this model examines two additional subdimensions of performance (Herman and Renz 1999; Scott 1977). The first encompasses both processes
and structures, and the second includes outcomes. Processes and structures refer to how the organization or program operates, the operating processes that dictate and direct action, and the structures in place. In operationalizing these processes and structures, we collapsed them into two sets of measures that more completely capture these complex management and program characteristics, management capacity and program capacity. Outcomes are the results caused by management and program activities, by this management and program capacity. Too often, outcomes alone become the indicators of choice for representing organizational effectiveness or performance. However, one only need interview staff within such organizations to discern complex dynamics hidden behind those outcome measurements. We maintain that to improve outcomes, organizations need to understand how their management and program capacities enable or hinder those outcomes. Therefore, we argue that both sets of measures should be included in a comprehensive model of organizational performance.

It is not uncommon for scholars to use multiple indicators of processes/structures and outcomes in research about performance; however, they often examine indicators only within one of the primary dimensions. Assessments of programs, along both processes/structures and outcomes, are found in schools (Arum 1996; Chalos and Cherian 1995; Ferguson 1991) and job training programs (Hasenfeld and Weaver 1996; Heinrich 1999). Assessments of management, along both processes/structures and outcomes, have occurred in public bureaucracies, state governments, and public health clinics (Ammar et al. 2001; Ingraham and Donahue 2000a, 2000b; Ingraham and Moynihan 2001). However insightful the results of these studies, we maintain that focusing on either programs or management paints only part of the picture of the complex dynamics of organizational performance.

Assumption 3 Both objective and perceptual measures are needed to fully capture the dimensions of performance.

For each of the subdimensions within management performance and program performance, we assert that researchers must collect two types of measures to better understand the constructs, objective and perceptual.\(^2\) Social constructionist theory informs much recent work in organizational studies and teaches us about the impact of “meanings” made by staff, management, and clients on how phenomena influence organizational operation (Herman and Renz 1999; Scott 1995; Weick 1995).\(^3\) Including both perceptual and objective measures enables scholars to better capture the full picture of the actual construct of organizational performance being studied. Merely having a state-of-the-art

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\(^2\) While some might argue that there are no “true” objective measures, we distinguish the measures based on observation of the actual presence or absence of processes and structures as “objective” and the measures based on staff perceptions or beliefs of these factors as “perceptual.”

\(^3\) In addition, we do not include measures of all possible external stakeholder perceptions in our model; the only external stakeholders we are including are the clients of the organization. As demonstrated by Herman and Renz (1997), external stakeholders often have very different perceptions than the perceptions of the employees and clients of an organization as to what constitutes both effective practice and effective outcomes. Therefore, due to the different values that are often operating with stakeholder assessments of organizational performance in comparison to the values operating within the organization itself and within the client groups that the organization serves, we believe that it is most useful to view external stakeholder assessment of organizational performance as a separate performance assessment process that should be treated apart from an assessment of performance based on the management and program operations of an organization.
management system does not necessarily indicate that it functions effectively. An organization may have a sophisticated and integrated information technology system but may continue to process forms, such as program attendance sheets, manually. By including perceptual measures alongside objective measures, scholars may examine the degree to which these structures, processes, and outcomes align with the perceptions of those that participate in the organization on a day-to-day basis.

Therefore, based on these three assumptions we have developed the following ideal conceptual model that posits the interrelationship between the different dimensions of performance, management and program, and the subdimensions of management and performance, management and program capacity, and management and program outcomes (figure 1). The following section describes the methodology employed to test this model, including the data used to operationalize these multiple dimensions and subdimensions of performance.

**DATA AND METHODS**

The data used in this study were gathered from twenty-two human service organizations providing early care and education services to low-income children in New York and the Commonwealth of Virginia. Gathered between June 2000 and June 2003 as part of a large multiple case study design, this data includes multiple surveys, archival document analysis, coded interview data, and structured observations. In addition, this data includes variables captured from both organizations and clients. We received a 100 percent response rate on surveys collected at the organizational level from managers and frontline workers. We surveyed 394 clients (parents) and obtained an 81 percent response rate.

Our analysis of the multi-dimensional model of organizational performance is two-fold, focused on exploring the selected measures to capture the different dimensions of performance.
performance and then exploring the relationship between the dimensions. First, we compare the objective and perceptual measures of each of the primary constructs. We examine the reliability, correlations, and means of each set of measures. Second, we use multi-level random coefficient (or hierarchical) modeling to examine the relationship between the different aspects of management and program capacity on program outcomes, as measured by school readiness, taking into account environmental factors (Bryk and Raudenbush 1992; Joreskog et al. 2000).

We use multi-level random coefficient modeling because it allows for one to simultaneously investigate relationships within a particular hierarchical level, as well as relationships between or across hierarchical levels. This method provides a direct means of describing the extent to which a given client-level outcome, such as school readiness, varies across organizations. It recognizes that clients within an organization may be more similar to one another than clients in other organizations. Because this approach models both individual and organization residuals, it captures the partial interdependence of clients within the same organization. In other words, it formally adjusts for nonindependence of clients in the same organization (Bryk and Raudenbush 1992). If this type of nonindependence is not modeled, the estimated standard errors may be biased downward. This may, in turn, lead to misleading conclusions about the statistical and substantive impact of organizational variables (Snijders and Bosker 1999). Multi-level random coefficient modeling explores both lower-level and higher-level unit variance in the outcome measure, while maintaining the appropriate level of analysis for the other variables.7

As mentioned previously, our model, in practice, has two levels; the first level is client. Independent variables measured at this level include parental age, level of education, gross income, employment status, and perception of teaching quality. The response or dependent variable is the parent’s perception of his or her child’s school readiness. The second level is organization; we include measures about management outcomes, management capacity, and program capacity. In this study, we examine whether there is a relationship between management outcomes, management capacity, program capacity, and program outcomes. Ideally, we wanted to estimate the full model displayed in figure 1; however, as with any attempt to measure or implement a theoretical “ideal” model, challenges arose, as multi-level modeling only allows response or dependent variables on level 1 (Mels 2003).8 As a result, we estimate only the direct effects of management processes (as captured as management capacity) on program outcomes (see figure 2). In addition, because we are limited to twenty-two observations at level 2, we are unable to incorporate a confirmatory factor analysis structure into our analysis. Therefore, we developed a series of additive indices that are included in the analysis (see appendix). We constructed each index after factor analyzing and examining the reliability of the indicators.

DEVELOPING AND COMPARING MEASURES OF ORGANIZATIONAL PERFORMANCE

To operationalize the dimensions of organizational performance described in this article, we drew indicators from the many studies of public and nonprofit organizational performance and then exploring the relationship between the dimensions. First, we compare the objective and perceptual measures of each of the primary constructs. We examine the reliability, correlations, and means of each set of measures. Second, we use multi-level random coefficient (or hierarchical) modeling to examine the relationship between the different aspects of management and program capacity on program outcomes, as measured by school readiness, taking into account environmental factors (Bryk and Raudenbush 1992; Joreskog et al. 2000).

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7 For a thorough discussion of this method and an example of its application to model performance management, see Heinrich (2002).
8 Extensive research was undertaken to determine an appropriate statistical method to undertake full measurement of the ideal model proposed in figure 1. Unfortunately, none was found at the time this analysis was conducted.
performance or organizational operation. The following discussion describes in more
detail the selected objective and perceptual measures of the constructs: management
outcomes, management capacity, program capacity, and program outcomes, in more detail.
We provide information on the operationalization of each of the variables included in the
analysis and information about the construction of each index used in the analysis,
including the range, mean, standard deviation, and alpha coefficient (see table 1, table 2,
and appendix). In addition, we examine the relationship between the objective and
perceptual indicators of each performance-related construct to ensure that the measures are
tapping different dimensions of the construct.

Management Outcomes

We include one set of factors related to management outcomes: voluntary turnover
(objective measure) and operating staff job satisfaction (perceptual measure). In the human
resources management literature, organizational turnover is often the primary indicator of
the effectiveness of management, both its systems and procedures (Campbell 1977;
Davidson 1998; Delery and Doty 1996; Fitz-enz 1994; Markowich 1995; Martinez 1996;
Ulrich 1997). Lower turnover is indicative of a stronger, more effective organization; in
part, this is because turnover creates high organizational costs when an employee departs,
such as the cost of recruiting and training a new employee and the time needed to bring
a new employee through the learning curve (Cascio 1982; Price 1977). Turnover has been
especially troublesome in particular job areas, such as information technology, and
sometimes the difficulty of hiring and retaining in particular areas results in additional
expenditures for higher salaries or recruiting bonuses or the reallocation of existing
resources (Selden and Moynihan 2000). Finally, like Phillips (1996), we believe that

9 Determining the “best” indicators to select can be an almost impossible task to perfect, as there are numerous
measures that have been argued to be important for assessing performance. Campbell (1977), in an early examination of
this topic, specified thirty different variables that had been used as indices of performance or effectiveness.
employee job satisfaction, measured by the line staff’s assessment of the satisfaction they have in conducting their duties and their overall motivation for work, is a useful and appropriate perceptual measure of management outcomes.

Many previous studies of organizational performance have included job satisfaction as a key indicator of this concept (Campbell 1977; Van de Ven and Ferry 1980). Both of these measures are important outcomes of the management system; however, because these variables are not significantly related, they appear to be tapping something different in evaluating the performance of management in an organization. The correlation between these two variables is negative as expected, –.11, but not statistically significant. Moreover, as shown in tables 1 and 2, while voluntary turnover is exceedingly high in the organizations examined in this study, on average 21 percent per year, the average employee’s job satisfaction does not reflect an overly negative view of the organization. Even though employees are relatively satisfied, many are still making the choice to leave their positions. Here, it is important to include both the objective and the perceptual measure of employee satisfaction to truly capture the dynamics in the organizations. The data indicates that employees are leaving the organizations rapidly, but they are not overly dissatisfied with their positions. The disparity of this finding raises serious questions concerning what is going on within the field of early care and education, the possible management systems and operational problems that may exist in these organizations, and how these problems are affecting the overall performance of the human service organizations in this field.

Management Capacity

Generally, scholars find that more effective nonprofit and public organizations have similar management practices, certain structures, and processes that are generally accepted as the

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Objective Measurements</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Management outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voluntary turnover</td>
<td>21.35</td>
<td>14.95</td>
</tr>
<tr>
<td></td>
<td>Management capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information technology system</td>
<td>2.12</td>
<td>1.51</td>
</tr>
<tr>
<td></td>
<td>Mission statementa</td>
<td>0.52</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>Written financial policiesa</td>
<td>0.64</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td>Training expenditures per staff member</td>
<td>$434.77</td>
<td>$708.32</td>
</tr>
<tr>
<td></td>
<td>Annual performance evaluationa</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Starting annual teacher’s salary</td>
<td>$18,539.12</td>
<td>$4,675.49</td>
</tr>
<tr>
<td></td>
<td>Program capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classroom quality</td>
<td>5.11</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>Diversity of services offered</td>
<td>10.68</td>
<td>4.68</td>
</tr>
<tr>
<td></td>
<td>Education of lead teacherb</td>
<td>3.42</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Years of experience in early education</td>
<td>11.20</td>
<td>5.99</td>
</tr>
</tbody>
</table>

aScale from 0 = No to 1 = Yes.
bScale as follows: 1 = Some high school; 2 = High school; 3 = Associate’s degree; 4 = Bachelor’s degree; 5 = Some graduate school; 6 = Master’s degree; 7 = PhD.
best practices within the field (Herman and Renz 1998, 1999). We have collapsed many
different process and structure measures into a comprehensive management construct
conceptualized as management capacity. We view management capacity as the degree to
which the necessary systems and processes are in place to maintain an organization
(Ingraham and Donahue 2000a, 2000b). Three sets of objective and perceptual variables
are included as indicators of management capacity: management infrastructure, employee
training, and performance management system (see tables 1 and 2). First, we include three
objective measures to probe the management infrastructure of the organization (IT system,
mission statement, and written financial policies). We also include a perceptual measure of
the infrastructure of management. Table 3 presents the correlations of these variables.
Looking across the three objective measures, on average, the infrastructure in these
organizations is only partially developed, with, for example, just over half of the
organizations studied having a mission statement. The perceptual measure of management
infrastructure is also not overly positive, with the average value \( \frac{8.37}{3} = 2.79 \) suggesting
that management does not always create conditions that promote organizational learning
and the management capacity present in these organizations may not be working to its
full potential.

The other two other dimensions of management capacity relate to the human
resource management (HRM) systems. The first component of the human resource
management system examined is training. The two objective measures of the training
system are not significantly correlated with the frontline staff or teachers’ perceptions of
training (see appendix). Both sets of indicators, however, do suggest that, on average, the
organizations studied commit considerable resources to training. The second HRM
system examined is the performance management system; this includes measures of
feedback and compensation. All of the organizations in the study conduct annual
performance reviews; however, comparatively, teachers do not perceive that regular
feedback is an organizational norm. This further illustrates the importance of collecting
both objective and perceptual information. As argued, the data shows that having
a program in place does not necessarily mean it is implemented or that it produces
meaningful information and/or action. Finally, teachers are extremely dissatisfied with
their pay \( \{6.12/4\} = 1.53 \) on a five point scale). Considering that the average salary of
teachers in these organizations is $18,539, this finding is not surprising. There is

Table 2
Perceptual Measurements

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management outcomes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job satisfaction (teacher perception)</td>
<td>14.70</td>
<td>1.49</td>
</tr>
<tr>
<td>Management capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management infrastructure (teacher perception)</td>
<td>8.37</td>
<td>2.17</td>
</tr>
<tr>
<td>Perception of training provided (teacher perception)</td>
<td>9.84</td>
<td>1.77</td>
</tr>
<tr>
<td>Perception of feedback (teacher perception)</td>
<td>6.38</td>
<td>1.39</td>
</tr>
<tr>
<td>Satisfaction with salary (teacher perception)</td>
<td>6.12</td>
<td>3.30</td>
</tr>
<tr>
<td>Program capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception teacher quality (parent perception)</td>
<td>19.92</td>
<td>3.13</td>
</tr>
</tbody>
</table>
a moderate relationship between the average salary of teachers and teachers’ satisfaction with their pay ($r = .34$).

**Program Capacity**

We include several indicators of program capacity, indicators centered on evaluating the capacity of these organizations to provide early care and education services. We focus on the quality of the classroom, the quality of the teachers, and the nature of the services provided as the measures of the overall capacity of these organizations to provide early care and education services. We use the Early Care Environment Rating Scale (ECERS) to measure process quality or capacity in the classroom. The three other objective measures of program capacity include the education of the lead teacher, the experience of the lead teacher, and the diversity of services provided by the organization, commonly used indicators of quality early care and education services (Helburn and Bergmann 2002; Lombardi 2003). We include one perceptual measure of program capacity, the parents’ perception of the quality of the teacher. The correlations between the variables capturing these dimensions are presented in table 4. Parents’ perceptions of program quality were not statistically related to the four objective measures of program capacity: classroom quality, education of the lead teacher, experience of the lead teacher, and the diversity of services provided to clients.

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**Table 3**

<table>
<thead>
<tr>
<th>Correlation Matrix of Program Capacity Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Capacity</td>
</tr>
<tr>
<td>Information technology system (IT)</td>
</tr>
<tr>
<td>Mission statement* (MS)</td>
</tr>
<tr>
<td>Written financial policies* (WFP)</td>
</tr>
<tr>
<td>Management infrastructure (teacher perception) (MI)</td>
</tr>
<tr>
<td>Training expenditures per staff member (TrExp)</td>
</tr>
<tr>
<td>Perception of training provided (teacher perception) (TrP)</td>
</tr>
<tr>
<td>Perception of feedback (teacher perception) (Feedback)</td>
</tr>
<tr>
<td>Starting annual teacher’s salary (ATS)</td>
</tr>
<tr>
<td>Satisfaction with salary (teacher perception) (SS)</td>
</tr>
</tbody>
</table>

*Significance at .05 level or higher.

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The instrument is comprised of thirty-seven items in the following seven areas: personal care routines, language reasoning experiences, activities, staff–child interaction, program structure, and parent and staff. Each of the thirty-seven items are rated a 1 (minimal) to 7 (excellent) by an observer (Harms, Clifford, and Cryer 1998). The instrument has been widely used in research on early education and care (Vandell and Wolfe 2002).
### Program Outcomes

As stated, we use parental assessments of the school readiness of their children as the program outcome produced by these human service organizations providing early care and education services. While school readiness is only one outcome sought by some of the programs examined in this study, we contend that it is one of the most important outcomes in a study of early care and education, the particular programming under examination. Many state legislatures have invested in preschool programs believing that “participation in high quality early childhood education programs increases children’s readiness for school” (Ferguson qtd. in Proceedings 1999, 2). Moreover, as the amount of public support for early care and education increases, external pressures increase to hold those programs accountable for school readiness (Bowman, Donovan, and Burns 2000). The “best” method of measuring school readiness has not yet been determined, presenting a challenge in selecting the most appropriate measure of this outcome (Bowman, Donovan, and Burns 2000; Love, Aber, and Brooks-Gunn 1999; Proceedings 1999). Kagan notes that “a decade after the call was issued an agreed-upon standard [of school readiness] is not yet in place” (Kagan qtd. in Proceedings 1999, 3). A report by the National Research Council notes the potential misuses of traditional standardized tests and measurements and Love, Aber, and Brooks-Gunn (1999) suggest using a diversity of methods to gauge school readiness. Love, Aber, and Brooks-Gunn’s recommendation (1999) is to measure school readiness using parental reports, kindergarten and first teacher reports, principal and assistant principal reports, and community data. Since we do not track preschool students after they leave their programs in this study, we are limiting our analysis to parental reports of school readiness.11

The descriptive analyses presented in this section, tables 1–4, and the appendix illustrate the importance of incorporating multiple dimensions of performance and different types of measures. If studies rely primarily on objective measures of management and program systems or capacity, they may fail to capture the complexity that challenges management of all organizations—the gap between the adoption and implementation, or perceived implementation, of management systems and program characteristics or capacity. Given that the aforementioned indicators of management and programs are tapping different aspects of management and program capacity (indicated by the bivariate correlations and factor analysis not presented herein but available from the authors), it is

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11 To collect objective measures of a child’s school readiness, we would need to directly assess and observe each individual child. Because of resource constraints, we did not collect “objective” measures of school readiness.
Important to include the different dimensions and measures of management and program capacity in an equation explaining the ultimate bottom line for these organizations, client (program) outcomes. Next, we present our multivariate analysis of the model presented in figure 2.

**MULTIVARIATE RESULTS**

Table 5 shows the results of the multi-level random coefficient model of program outcomes in the twenty-two organizations. The organization level variables explain 73 percent of the organizational level variations in the school readiness outcome. The client level variables explain 38 percent of the variation in the school readiness outcome. The latter finding is particularly interesting because approximately 74 percent of the total variation in the school readiness measure is within organization (at the client level). Given that many factors outside the context of the program in which a child is enrolled may influence a child’s school readiness, such as a child’s innate cognitive capacity and family environment, it is not surprising that more variation occurs at the individual level and that

**Table 5**

Multilevel Random Coefficient Model of Performance

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>6.50***</td>
</tr>
<tr>
<td>Management outcomes</td>
<td></td>
</tr>
<tr>
<td>Voluntary turnover</td>
<td>0.001</td>
</tr>
<tr>
<td>Job satisfaction (teacher perception)</td>
<td>0.09***</td>
</tr>
<tr>
<td>Management capacity</td>
<td></td>
</tr>
<tr>
<td>Information technology system</td>
<td>-0.06***</td>
</tr>
<tr>
<td>Mission statement</td>
<td>.37***</td>
</tr>
<tr>
<td>Written financial policies</td>
<td>-0.06</td>
</tr>
<tr>
<td>Management infrastructure (teacher perception)</td>
<td>-0.053***</td>
</tr>
<tr>
<td>Training expenditures per staff member</td>
<td>0.00**</td>
</tr>
<tr>
<td>Perception of training provided (teacher perception)</td>
<td>-0.15***</td>
</tr>
<tr>
<td>Perception of feedback (teacher perception)</td>
<td>.10***</td>
</tr>
<tr>
<td>Starting annual teacher’s salary</td>
<td>0.00***</td>
</tr>
<tr>
<td>Satisfaction with salary (teacher perception)</td>
<td>.04***</td>
</tr>
<tr>
<td>Program capacity</td>
<td></td>
</tr>
<tr>
<td>Classroom quality</td>
<td>.24***</td>
</tr>
<tr>
<td>Diversity of services offered</td>
<td>-0.03*</td>
</tr>
<tr>
<td>Education of lead teacher</td>
<td>.04**</td>
</tr>
<tr>
<td>Lead teacher’s years of experience in field</td>
<td>-0.03***</td>
</tr>
<tr>
<td>Perception teacher quality (parent perception)</td>
<td>0.20***</td>
</tr>
<tr>
<td>Environmental controls</td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>-0.46***</td>
</tr>
<tr>
<td>Parent’s age</td>
<td>-0.01</td>
</tr>
<tr>
<td>Parent’s gross income</td>
<td>-0.03</td>
</tr>
<tr>
<td>Parent’s level of education</td>
<td>-1.26**</td>
</tr>
</tbody>
</table>

NOTE: $-2\times$Log (likelihood) = 496.81.
*Significant at .10 level; **significant at .05 level; ***significant at .01 level.
the model explains less of it. Other studies have found similar trends (see for example Heinrich 2002).

When looking at the two measures of management outcomes, only the perceptual measure, job satisfaction, is statistically significant. There is an expected increase of .09 in school readiness for each unit increase in the teaching staff’s job satisfaction. Numerous studies have demonstrated that in providing early care and education services, teaching staff is a crucial variable in explaining early care and education quality (Gormley 1995). In addition, more generally for human service organizations, employees are the crucial raw material of these organizations; the service technology of most human service organizations depends upon their frontline workers (Hasenfeld 1983). How well these employees are managing, and therefore the degree to which they are satisfied in the organization (the aforementioned management outcome), will have a significant impact on the programs provided by these organizations. Our results demonstrate that this is the case. Interestingly, voluntary turnover, our objective measure of management outcomes, is not statistically significant. Because voluntary turnover is so high in this field, parents may be accustomed to teachers leaving during the year, and therefore it may not influence their perception of how well their children are being prepared as long as the quality of the replacement staff is similar to the staff that left (Helburn and Bergmann 2002; Lombardi 2003).

Looking across the nine measures of management capacity used to predict this model, all but one are statistically significant. However, three of the indicators have a negative impact on parents’ perceptions of their child’s school readiness. The management capacity variables that have a positive and significant impact on school readiness are adoption of an organizational mission statement, training expenditures per staff member, perception of performance feedback, starting salary of teachers, and satisfaction with salary. These variables would generally indicate a high management capacity and therefore a better capacity to accomplish organizational and program objectives.

The objective and perceptual measures of salary have both a positive and significant impact on school readiness. Historically, the salaries in the early care and education field are considered low compared to the civilian workforce (Whitebrook, Howes, and Phillips 1998). In fact, the gap between wages of early education and care teachers and the wages of civilian labor widens as educational level increases (Whitebrook, Howes, and Phillips 1998). The National Child Care Staffing Study found that wages were the most important predictor of staff turnover (Whitebrook, Howes, and Phillips 1998, 74). Even controlling for turnover, we find that teaching staff salaries and teachers’ satisfaction with their salaries are important predictors of school readiness. The consistency in findings across the objective and perceptual measures highlights the saliency and importance of compensation in this field.

Our measures of training are significant but not in the same direction. The positive relationship of training dollars spent per early care and education staff demonstrates the extent to which an organization actually commits to improving its teaching staff. However, there appears to be a knowledge or learning gap between the actual training provided and the degree to which the teachers in these organizations internalize that training (see table 3). Exploring that gap is beyond the scope of this project but represents an important line of inquiry for future research. Nonetheless, the overall commitment of these organizations to the training of their staff shows the positive impact that management capacity can have on program outcomes. It also highlights the importance of looking at management capacity variables, such as training, both from the organizational perspective and from the frontline
perceptive. It is not enough simply to understand the capacity in place; scholars also need to understand how staff makes sense of that capacity (Weick 1995).

Like management capacity, the results for the indicators of program capacity are mixed. Several of the objective measures, teacher experience and actual services offered, have a significant but negative impact on school readiness. On the other hand, as stated, our perceptive measure of teaching quality, teacher education, and classroom quality are positive and significant. Classroom quality is particularly important because it represents the technology used to prepare children for kindergarten. The data suggest that parents’ perceptions of quality and the actual classroom quality are important predictors of their assessment of their child’s readiness for school. Our findings that teacher quality is an important predictor are consistent with Henry, Henderson, and Basile’s (2002) research that demonstrated a strong linkage between teaching styles and child readiness for kindergarten. Also consistent with the early care and education literature, we found a significant linkage between the education of the lead teacher, another commonly used measure of quality, and student readiness for school (Bowman, Donovan, and Burns 2000; Vandell and Wolfe 2002). Therefore, while some of the indicators of program capacity do not perform as expected, possibly due to low overall measures of these indicators, in general we found that many of the important indicators of program capacity have the predicted impact on the program outcomes.

The model also included control variables related to parents’ socioeconomic level and whether the site is located in New York. Two control variables impacted parents’ perceptions of school readiness. One control variable that impacted school readiness was whether the organization is located in New York. There are many possible explanations for this, some that may be out of the purview of this article. However, a strong possible explanation may be that parents in New York have higher expectations for early education and care than those in Virginia. New York is generally considered one of the leading states in terms of resources and regulations in early education and care (Education Week 2002). Parents, possibly being aware of this, may expect more from these organizations providing early care and education in New York in comparison to those parents in Virginia. However, without deeper exploration of the parents’ perceptions in the two states, it is difficult to determine an exact explanation for this finding. The second variable that impacted school readiness is parental education. Better educated parents were less positive about their child’s readiness for school.

DISCUSSION

Limitations and Challenges

While the results of this analysis demonstrate some important inter-connections between the theorized dimensions of performance, they should be interpreted in light of several limitations arising from methodological challenges encountered. First, the multilevel random coefficient model provides more power than ordinary least squares regression when considering the impact of having a nested structure. The sample size at level 2 was relatively small. This may result in an inability to detect some possible effects. Moreover, it is impossible to estimate the indices using confirmatory factor analysis within the multilevel analysis because of the small level 2 sample. Replication of these findings using larger samples of organizations is needed.
Second, the negative relationships between some of the measures of management capacity and program outcomes may be influenced by the inability to estimate indirect effects in multilevel modeling. The methodological tool used in this analysis did not allow us to estimate the effects of management capacity on management outcomes and then the effect of these outcomes on program outcomes. The results presented in this article are important, but future research should explore other avenues to estimate the model proposed in figure 1.

Third, because our sample is limited to a small number of early care and education organizations in New York and Virginia, these findings may not generalize to individuals living in different states. Moreover, selective attrition of parents may limit the generalizability of these findings. Because data were collected over an academic year, some parents left the programs under study.

Possibilities

Nonetheless, while we have not completely examined the theorized interrelationships in our ideal model of organizational performance (as demonstrated in figure 1), the analysis presented in this article has advanced the development of this model in several important ways. First, we have demonstrated that these two dimensions of organizational performance, management and program, are clearly distinct and together must be assessed to provide a more complete picture of organizational performance. We have demonstrated that management capacity and management outcomes have an impact on program outcomes, along with the impact of the overall capacity of the program. In addition, we have shown that both objective and perceptual measures are crucial in evaluating performance. We explore the match (or lack thereof as demonstrated with some of our measures) between objective reality and staff’s perceptions of this reality. This approach can lead scholars to more fully understand what is occurring in an organization. In exploring the operation of any organization, we must be attentive to both the structure and processes in place and the degree to which these processes and structures (conceptualized here as capacity) are actually operating at the level intended. In addition, we have demonstrated that perceptions of management outcomes are as important as objectively assessed management outcomes and should therefore be included in any model seeking to capture organizational performance.

With this model and the empirical examination of it presented in this article, we have provided persuasive evidence that scholars seeking to explore organizational performance should investigate factors at both the management and the program level. In addition, scholars need to gather both objective and perceptual measures on important indicators of performance in order to examine the full implementation and evaluation of these key indicators of performance. Our model can be further developed through additional studies that employ larger samples in order to refine the concepts and measures put forward in this article. In addition, this model can be further improved by examining the indirect effects discussed in the earlier section. Again, we recognize that the model and analysis presented in this article by no means represents the final word on organizational performance. However, we believe that it is a useful contribution to the ongoing challenge of assessing the performance of nonprofit and public organizations and will hopefully contribute to increased dialogue about and further study and research of organizational performance.
CONCLUSION

This article presents a framework for conceptualizing and operationalizing organizational performance that is applicable to multiple settings, including nonprofit and public organizations. The multi-dimensional framework of organizational performance identifies constructs that transcend policy settings, allowing for the measurement of some of these constructs to be determined by the program environment. It discourages scholars from adopting a “one size fits all” approach to organizational performance or to assume that indicators of similar constructs will operate similarly. Our findings demonstrate that objective and perceptual measures may yield different results. Therefore, including both types of measures can yield crucial information about the health of an organization. Our work indicates that scholars should be purposeful in their sampling of multiple types of indicators to fully capture the complexity of organizational performance. Over time, while many of the program measures will differ by context, scholars can accumulate evidence across organizations and programs about the impact of management practices and program capacity on program outcomes. As the knowledge base grows within and across policy and program boundaries, scholars will be able to identify how forces in larger organizational sets influence outcomes, such as high employee turnover, in particular settings.

APPENDIX

Construction of Indices

Program Outcome

School Readiness (Mean = 6.43; SD = 1.09; Actual range = 1–7; Cronbach Alpha = .84), following two questions combined, all with scales from 1 = Strongly disagree to 5 = Strongly agree.

1. Helping my child to grow and develop?
2. Preparing my child to enter kindergarten?

Management Outcomes

Voluntary Turnover: Percentage of teaching staff that left the organization voluntarily (annual).

Teaching Staff Job Satisfaction (Mean = 14.70; SD = 1.49; Actual range = 1–17; Cronbach Alpha = .74), following four questions combined, all with scales from 1 = Strongly disagree to 5 = Strongly agree.

1. Overall, I enjoy the work I do.
2. In general, I am satisfied with my job.
3. I intend to work in early childhood education at least two more years.
4. I’m not in a dead-end job.

Management Capacity

IT System (Mean = 2.12; SD = 1.51; Actual range = 1–5), following five questions combined, all with scales from 0 = No to 1 = Yes.

Does your organization employ specialized computer software to do the following?
1. Track enrollment
2. Collect parent payment
3. Bill outside vendors
4. Track child assessments
5. Manage staff scheduling

**Management infrastructure** (Mean = 8.37; SD = 2.17; Actual range = 1–13; Cronbach Alpha = .90), following three questions combined, all with scales from 1 = Strongly disagree to 5 = Strongly agree.

1. We are encouraged to experiment when we are faced with a new situation.
2. We evaluate the results of these experiments and incorporate lessons into the way we “do business.”
3. We effectively maintain and utilize records of organizational experiences.

**Teaching Staff Perception of Training Provided** (Mean = 9.84; SD = 1.77; Actual range = 1–13; Cronbach Alpha = .90), following three questions combined, all with scales from 1 = Strongly disagree to 5 = Strongly agree.

1. I get the training I need to go my job well.
2. I get the training I need to further develop my skills.
3. I have the opportunity to learn skills that will improve my chances for promotion.

**Teaching Staff Perception of Performance Feedback Provided** (Mean = 6.38; SD = 1.39, Actual range = 1–9; Cronbach Alpha = .80), following two questions combined, all with scales from 1 = Strongly disagree to 5 = Strongly agree.

1. I receive annual, formal feedback about my performance.
2. I receive regular coaching and feedback about my performance.

**Teaching Staff Perception of Satisfaction with Salary** (Mean = 6.12; SD = 3.30; Actual range = 1–17; Cronbach Alpha = .96), following four questions combined, all with scales from 1 = Strongly disagree to 5 = Strongly agree.

1. In general, I am satisfied with my salary.
2. My salary is fair considering my background and skills.
3. My salary is fair considering my job responsibilities.
4. In general, I am satisfied with my pay given the amount of work I do.

**Program Capacity**

**Parent Perception of Teacher Quality** (Mean = 19.92; SD = 3.13; Actual range = 1–22; Cronbach Alpha = .89), following seven questions combined, all with scales from 1 = Never to 4 = Always.

1. My child gets lots of individual attention.
2. The teacher is warm and affectionate to my child.
3. My child is treated with respect by teachers.
4. The teacher handles discipline matters easily without being harsh.
5. My child’s teacher is open to new information and learning.
6. The teacher is supportive of me as a parent.
7. The teacher accepts the way I raise my child.

Diversity of Services (Mean = 10.68; SD = 4.68; Actual range = 1–20), following twenty questions combined, all with scales from 0 = No to 1 = Yes.

Please provide the following information about the types of services that are provided to at least some children at the child care site:
1. Vision screening
2. Hearing screening
3. Dental screening
4. Dental services
5. Medical screening
6. Medical services
7. Social service referrals
8. Mental health screening
9. Mental health counseling services
10. Speech therapy
11. Social services assistance for parents
12. Physical therapy
13. Transportation from home to program
14. Transportation from program to home
15. Nutritionist available for parent consultation
16. Breakfast
17. Lunch
18. Evening care
19. Weekend care
20. Sick child care

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