

**Relationship between Capacity and  
Use of Performance Information in Nonprofit Arts Organizations**

**Alicia M. Schatteman, Associate Professor  
Northern Illinois University  
Department of Public Administration  
1425 W. Lincoln Highway  
DeKalb, IL 60115  
aschatteman@niu.edu  
815-753-0942**

**and**

**Li-Yin Liu, Assistant Professor  
University of Dayton  
Department of Political Science  
Dayton, OH**

There are many reasons nonprofit organizations want to show the impact they are making. Donors want to know how their donations are being used to create positive change in their community. Funders often require nonprofits to measure impact, even if they only fund direct program costs (Thomson 2010, Thomson 2011). Organizations that receive public funds in the form of grants or contracts, more common among health and social service organizations, are often required to measure and report on their impact (Smith 2010; Martin 2002; Gordon 2001). Engaging in performance measurement activities are also seen as a signal of high quality client service (Slatten, Guidry & Austin, 2011). Internally, nonprofits may use performance data to allocate limited financial resources to the programs and services that yield the best results. To use performance data to inform internal decision-making or to report to external stakeholders, nonprofits need to invest in certain areas. While there is greater interest in the use of performance information, there is limited empirical evidence that examines what organizational capacities drive use of that information in nonprofit organizations. In this research, we seek to understand how specific organizational capacities contribute to the use of performance information in nonprofit arts organizations. Arts organizations are a unique sub-sector in that they rely on earned revenue from things like ticket sales but they also receive contributed income. Nonprofit arts organization are also important to study because they have a higher than average failure rate (Bowen, Nygren, Turner, and Duffy 1994; Hager 2001).

This research also addresses a research gap in two important ways. While some researchers (Knox and Wang 2015; Moynihan, Pandey and Wright 2011) have examined the

relationship between adoption of performance measurement and capacity, this study focuses on the actual use, rather than just adoption, of performance information. Second, we use the Capacity Framework by McKinsey & Company (2001) and refined by Grønbjerg et al. (2007) and Grønbjerg, and McGiverin-Bohan (2010) to examine specific organizational capacities (operations and governance, human resource management, programs and planning, marketing, networking and advocacy, financial resources and information technology) and use of performance information.

In the following section, we highlight some of the literature on the use of performance information in the nonprofit sector, followed by a discussion of previous research on the capacity of nonprofit organizations to use performance data. We then test a model to determine what types of capacity are associated with higher levels of use of performance information in nonprofit arts organizations. The paper concludes with a discussion of findings and opportunities for future research.

## **Literature Review**

Since the late 1960s, public services are more likely to be provided via contracts with nonprofit organizations than by public employees (Boris, de Leon, Roeger and Mikolova 2010; Martin 2001; Salamon 2002), and traditional government grants to nonprofits have largely been replaced with performance contracts (Smith 2010; Martin 2002; Gordon 2001). Because government contracts are an important source of revenue for nonprofit organizations (Gazley 2008), nonprofit agencies that have contracted with the government have increased the requirements for performance data to maintain the performance contracts. In addition to the government, other funders like the United Way have encouraged performance measurement in their funded agencies since the late 1990s. Around this time, nonprofit organizations were

adopting the balanced scorecard system, a model of performance measurement used in the private and public sectors (Kaplan 2001).

Even though performance measurement is encouraged in nonprofit organizations, there are several factors that affect the organization's adoption and use of performance measurement (de Lancer Julnes and Holzer 2001, Moxham and Boaden 2007). First, because grants and contributions tend to be tied to short-term objectives (one year or less), nonprofit organizations focus on short-term goals rather than longer-term goals. In other words, short-term funding is "an obstacle to long-term performance measurement" (Moxham and Boaden, 2007, p. 837). Second, measuring impact over time requires keeping in touch with stakeholders, which may not be possible because of confidential services. A third barrier is the lack of a common understanding and definition of performance measurement terms, such as output or outcome, both within the organization as well as external funders.

At the organizational level, researchers have found that larger nonprofits, those in certain sub-sectors and those that receive federal or United Way funding are more likely to adopt performance measurement (Salamon 2012; Carman 2008, 2009; Gronbjerg 1993). Organizations that are part of a national alliance, coalition or network are likely familiar with programs that require periodic assessment to remain affiliated with the national association or federation. Age of the organization has a positive relationship with the use of performance information. Likely, older nonprofits have learned how to best use their resources, have achieved a certain level of stability in funding, and likely have leadership focused on long-term objectives (Carman and Fredericks 2010; Light 2004; Simon 2001). The age of an organization is also indicative of a strong governance structure and solid management practices that are likely to lead to higher levels of performance measurement adoption. Specifically, the age of organizations has a

positive association with the extent to which organizations use benchmarks for measuring program outcomes or results and the extent to which organizations integrate performance information into their budget preparation process (Carman and Fredericks 2010; Light 2004; Simon 2001). Therefore, we hypothesized:

*Hypothesis 1: Older organizations have higher use of performance information.*

Previous research suggests that organizational size is positively related to the use of performance information. Organizational size can be measured in several ways such as budget size or number of staff. In line with earlier research, we used staffing as a measurement of organizational size (Connolly and York 2003; Brown 2005). Therefore, we hypothesized:

*Hypothesis 2: Organizations that have more paid staff have higher use performance information.*

In addition to the influence of age and size, several factors affect the implications of performance measurement. Intuitively, we think that better information and data related to performance should necessarily lead to better performance and strengthen accountability. This is supported by research that suggests reporting of performance information by nonprofits can contribute to overall accountability to external audiences such as the general public. For example, Valentinov (2011) found that “nonprofit managers should broaden their accountability mechanisms in such a way as to include reporting about how their nonprofits contribute to democracy building, civic participation, social capital and other constituents of the processual public interest” (p. 39).

### Nonprofit Capacity

Nonprofit capacity broadly refers to a number of different organizational dimensions related to the processes, practices and people the organization draws from to achieve its mission

(Christenson and Gazley 2008). There are several nonprofit capacity frameworks in the literature (Shumate et al. 2017; Allison and Kaye 2005; CARE International 2000; Gupta et al. 2006; McKinsey and Company 2001; Renzi 1996). Nonprofit capacity is often blamed for organizations not using performance information, but we know very little about which type of capacity-building will have the greatest impact. Even though previous research has linked organizational capacity and the use of performance measurements (Knox and Wang 2015; Moynihan, Pandey and Wright 2011), the conceptualization of capacity needs to be further refined. Capacity in this research refers to the ability of organizations to develop networking and advocacy, financial resources, operations and governance, human resources, programs and planning, marketing, and information technology to carry out their mission (Honadle 1981; Ingraham, Joyce, and Donahue 2003; Johnson et al 2004; Knox and Wang 2015). In this research, we use the Capacity Framework by McKinsey & Company (2001) and refined by Grønbjerg et al. (2007) and Grønbjerg, and McGiverin-Bohan (2010) to examine seven specific organizational capacities (networking and advocacy, financial resources, operations and governance, human resources, programs and planning, marketing, and information technology) and use of performance information. We address each of these seven capacities.

Networking and advocacy capacity center on the creation and maintenance of relationships with key policymakers as well as constituents (Glickman & Servon, 1998), issues that will likely become more important given the current economic climate. Past research has concluded that isolated organizations are more likely to fail due to a lack of shared resources and focus on community expectations (De Vita, Fleming, & Trombly, 2001). Furthermore, nonprofits that move toward forming strategic alliances and pooling their resources are more likely to survive this economic downturn (Collins, 2008). To begin and manage a performance

measurement system requires accommodation of various stakeholders' demands (Rivenbark and Menter 2006; Lee and Clerkin 2017). Therefore, lack of networking and advocacy capacity may affect the use of performance information. We hypothesize the following.

*Hypothesis 3: Organizations that have higher capacity in networking and advocacy are more likely to have higher use performance information.*

Organizations with sufficient financial resources are more likely to focus on strategic decisions (LeRoux and Goerdel 2009). In contrast, nonprofits with scarce financial resources will tend to comply with the performance measurements demands from funders, but they tend to meet the minimum standard of performance measurement instead of adopting performance measurement proactively (Thomson 2011). Financial resources capacity is the most important challenge facing a nonprofit (Gronbjerg et al 2007). Therefore, we can hypothesize the following:

*Hypothesis 4: Organizations that have higher capacity in financial resources are more likely to have higher use performance information.*

The staff and board lead and manage nonprofit organizations. Dimensions of operations and governance capacity include functions such as strategic planning, management skill development, board/staff relations, organizational culture, board training, routine management practices, and managing facilities (Gronbjerg et al 2007). Board members who are sufficiently trained are more engaged in the organization, which improves their overall effectiveness (Chait, Holland, & Taylor 1996, LeRoux and Wright 2010). If they are not well trained, they may rely more heavily on staff for strategic decisions, performance measurement, and financial decisions. Developing a high performing board could increase the financial capacity of an organization.

*Hypothesis 5: Organizations that have higher capacity in operations and governance are more likely to have higher use performance information.*

The work of nonprofits is done through the service of others, both volunteers and paid staff. Human resources capacity includes measures of staff and volunteer recruitment, retention, training, and management (Gronbjerg et al 2007). Professional staff are more likely to use performance information (Moynihan and Ingraham 2004, Miller 1998, Taylor and Sumariwalla 1993).

*Hypothesis 6: Organizations that have higher capacity in human resources are more likely to use performance information.*

Nonprofits exist for the sole purpose of fulfilling their mission, which is typically done through the programs they offer. Missions and programs are developed to address a particular need in the community. The nonprofit needs to plan effectively to meet certain objectives. Measurement is required to ensure the programs meet the mission and attract volunteers, donors, and staff who identify with that vision (De Vita, Fleming, & Twombly, 2001). About 75% of all respondents in Gronbjerg et al's (2007) Indiana study perceived that measuring program goals and outcomes was a minor challenge because, as Campbell (1993) and Campbell and Yeung (1991) suggested, staff time spent monitoring and evaluating took staff away from day-to-day activities, including program delivery, resulting in a negative impact on adoption performance measurement.

*Hypothesis 7: Organizations that have higher capacity in programs and planning capacity are less likely to use performance information.*

Marketing and communication in nonprofits are support functions for everything else but are often under-valued and under-resourced. Marketing in the nonprofit space is particularly

challenging since those paying for programs are rarely the actual beneficiaries of these programs. There is often no tangible benefit to donors beyond the intrinsic value, or the warm feeling of altruism. Nonprofits may borrow certain marketing methods from the for-profit sector (Dann et al 2007), but having clear and measurable results is a challenge (Hal 2006). Arts organizations face increasing competition for discretionary time and money, yet marketing is needed to improve the visibility of the nonprofit (Gronbjerg et al 2007). Based on this discussion, we hypothesize the following:

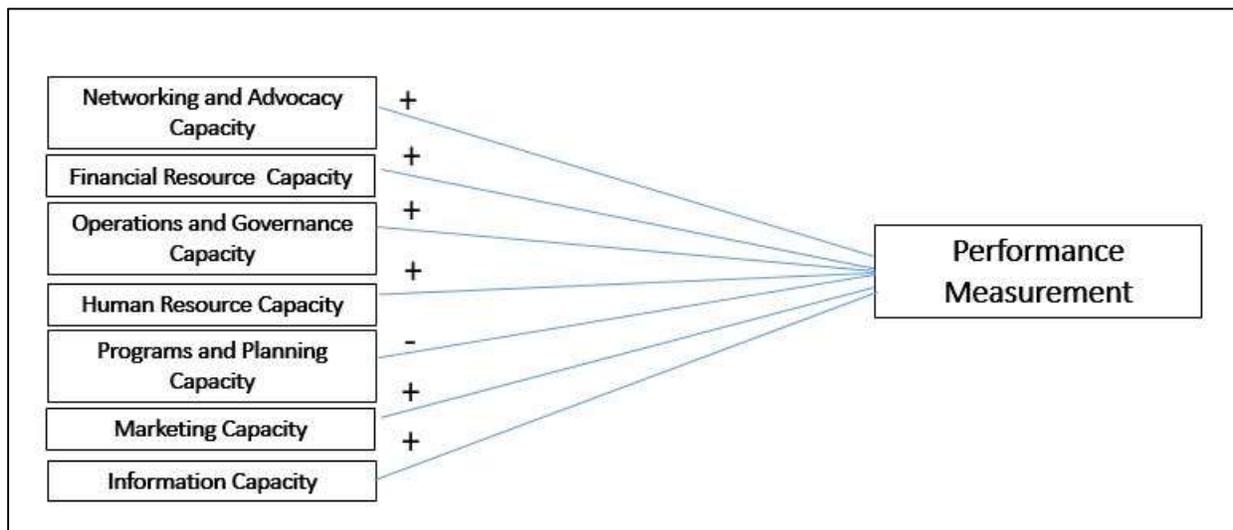
*Hypothesis 8: Organizations that have higher capacity in marketing are more likely to have higher use of performance measurement.*

In this ever-changing world, information technology is an incredibly important part of organizations. Most nonprofit organizations include some component of technology in their strategic plan (Silverman, Rafter, & Martinez 2007). To improve technology capacity, organizations need properly trained staff, have an innovative culture, and allocate the proper resources to support technology in the organization (Silverman, Rafter, & Martinez 2007). While staff training was a challenge for most nonprofits in the Indiana study (Gronbjerg et al 2007), the lack of investment in technology hindered the development and use of performance measurement systems (Connolly and York 2003, Carman and Fredericks 2010). The capacity for using performance technology is particularly important in performance measurements because measuring performance requires a well-designed system to monitor nonprofits' day-to-day operations (Medina-Borja and Triantis 2014). Also, data collection, data analysis, and data management require advanced analytic skills (Thomson 2011). Therefore, we hypothesize the following.

*Hypothesis 9: Organizations that have higher capacity in information technology are more likely to use performance information.*

The capacity hypotheses (2-9) are visualized in Figure 1.

**Figure 1**



## **Methodology**

The nonprofit sector varies greatly in terms of mission and objectives, which makes it challenging to compare across different types of nonprofits. For example, homeless shelters, theatres, and hospitals all vary in terms of their funding models and community impact. It is, therefore, preferable to study organizations within a single nonprofit sub-sector to more easily compare results. This study used the arts and culture sub-sector, one of the 26 major categories in the National Taxonomy of Exempt Entities – Core Codes (NTEE-CC). These organizations operate under similar business models and operational structures and rely on earned income like ticket sales and program fees.

Among all nonprofit organizations, nonprofit arts organizations' average failure rate is usually high (Bowen, Nygren, Turner, and Duffy 1994; Hager 2001). Moreover, they were

under high pressure to increase their performance and accountability due to the 793-day-long Illinois budget crisis from July 2015 to August 2017. Therefore, this study focused on nonprofit arts organizations in the State of Illinois.

Nonprofit arts organizations have recently received greater attention in the literature on topics such as arts organizations and advocacy (Kim and Mason 2018; Kim 2016), contributions to civil society (Kim, Pandey and Pandey 2017; LeRoux and Bernadska 2014) and characteristics of donors to arts organizations (Charles and Kim 2016). Starting in 2008, the Indiana University School of Public and Environmental Affairs (SPEA) began a partnership with the Indiana Arts Commission to assess the capacity of nonprofit arts organizations in Indiana. This research study in Illinois extends the work of Grønbjerg and Giverin-Bohan (2010) in Indiana and contributes to the expanded research of nonprofit arts organizations taking place on a national level.

### *Data Collection*

To determine the sample for this research, we first conducted a search in GuideStar using the following criteria: organizations within the State of Illinois, arts organizations, 501(c)3 organizations, and organizations with annual revenue of \$250,000 and above.<sup>1</sup> This resulted in 503 organizations.

Using this list of 503 organizations, we then searched each of their websites for the email address of the top staff person. We created an online survey adapted from a survey used by Grønbjerg and McGiverin-Bohan (2010) for a capacity study of arts organizations in Indiana developed by the School of Public and Environmental Affairs at Indiana University. These

---

<sup>1</sup> The Urban Institute breaks down size of nonprofits as small (\$100,000-\$249,999), medium (\$250,000-\$999,999) and large (\$1 million and over). [http://www.urban.org/UploadedPDF/412962-Nonprofit-Government-Contracts-and-Grants.pdf?RSSFeed=UI\\_CenteronNonprofitsandPhilanthropy.xml](http://www.urban.org/UploadedPDF/412962-Nonprofit-Government-Contracts-and-Grants.pdf?RSSFeed=UI_CenteronNonprofitsandPhilanthropy.xml)

researchers granted us permission to use their original survey. The 40-question survey received Institutional Review Board approval. We then sent an email with the survey link to the executive director of all 503 organizations. Each week, for three weeks thereafter, a reminder email was sent with the link to the survey. Six emails were bad, but at the end of the survey period, the overall response rate was 29.4%. High response rates for mail surveys are considered to be in the range of 20-30 percent (Hager et al 2003). Although mail surveys may achieve a higher response rate, there was “no difference in respondent characteristics, the completeness of the survey, and the percentage of missing items” (Lin and VanRyzin 2012, 1026). In light of the research, the response rate in this study is acceptable.

#### *Key Explanatory Variables*

To test Hypotheses 2 to 9, the key explanatory variables come from capacity challenges in the Capacity Framework by McKinsey & Company (2001) and the research on capacity building by DeVita, Fleming, and Trombly (2001). This original framework was then adapted by Grønbjerg et al. (2007) and Grønbjerg, and McGiverin-Bohan (2010) for specific application to arts organizations. They used this refined framework to study the capacity of arts and culture organizations in Indiana. The seven capacities include operations and governance, human resource management, programs and planning, marketing, networking and advocacy, financial resources and information technology. The survey was also used by Pucella (2007) in a study of nonprofit capacity in Ohio. The detailed operationalization of the dimensions is listed in Table 1.

**Table 1. Operationalization of Key Explanatory Variables**

Capacities	Operationalization (Activities)
Operation and Governance	<ul style="list-style-type: none"> <li>• Undertaking strategic planning for your organization</li> <li>• improving management skills</li> <li>• Managing or improving board/staff relations</li> <li>• Establishing a learning organizational culture (conflict resolution, teamwork)</li> <li>• Measuring performance and outcomes</li> <li>• Training and/or developing your board</li> <li>• Performing routine tasks indirectly related to mission or goals</li> <li>• Managing the facilities of space your organization uses</li> </ul>
Human Resource	<ul style="list-style-type: none"> <li>• Managing volunteers</li> <li>• Managing staff</li> <li>• Recruiting/keeping qualified staff</li> <li>• Recruiting/keeping qualified volunteers</li> <li>• Staff training</li> <li>• Volunteer training</li> <li>• Recruiting/keeping effective board members</li> <li>• Board training</li> </ul>
Programs and Planning	<ul style="list-style-type: none"> <li>• Focusing on the mission and vision</li> <li>• Delivering high quality programs/service</li> <li>• Assessing community needs</li> <li>• Attracting new members/clients</li> <li>• Evaluating or assessing program outcomes or impact</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>• Defining our constituency groups</li> <li>• Meeting the needs/interest of current members client</li> <li>• Gathering research or information on programs/services</li> <li>• Developing targeted communications to community</li> <li>• Adjusting programs/services to meet changing needs</li> <li>• Communicating with members /clients</li> <li>• Enhancing the visibility/reputation of your organization's arts and culture activities</li> </ul>
Networking and Advocacy	<ul style="list-style-type: none"> <li>• Forming/maintaining relations with other entities (including other nonprofit organization, private firms, such as local business, philanthropic organizations, and education or political officials)</li> <li>• learning best practices from other organizations</li> <li>• Strengthening relationships with key policymakers</li> <li>• Enhancing public understanding of key policy issues</li> <li>• Responding effectively to community expectations</li> </ul>
	<ul style="list-style-type: none"> <li>• Managing finances or other financial resources</li> <li>• Obtaining funding or other financial resources</li> </ul>

Resource	<ul style="list-style-type: none"> <li>• Writing grant proposals</li> <li>• Securing government grants or contracts</li> <li>• Developing a capital campaign for needed expansion</li> <li>• Undertaking effective special events</li> <li>• Expanding the donor base</li> <li>• Building an endowment</li> </ul>
Information Technology	<ul style="list-style-type: none"> <li>• Knowing how technology helps achieve the organization's arts and culture mission/goals (e.g. computer, database, websites, email etc.)</li> <li>• Identifying tech tools/resources for service delivery</li> <li>• Communicating IT needs to decision-makers</li> <li>• Training staff/volunteers in software/ applications</li> <li>• Upgrading computers to support new software</li> <li>• Creating a comprehensive and interactive website</li> <li>• Creating a comprehensive and interactive website</li> <li>• Creating, updating, and effectively using databases</li> <li>• Getting IT assistance</li> <li>• Creating an IT plan</li> <li>• Strategically using social media</li> </ul>

To measure capacity, we asked “to what extent have your organization’s (activities/operationalization of capacities) currently posed a challenge for your organization in fulfilling its mission or goals (related to arts and culture activities).” The activities referred to the operationalized activities under each capacity dimension, and respondents were asked to identify their choice using a three-point Likert scale or the option of “not applicable.” We tested the seven capacities for statistical validity. According to Nunnally’s (1978) criterion of .70, six out of seven key explanatory variables are considered reliable. While the reliability test for programs and planning index is slightly less than .7, it is still acceptable based on Loewenthal (2004). The model means, standard deviations, and reliability estimates for the scaled items are shown in Table 2.

**Table 2. Descriptive Statistics and Reliability Test for Key Explanatory Variables**

*Dependent Variables:*

We considered five dependent variables. The first answered the question “I regularly use performance information to make decisions” with the answers ranging from 1 (strongly disagree)

<b>Capacity Variable</b>	<b>N</b>	<b>Range</b>	<b>Mean</b>	<b>SD</b>	<b>Cronbach's Alpha</b>	<b>Reliability</b>
Operation and Governance	110	1-3	2.2	.41	0.726	Acceptable
Human Resources	114	1-3	2.17	.43	0.766	Acceptable
Programs and Planning	133	1-3	2.19	.42	0.687	Acceptable
Marketing	124	1-3	2.06	.47	0.812	Good
Networking and Advocacy	104	1-3	2.03	.5	0.788	Good
Financial Resources	69	1-3	1.6	.41	0.781	Good
Information Technology	113	1-3	2.07	.55	0.901	Excellent

to 5 (strongly agree). This dependent variable was tested by Moynihan and Pandey (2010) when examining performance in public organizations. Moynihan, Pandey, and Wright (2011) also operationalized performance use in this way. Four additional variables were adapted from Brudney, Hebert, and Wright (1999) to test the extent to which nonprofit organizations had implemented the following related to using performance measurement (use in budget preparation, measuring program results or outcomes, strategic planning, and systems for measuring customer satisfaction). All of these variables were interval variables and were measured on a Likert scale (1-5) with 1 being “not at all” and 5 being “fully” (See Appendix A for the distribution of dependent variables).

### *Data Analysis Process*

Stata 12 was used to conduct reliability tests (Cronbach's Alpha), which test the internal consistency of a set of survey questions used to measure a latent concept. Bivariate correlations and five ordered logit regressions were also estimated to test whether the association between the key explanatory variables and dependent variables were statistically discernable from zero. Model selection was based on the efficiency of the model by using the values of AIC and BIC as indicators. A series of stepwise estimations, backward selections, was estimated to automatically select the predictive variable and eliminate the variable that was not statistically related to the dependent variable. Chi square was used to test the lack of fit of the regression models. Also a correlation matrix of all the independent variables was conducted to test multicollinearity to ensure the correlation estimation between the explanatory variable and dependent variable is precise.

### **Results**

To test the hypotheses, we first conducted bivariate correlations for Hypotheses 2-9, shown in Table 3, to gain a preliminary view regarding the relationship between the seven key explanatory variables and the five dependent variables.

**Table 3. Bivariate Correlations**

	<b>Use of PM Info</b>	<b>Use of Benchmarks</b>	<b>Strategic Planning</b>	<b>Measure Customers</b>	<b>PM for Budgeting</b>
Capacity in Operations and Governance	0.127	0.2001*	0.3179***	0.2202*	0.1565
Capacity in Human Resource	0.0696	0.0614	0.1872*	0.0003	0.0382
Capacity in Programs and Planning	0.0271	0.1637	0.2046*	0.1747*	-0.0406
Capacity in Marketing	0.0822	0.1087	0.1351	0.0611	-0.0072
Capacity in Networking and Advocacy	0.1744	0.1115	0.1431	0.0825	0.1309
Capacity in Financial Resources	0.0243	0.2935*	0.1752	0.1265	0.0766
Capacity in Information Technology	0.0638	0.2799**	0.2279*	0.1526	0.1559

\*p<0.05 \*\* p<0.01 \*\*\*p<0.001

Compared to other capacities, the capacity in operations and governance had more association with the use of performance measurement and these associations were statistically discernible from zero.

Next to further test Hypotheses 2 to 9, we created five ordered logit regression models to regress the use of performance information on the seven indices of organizational capacity, which include operation and governance, human resources, programs, and planning, marketing, networking and advocacy, financial resources, information technology.<sup>2</sup> We also incorporated the control variables: age of organization, number of full-time staff, number of part-time staff, number of members, and number of board members. If our hypotheses are valid, the uses of performance information should have an association with organizational capacities. To prevent the problem of confounding variables or suppression effect and to increase the efficiency of the

---

<sup>2</sup> We also tested how the interaction between organization maturity (age) and capacities affects the use of performance information. The results reveal that no interaction between organization maturity and organization capacities has an impact on the adoption of performance measures. Also, based on approximate likelihood-ratio tests and Brant test, the proportional odds assumption in the regressions with interaction terms are violated. Therefore, we did not choose the models with the interaction terms as the main models in this paper.

models, this study ran a series of stepwise estimations using backward selection to choose the most parsimonious models. The results of the most efficient models are summarized in Table 4.<sup>3</sup>

**Table 4. Estimation from 5 ordered logit regression models that regress the use of performance information on the age of organization, number of full-time and part-time staff, and the indices of organizational capacity.**

	Use of PM Info	Use of Benchmarks	Strategic planning	Measure Customers	PM for Budgeting
Pseudo R <sup>2</sup>	.2458	.5760	.0727	.3027	.2328
Age		0.0951447*			0.1691208**
Number of FT Employees		0.9972805**		0.1741068**	
Number of PT Employees	0.0825488*	-0.1538292*			0.1098838*
Number of Members	-0.0023028*	0.0046065*			-0.0029427*
Number of board members		-1.078911*		-0.2849941*	-0.6839615*
Capacity in Operations and Governance		18.49005*			17.38787*
Capacity in Human Resource		-25.16973**		-3.532105**	-11.91796*
Capacity in Programs and Planning		6.52239*		3.632221**	
Capacity in Marketing		5.767022*			-4.169753*
Capacity in Networking and Advocacy		-13.75165**		-3.805368*	
Capacity in Financial Resources					
Capacity in Information Technology			1.785969*		

\*p<0.05 \*\* p<0.01 \*\*\*p<0.001

## Results of Hypotheses

*Hypothesis 1: Older organizations have higher use of performance information.*

Specifically, the age of organizations has a positive association with the extent to which organizations use benchmarks for measuring program outcomes or results and the extent to which organizations integrate performance information into their budget preparation process.

This confirms earlier research (Carman and Fredericks 2010; Light 2004; Simon 2001).

<sup>3</sup> See Appendix for Table 5: the full model and Table 6: the efficiency test between the selected and the full model, and Table 7: Multicollinearity test and post-estimation tests.

*Hypothesis 2: Organizations that have more paid staff higher have a higher use of performance information.*

We separated full-time and part-time staff for more precision. The number of full-time employees of organizations has a positive association with the extent to which these organizations use benchmarks for measuring program outcomes and the extent to which they implement systems for measuring customer satisfaction. The number of part-time employees of organizations has positive association with the frequency for these organizations to use performance information and the extent to which these organizations integrate performance information into their budget preparation process. However, the number of part-time employees has a negative association with the extent to which organizations use benchmarks for measuring program outcomes or results. Overall, the number of staff does matter to the use of performance information, which supports earlier research (Connolly and York 2003, Brown 2005).

*Nonprofit Capacity Hypotheses:*

*Hypothesis 3: Organizations that have higher capacity in networking and advocacy are more likely to have higher use of performance information.*

Organizational capacity in networking and advocacy has a negative association with the extent to which these organizations use benchmarks for measuring program outcomes or results and the extent to which these organizations implement systems for measuring customer satisfaction. This hypothesis was proven to be statistically significant but with a negative relationship. It is possible those nonprofit organizations with higher capacity in networking and advocacy are taking time away from other functions like data collection and analysis to support the use of performance information. It is likely a case of balancing the external communication functions of networking and advocacy with a focus on data for use internally. Nonprofits should

cautiously pursue networking and advocacy but realize the tradeoff in terms of building capacity in other areas and recognize that use of performance information may actually improve their networking and advocacy efforts in the long run.

*Hypothesis 4: Organizations that have higher capacity in financial resources are more likely to have higher use of performance information.*

Capacity in financial resources was not statistically significant for any of the dimensions of performance information use. Therefore, this hypothesis was not proven. Possibly more research is needed to measure financial capacity in terms of financial variables and then analyze those variables in relation to the use of performance information.

*Hypothesis 5: Organizations that have higher capacity in operations and governance are more likely to have higher use of performance information.*

Organizational capacity in operations and governance has a positive association with the extent to which organizations use benchmarks for measuring program outcomes or results and the extent to which organizations integrate performance information in the budget preparation process. While the other uses of performance information were not statistically significant, these two positive relationships do support earlier research (LeRoux and Wright 2010; Moynihan, Pandey and Wright 2011) that use of performance information is positively related to governance and leadership.

*Hypothesis 6: Organizations that have higher capacity in human resources are more likely to have higher use of performance information.*

Organizational capacity in human resource activities has a negative association with the extent to which these organizations use benchmarks for measuring program outcomes or results, the extent to which these organizations implement systems for measuring customer satisfaction,

and the extent to which these organizations integrate performance information into the budget preparation process. Our findings contrast with earlier research (Moynihan and Ingraham 2004, Miller 1998; Taylor and Sumariwalla 1993). This may suggest that both human resource activities and using performance information require attention and are time-consuming activities. Recruiting, hiring, training and supervising staff are more challenging if there is staff turnover or for organizations that use more part-time and seasonal staff, such as arts organizations.

*Hypothesis 7: Organizations that have higher capacity in programs and planning capacity are less likely to use performance information.*

Organizations' capacity in programming and planning has a positive association with the extent to which these organizations use benchmarks for measuring program outcomes or results and the extent to which these organizations implement systems for measuring customer satisfaction. We predicted a negative relationship, but results suggest that is in fact positive. Research in the 1990s (Campbell 1993; Campbell and Yeung 1991) suggested that staff time spent on monitoring and evaluating took staff away from day-to-day activities, including program delivery, resulting in a negative impact on the adoption performance measurement. However, more program funders are requiring the use of performance information to measure and track impact, so it is likely that nonprofits have had to invest in capacity to support their program and planning and at the same time utilize performance information.

*Hypothesis 8: Organizations that have higher capacity in marketing are more likely to have higher use of performance measurement.*

Organizational capacity in marketing has a positive association with the extent to which these organizations use benchmarks for measuring program outcomes or results but has a negative association with the extent to which these organizations integrate performance

information into their budget preparation process. Successful nonprofits are skilled in marketing and communications to support other management functions, and data are used more and more to make the case for support, volunteers, and policy changes.

*Hypothesis 9: Organizations that have higher capacity in information technology are more likely to adopt performance measurement.*

Organizational capacity in information technology has a positive association with the extent to which these organizations implement strategic planning but not the other types of performance information use. There could still be a disconnect between the necessity to invest and build capacity in information technology to support data collection and performance information use. Information technology has evolved from tech support of hardware and software to a critical component of nonprofit success that supports fundraising, program data collection, and communications both internally and externally. More research is likely needed to explore behaviors and practices of nonprofits as they relate to information technology. Information technology adoption by nonprofits is likely more a function of organizational culture along with the use of performance information, but the lack of clear definitions and understanding make it challenging to gather data through a survey instrument.

In addition to these key explanatory variables, our control variables also have impact on the use of performance measurement. The number of members in organizations has a positive association with the frequency for these organizations to use performance information and the extent to which these organizations integrate performance information into their budget preparation process, but it has a negative association with the extent to which these organizations use benchmarks for measuring program outcomes or results. The number of board members has a negative association with the extent to which these organizations use benchmarks for

measuring program outcomes or results, the extent to which these organizations implement systems for measuring customer satisfaction, and the extent to which these organizations integrate performance information in budget preparation process.

## **Discussion**

We operationalized capacity into seven dimensions using the Capacity Framework by McKinsey & Company (2001). We then operationalized “the use of performance information” from Moynihan and Pandey (2010) and Moynihan, Pandey, and Wright (2011) and added four additional attributes from Brudney, Hebert, and Wright (1999), which were specific uses of performance information in budget preparation, measuring program results or outcomes, strategic planning, and systems for measuring customer satisfaction. Therefore, a total of five variables measured the use of performance information along the seven organizational capacities of nonprofits.

In this research of nonprofit arts organizations, we find certain capacities tend to drive use of performance measurement in nonprofit organizations. This analysis supports previous research that the use of performance information in nonprofit organizations is a complicated picture and resource intensive, and it is likely certain tradeoffs are being made. Despite the capacity challenges of nonprofit organizations, there is evidence that nonprofits are using performance information to support decision making (67.6%). Specifically, they are using it for budgeting (67.1%) and strategic planning (55.5%) but less so for benchmarking and measuring customer satisfaction. The number of part-time and full-time staff was statistically significant to the overall use of performance measurement, which lends support that performance measurement is human resource intensive. The number of staff was not significant for specific performance

activities like strategic planning or budgeting. Future studies might examine organizational culture in relation to use of performance information.

### *Implications for Practice*

This article has several implications for practice. Funders and donors are increasing expectations for accountability that include the collection, analysis and reporting of performance information. However, this “also increases the pressures on hard-pressed nonprofit managers for demonstrations of progress that neither they, nor anyone else, may be able to supply, at least not without far greater resources than are currently available” (Salamon 2015, 44). Practically speaking, nonprofit managers must balance their need for performance information and data to inform their own decision-making and program improvement with the accountability demands of external funders. Funders and donors need to acknowledge the burden of external accountability requirements. Ideally, these funders and donors will support capacity-building in the areas noted in this study and not just in programming. Unfortunately, funding is often only given for program-specific initiatives and, therefore, is restricted to direct program expenses and not to build capacity. Foundations and other funders are often less comfortable in investing in organizational capacity-building, which could also be defined as “overhead,” to direct dollars specifically to “missions” or programs. Therefore, organizations that are investing in capacity are likely more innovative and/or have access to more unrestricted funds, such as contributions from individuals or earned income.

In summary, the findings of this study support the notion that the use of performance information in nonprofit organizations depends on an investment in certain organizational capacities. The findings suggest that for nonprofit organizations to commit to performance

measurement, funders need to be aware of these costs to build accountability and strengthen evidence-based decision-making.

There are limitations worth noting. This study examined only arts organizations in one state, potentially limiting the generalizability of the study. The results are self-reported information captured using a survey instrument, which has the potential for bias. Future research could be done to observe actual practices or include interviews with nonprofit managers and board members. Future studies could also expand the type of nonprofits beyond arts and culture organizations and in other geographic jurisdictions.

## References

- AbouAssi, K. Nakhoulouf, N. & Whalen, P. (2016). NGOs' Resource Capacity Antecedents for Partnerships. *Nonprofit Management & Leadership*. . 26(4): 435-451.
- Allison, M. and Kaye, J. (2005). *Strategic Planning for Nonprofit Organizations: A Practical Guide and Workbook*. 2<sup>nd</sup> edition. Hoboken, NJ: John Wiley & Sons.
- Andreasen, A. & Kotler, P. (2008), *Strategic Marketing for Nonprofit Organizations*, 7th ed. Upper Saddle River, NJ: Prentice Hall.
- Boris, E., deLeon, E., Roeger, K. & Nikolova, M. (2010). *Contracts and Grants between Human Service Nonprofits and Governments*. Center on Nonprofits and Philanthropy. The Urban Institute.
- Bowen, W.; Nygren, T.; Turner, S.; and Duffy, E. (1994). *The Charitable Nonprofits: An Analysis of Institutional Dynamics and Characteristics*. San Francisco: Jossey-Bass.
- Brown, W. (2005). Exploring the Association Between Board and Organizational Performance in Nonprofit Organizations. *Nonprofit Management & Leadership*. 15(3): 317-339.
- Brudney, J., Hebert, T. & Wright, D. (1999). Reinventing government in the American states: Measuring and Explaining Administrative Reform. *Public Administration Review*. 59:19-30.
- Campbell, A. (1993). The Power of Mission: Aligning Strategy and Culture. *Planning Review*. 20: 10-13.
- Campbell, A. & Yeung, S. (1991). Creating a Sense of Mission. *Long Range Planning*. 24(4): 10-20.
- CARE International. 2000. CARE Basic Educational Fellowship Participatory Capacity Assessment Tools. London: CARE.
- Carman, J. (2009). Nonprofits, Funders, and Evaluation. *The American Review of Public Administration*. 39(4): 374-390.
- Carman, J. (2008). Nonprofits, funders, and evaluation: Accountability in action. *American Review of Public Administration*.
- Carman, J. & Fredericks, K. (2010). Evaluation capacity and nonprofit organizations: is the glass half-empty or half-full? *American Journal of Evaluation*. 31(1): 84-104.
- Carman, J. 2011. Understanding evaluation in nonprofit organizations. *Public Performance and Management Review*. 34(3): 350-377.
- Chait, R., Holland, T. & Taylor, B. (1996). *Improving the performance of governing boards*. Phoenix, AZ: Oryx Press.
- Charles, C. and Kim, M. (2016). Do Donors Care About Results? An Analysis of Nonprofit Arts and Cultural Organizations. *Public Performance & Management Review*. 39: 864-884.
- Christenson, R. and Gazley, B. 2008. Capacity for Public Administration: Analysis of Meaning and Measurement. *Public Administration and Development*. 28: 265-279.
- Collins, G. (2008). In tight times, many nonprofits feel the pinch as contributions dwindle. *New York Times*. Retrieved February 21, 2017, from <http://www.nytimes.com/2008/10/07/nyregion/07charities.html>.
- Connelly, P. & York, P. (2003). *Building the capacity of capacity builders: A study of management support and field-building organizations in the nonprofit sector*. Retrieved December 26, 2003, from <http://www.tccgrp.com/pdfs/buildingthecapacitybuilders.pdf>.
- Cordery, C. & Sinclair, R. 2013. Measuring performance in the third sector. *Qualitative Research in Accounting and Management*. 10(3/4): 196-212.

- Cutt, J., Bragg, D., Balfour, K., Murray, V. & Tassie, W. (1996). Nonprofit Accommodate the Information Demands of Public and Private Funders. *Nonprofit Management & Leadership*. 7(1): 45-67.
- Dann, S., Harris, P., Mort, G., Fry, M., & Binney, W. (2007). Reigniting the fire: A contemporary research agenda for social, political, and nonprofit marketing. *Journal of Public Affairs*, 7, 291-304.
- de Lancer Julnes, P. & Holzer, M. (2001). Promoting the Utilization of performance measures in public organizations: An empirical study of factors affecting adoption and implementation. *Public Administration Review*. 61: 639-708.
- De Vita, C.; Fleming, C; & Trombly, E. (2001). Building nonprofit capacity: A framework for addressing the problem. In C. DeVita, and C. Fleming, eds, *Building capacity in nonprofit organizations* (pp. 5-30). The Urban Institute.
- Gazley, B. (2008). Beyond the Contract: The Scope and Nature of Informal Government-Nonprofit Partnerships. *Public Administration Review*. Jan/Feb. 141-154.
- Glickman, N. & Servon, L.J. (1998). More than bricks and sticks: Five components of community development corporations capacity. *Housing Policy Debate*. 9(3): 497-539.
- Gordon, S. (2001). *Performance-based contracting*. Washington, DC: International city/County Management Association.
- Grønbjerg, K. (1993). *Understanding Nonprofit Funding: Managing Revenues in Social Services and Community Development Organizations*. San Francisco: Jossey-Bass.
- Grønbjerg, K., Cheny, L., Leadingham, S. & Liu, H. (2007). *Nonprofit capacity assessment: Indiana Charities, 2007*. Indiana University, Center for Philanthropy. Bloomington, IN: Indiana University, School of Public and Environmental Affairs.
- Grønbjerg, K. & McGiverin-Bohan, K. (2010). *Nonprofit Capacity Assessment: Indiana's Arts and Culture Organizations*. (Bloomington, IN: Indiana University School of Public and Environmental Affairs).
- Gupta, S., McPherson, T., Sellers, C., Chamreun, C., Choudhary, B., and Levene, J. 2006. Assessing and Evaluating Community Organizations' Capacity for Working in HIV/AIDS Responses in India, Ecuador, and Cambodia. *Journal of International Development*. 18(4): 595-598.
- Hager, M. (2001). Financial Vulnerability Among Arts Organizations: A Test of the Tuckman-Chang Measures. *Nonprofit and Voluntary Sector Quarterly*. 30(2): 376-392.
- Hager, M., Wilson, S., Pollak, T. & Rooney, P.M. (2003). Response Rates for Mail Surveys of Nonprofit Organizations: A Review and Empirical Test. *Nonprofit and Voluntary Sector Quarterly*. 32(2): 252-267.
- Halachmi, A. (1999). Performance measurement issues and nonprofit governance. *PA Times*, 22(11): 7.
- Hall, L.M. & Kennedy, S.S. (2008). Public and Nonprofit Management and the "New Governance". *The American Review of Public Administration*. 38(3): 307-321.
- Harris, E.E. 2014. The impact of board diversity and expertise in nonprofit performance. *Nonprofit Management and Leadership*. 25(2): 113-130.
- Honadle, B. (1981). A Capacity-Building Framework: A Search for Concept and Purpose. *Public Administration Review* 41(5): 575-80.
- Ingraham, P.; Joyce, P. and Donahue, A. (2003). *Government Performance: Why Management Matters*. Baltimore: Johns Hopkins University Press.

- Johnson, K.; Hays, C.; Center, H.; and Daley, C. (2004). Building capacity and sustainable prevention innovations: a sustainability planning model. *Evaluation and Program Planning*. 27(2): 135-149.
- Kaplan, R.S. (2001). Strategic Performance Measurement and Management in Nonprofit Organizations. *Nonprofit Management & Leadership*. 11(3): 353-370.
- Keating, E.K. & Frumkin, P. (2003). Reengineering Nonprofit Financial Accountability: Toward a More Reliable Foundation for Regulation. *Public Administration Review*. 63(1): 3-15.
- Kim, M. (2016). Characteristics of Civically Engaged Nonprofit Arts Organizations. *Nonprofit and Voluntary Sector Quarterly*. 46(1): 175-198.
- Kim, S.E. (2005). Balancing Competing Accountability Requirements: Challenges in Performance Improvement of the Nonprofit Human Services Agency. *Public Performance & Management Review*. 29(2): 145-163.
- Kim, M. and Mason, D. (2018). Representation and Diversity, Advocacy, and Nonprofit Arts Organizations. *Nonprofit and Voluntary Sector Quarterly*. 47(1): 49-71.
- Kim, M., Pandey, S, and Pandey, S. (2017). Why Do Nonprofit Performing Arts Organizations Offer Free Public Access? *Public Administration Review*. 78(1): 139-150.
- Knox, C. & Wang, X.H. (2015). Capacity to Implement Performance Measurement in Small Organizations. *Journal of Public Management & Social Policy*. 22(3): 1-20.
- Lee, C. and Clerkin, R. (2017). Exploring the Use of Outcome Measures in Human Service Nonprofits: Combining Agency, Institutional, and Organizational Capacity Perspectives. *Public Performance & Management Review*. 40(3): 601-624.
- Lei, P.W. and Wu, Q. (2007). Introduction to Structural Equation Modeling: Issues and Practical Considerations. *Educational Measurement: Issues and Practice*. 26(3): 33-43.
- LeRoux, K. and Bernadska, A. Impact of the Arts on Individual Contributions to US Civil Society. *Journal of Civil Society*. 10(2): 144-164.
- LeRoux, K. & Goerdel, H. (2009). Political advocacy by nonprofit organizations: A strategic management explanation. *Public Performance and Management Review*. 32: 514-536.
- LeRoux, K. & Wright, N. (2010). Does Performance Measurement Improve Strategic Decision Making? Findings from a National Survey of Nonprofit Social Service Agencies. *Nonprofit and Voluntary Sector Quarterly*. 39(4): 571 – 587.
- Light, P. (2004). *Sustaining Nonprofit Performance*. Washington, DC: The Brookings Institution Press.
- Lin, W. & Van Ryzin, G. (2012). Web and Mail Surveys: An Experimental Comparison of Methods for Nonprofit Research. *Nonprofit and Voluntary Sector Quarterly*. 41(6): 1014-1028.
- Loewenthal, K. M. (2004). *An introduction to psychological tests and scales (2 ed.)*. Hove, UK: Psychology Press.
- Martin, L. (2002). Performance-based contracting for human services: Lessons for public procurement? *Journal of Public Performance*. 2(1): 2002-71.
- Martin, L. (2001). *Financial Management for Human Service Administrators*. Boston: Allyn & Bacon.
- McKinsey & Company. (2001). *Effective capacity building in nonprofit organizations*. Venture Philanthropy Partners.

- Medina-Borja, A. and Triantis, K. (2004). Modeling social services performance: a four-stage DEA approach to evaluate fundraising efficiency, capacity building, service quality, and effectiveness in the nonprofit sector. *Annals of Operations Research*. 221(1): 285-307.
- Miller, M. (1998). Small is beautiful – but is it always viable? In *New Directions for philanthropic fundraising*, edited by Mary L. Mussoline. San Francisco, CA: Jossey-Bass.
- Moxham, C. (2010). Help or Hindrance? Examining the Role of Performance Measurement in UK Nonprofit Organizations. *Public Performance & Management Review*. 33(3): 342-354.
- Moxham, C. & Boaden, R. (2007). The impact of performance measurement in the voluntary sector: Identification of contextual and processual factors. *International Journal of Operations & Production Management*. 27(8): 826-845.
- Moynihan, D. & Ingraham, P. (2004). Integrative leadership in the public sector: A model of performance information use. *Administration & Society*. 36: 427-453.
- Moynihan, D. & Pandey, S. (2010). The Big Question for Performance Management: Why do Managers Use Performance Information? *Journal of Public Administration Research and Theory*. 20: 849-866.
- Moynihan, D., Pandey, S. & Wright, B. (2011). Setting the Table: How Transformational Leadership Fosters Performance Information Use. *Journal of Public Administration Research and Theory*. 22:143-164.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Ostrower, F. (2008). *Boards of midsize nonprofits: Their needs and challenges*. Center on Nonprofits and Philanthropy: The Urban Institute.
- Pucella, T. (2009). *An Analysis of Nonprofit Capacity Building in the Mid-Ohio Valley*. McDonough Center for Leadership and Business, Marietta College, Marietta, Ohio.
- Renzi, M. (1996). An Integrated Toolkit for Institutional Development. *Public Administration & Development*. 16(5): 469-483.
- Rivenbark, W. and Menter, P. (2006). Building Results-Based Management Capacity in Nonprofit Organizations: The Role of Local Government. *Public Performance & Management Review*. 29(3): 255-266.
- Salamon, L., ed. (2002). *The Tools of Government: A Guide to the New Governance*. New York: Oxford University Press.
- Salamon, L. ed. (2012). *The State of Nonprofit America, 2<sup>nd</sup> edition*. Washington, DC: Brookings Institution Press.
- Shumate, M., Cooper, K., Pilney, A., and Pena-y-lillo, M. 2017. The Nonprofit Capacities Instrument. *Nonprofit Management & Leadership*. 28(2): 155-174.
- Silverman, C., Rafter, K. & Martinez, A. (2007). *Successful technology use in small grassroots nonprofits*. University of San Francisco. San Francisco: Institute for Nonprofit Organization Management.
- Simon, J. S. (2001). *The 5 stages of nonprofit organizations*. St. Paul, MN: Amherst H. Wilder Foundation.
- Slatten, L. A. D., Gudry, B. N. & Wesley, A. (2011). Accreditation and certification in the nonprofit sector: Organizational and economic implications. *Organization Management Journal*, 8, 112–127.

- Smith, S.R. (2010). Nonprofits and Public Administration: Reconciling Performance Measurement and Citizen Engagement. *The American Review of Public Administration*. 40(2): 129-152.
- Taylor, M. & Sumariwalla, R. (1993). Evaluating nonprofit effectiveness: Overcoming the barriers. In Virginia A. Hodgkinson & Associates. San Francisco, CA: Jossey-Bass.
- Thomson, D. (2011). The Role of Funders in Driving Nonprofit Performance Measurement and Use in Strategic Management. *Public Performance & Management Review*. 35(1): 54-78.
- Thomson, D. (2010). Exploring the Role of Funders' Performance Reporting Mandates in Nonprofit Performance Measurement. *Nonprofit and Voluntary Sector Quarterly*. 39(4): 611-629.
- Valentinov, V. (2011). Accountability and the Public Interest in the Nonprofit Sector: A Conceptual Framework. *Financial Accountability & Management*. 27(1): 32-42.

Appendix A: Overview of the Respondents  
 Number of Paid-Employees in the Sample

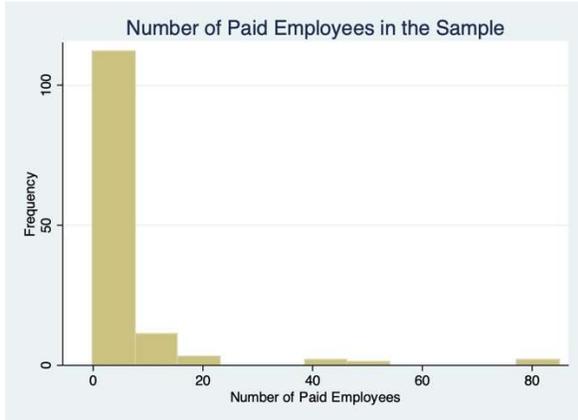
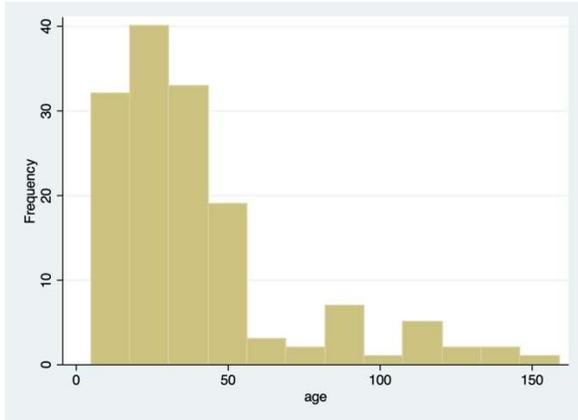


Figure 1-2: Organization Age Distribution



**Frequencies for Performance Variables**

*1=strongly disagree/not at all to 5=strongly agree/use fully*

Question	1	2	3	4	5
I regularly use performance information to make decisions (N=150)	2%	8.67%	22.67%	49.33%	17.33%
Indicate the extent to which your organization has implemented benchmarks for measuring program outcomes (N=152)	9.87%	20.39%	26.97%	28.29%	14.47%
Indicate the extent to which your organization has implemented strategic planning that produces clear organization mission statements (N=152)	6.58%	13.16%	25%	32.89%	22.37%
Indicate the extent to which your organization has implemented systems for measuring customer satisfaction (N=152)	11.18%	20.39%	30.92%	29.61%	7.89%
To what extent do you agree that performance information is integrated into your organization's budget preparation process? (N=148)	3.38%	10.81%	19.59%	52.03%	14.19%

## Appendix B: Comparison of Selected and Full Models

	Full Model	Select Model	Full Model	Select Model	Full Model	Select Model	Full Model	Select Model	Full Model	Select Model
	Use of PM Info		Use of Benchmarks		Strategic Planning		Measure Customers		PM for Budgeting	
Significance of LR Test	p<.0046	p<0.0005	p<.0001	p<0.0001	p<.029	p<0.0285	p<.0022	p<0.0045	p<.00001	p<0.0004
Pseudo R <sup>2</sup>	.4897	.2485	.6286	.5760	.3672	.0727	.5148	.3027	.4781	.2328
AIC	65.35355	58.17548	57.8013	57.17024	75.7651	71.20519	63.94475	63.36003	84.93726	46.17303
BIC	83.11043	64.44261	75.55818	72.83808	93.52198	76.4278	81.70163	73.80525	103.1052	54.13889
Age	0.0382006		0.096911	0.0951447*	0.0442228		0.1134895*		0.0352915	0.1089927**
Number of FT Employees	-0.141543		1.229412	0.9972805**	0.3703794*		0.7719908*	0.1741068**	-0.167184	
Number of PT Employees	0.1269343	0.0825488*	-0.1696728	-0.1538292*	-0.0281809		-0.0369131		0.0679864	0.0711269**
Number of Members	-0.0056835	-0.0023028*	0.0064737	0.0046065*	-0.0027504		-0.0027458		-0.0003028	
Number of board members	-0.0545847		-1.318569	-1.078911*	-0.3257181		-1.200232**	-0.2849941*	-0.1478438	-0.6855849**
Capacity in Operation and Governance	4.059912		23.67343	18.49005*	12.40378*		9.227266		8.381085	12.63517**
Capacity in Human Resource	-1.865759		-31.65959	-25.16973*	-8.824248		-16.96105*	-3.532105*	-7.723043	-12.38304**
Capacity in Programs and Planning	-3.824118		9.795328	6.52239*	-0.8951276		8.037629*	3.632221*	-1.059939	
Capacity in Marketing	0.9574558		5.905426	5.767022*	-1.15001		-1.122097		2.403921	
Capacity in Networking and Advocacy	1.178923		-24.77565	-13.75165*	-4.124556		-6.014306	-3.805368*	.2331419	
Capacity in Financial Resources	1.121662		-2.099267		2.255085		-3.016954		-0.2881333	
Capacity in Information Technology	-2.344778		5.152976		3.415688	1.785969*	0.0367595		-2.145527	

### Appendix C: Correlation Matrix of all the Independent Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. age	-											
2. Number of FT Employees	0.3***	-										
3. Number of PT Employees	0.2*	0.65** *	-									
4. Number of Members	0.37** *	0.79** *	0.23*	-								
5. Number of board members	0.35** *	0.51** *	0.68** *	0.29**	-							
6. Capacity in Operation and Governance	0.03	0.08	0.12	-0.02	0.14	-						
7. Capacity in Human Resource	0.03	0.02	0.15	-0.12	0.14	0.68** *	-					
8. Capacity in Programs and Planning	-0.17	-0.01	0.09	-0.16	0.04	0.49** *	0.42** *	-				
9. Capacity in Marketing	0.06	0.08	0.14	-0.01	0.09	0.3***	0.45** *	0.50** *	-			
10. Capacity in Networking and Advocacy	0.05	0.18	0.25*	-0.08	0.14	0.26*	0.29**	0.28**	0.29**	-		
11. Capacity in Financial Resources	0.34*	0.46**	0.5***	0.31*	0.55** *	0.51** *	0.49** *	0.26*	0.47** *	0.49** *	-	
12. Capacity in Information Technology	0.12	0.17	0.22*	0.18	0.09	0.33**	0.29**	0.1	0.4***	0.39** *	0.42** *	-

\* p<.05, \*\* P <.01, \*\*\* p<.001

According to Lei and Wu (2007), when bivariate correlation is greater than .08 or less than -.8, multicollinearity occurs. Based on the result of correlation matrix, all ordered logit regression models do not suffer from the problem of multicollinearity because none of the bivariate correlations in the correlation matrix is greater than .08 or less than -.8

**Appendix D: Likelihood-Ratio Tests and Brant Test**

	<b>Models</b>					
	<b>Use of PM Info</b>	<b>Use of Benchmarks</b>	<b>Strategic Planning</b>	<b>Measure Customers</b>	<b>PM for Budgeting</b>	
<b>Likelihood-Ratio</b>	Chi2	8.03	45.04	2.39	22.5	33.42
<b>Tests</b>	prob>chi2	0.2363	0.0788	0.4948	0.2107	0.2398
<b>Brant Test</b>	Chi2	0.44	5.2	3.5	25.73	10.83
	prob>chi2	0.998	0.848	0.321	0.106	0.239

The results of Brant test and Likelihood-Ratio test affirm that the proportional odds assumption in the ordinal logit specifications is warranted