SEARCHING FOR ORGANIZATIONAL EFFECTIVENESS BY EXAMINING

FINANCIAL VULNERABILITY AND NONPROFIT FAILURE

by

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A THESIS

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Scholarly consensus is lacking on how to understand and assess nonprofit

organizational effectiveness, which is further compounded by the absence of a universal

nonprofit effectiveness measure applicable to all agencies. However, nonprofits that fail

to remain functioning as an organization are considered to be among the least effective.

Researchers have identified several factors contributing to nonprofit failure, with

financial difficulties among the most frequently cited. Four specific measures of

financially vulnerable nonprofits have been identified and tested on a limited basis. This

research sought to build on previous work by assessing the financial vulnerability of an

unexamined group of nonprofits, "Food Banks, Food Pantries," and testing the utility of

the measures in predicting organization failure. Food Banks are determined to be

structurally different than previously examined nonprofit sub-sectors, leading to reduced

applicability of the financial vulnerability measures. However, insufficient equity

balance is still found to be predicative of nonprofit failure.

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CHAPTER I

INTRODUCTION

To say that nonprofit effectiveness is difficult to define is an over-simplification of the issue. Indeed, research easily uncovers nearly as many theories on effectiveness as scholars examining the topic (Forbes, 2002). Some attempt to focus the discussion on publicly available accounting ratios that seek to estimate the total a nonprofit spends on program, management, and fundraising; but an increasing number of researchers argue that this not only relies too heavily on easily manipulated accounting measures, but also overlooks key components of effectiveness (Hager, Pollak, Wing, Rooney, & Flack, 2004; Trussel, 2003).

While "effectiveness" as a simple measure is not within our grasp, nonprofit failure is a bit easier to determine. Even though a measure of failure remains imperfect (Hager, Galaskiewicz, Bielefeld, & Pins, 1996), one can identify nonprofits that exist at a particular time, and then determine which among them have disappeared at a subsequent time. Nonprofits certainly fail or disappear for a variety of reasons (Hager et al., 1996); however, one could make the argument that those ceasing to exist are among the least effective (Kushner & Poole, 1996).

The nonprofit sector is large and quite varied, resulting in the inability of research to generalize information to "nonprofits" as a whole. Instead, measures and indicators

are developed and systematically applied to different sub-sectors of nonprofits, testing the unique characteristics of each sector. Researchers have previously developed financial vulnerability indicators (Tuckman & Chang, 1991) and tested the applicability of the indicators in predicting the demise of the sub-sector of nonprofit arts organizations (Hager, 2001). The purpose of this study is to build on previous work by assessing the financial vulnerability of the sub-sector of nonprofit human service organizations identified as "Food Banks, Food Pantries," and then examining the usefulness of the measures in predicting organization failure.

Expanding our knowledge of nonprofit financial vulnerability and organization failure will assist nonprofit managers and their concerned board members in building and maintaining stronger, more effective agencies. In turn, effective nonprofit agencies are better situated to fulfill their missions, serve their constituency, and positively impact their larger communities. A stronger understanding of financial vulnerability and organization failure may have additional implications for nonprofit donors and grantmakers who wish to determine the financial health of an organization as part of an assessment of organizational effectiveness. Determining the usefulness of financial vulnerability measures in another sub-sector of nonprofit organizations will provide nonprofit managers and boards of directors with additional tools to effectively manage and maintain financially healthy agencies.

CHAPTER II

LITERATURE REVIEW

Spanning the fields of healthcare, education, social and legal services, religion, and arts and culture, nonprofit organizations are vast in number, touching the lives of nearly every United States citizen whether as an employer, a service provider, a community partner, or as the recipient of donated time, talent, or treasure (Salamon, 2002). In the United States, over 1.7 million tax-exempt organizations were registered with the Internal Revenue Service (IRS) in 2005; within this group, over 1 million nonprofits are classified as 501(c)(3) organizations[1] (IRS Data Book, 2007, p. 54). In 2005, charitable nonprofits[2] reported $1.1 trillion in expenses, $2.0 trillion in total assets, and received over $243 billion in public support (Wing, Pollak, & Blackwood, 2008). All of this contributes to the classification of the nonprofit sector as an important and necessary component of American life.

Among charitable nonprofits, there exist vast differences in mission and size. One example may be a large nonprofit hospital with a multi-million dollar budget; another, a small, completely volunteer-run animal welfare organization with minimal revenue and expenses. Like all organizations, nonprofit agencies go through a lifecycle:

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[1] 501(c)(3) agencies include charitable, religious and similar organizations, including private foundations.

[2] Wing et al. (2008) define "reporting public charities" as 501(c)(3) organizations that are "considered charitable in scope, rely primarily on support from the general public or the government, and are required to file Form 990 with the IRS" (p. 141).

they are created, they grow and mature, and sometimes they close or fail[3] (Twombly, 2003). Occasionally, the closure of a nonprofit is a result of merger, mission completion, or changes to organizational goals (Hager et al., 1996); however, at other times, nonprofits fail under less positive circumstances, losing the ability to remain viable and functioning. Regardless of the cause of nonprofit "closure" or "failure," the end result may include unemployed staff, clients lacking service, and communities without needed agencies.

Organizational Effectiveness and Nonprofit Failure

Significant differences in organizational effectiveness and stability are present within the sub-sector of charitable nonprofits; some nonprofits are viewed as highly effective while others seem to barely hold on to survival (Hager et al., 1996). Researchers have examined organizational effectiveness looking for causes, best practices, and methods of measurement with little consensus (Baruch & Ramalho, 2006; Brown, 2005; Herman & Renz, 2004; Sowa, Selden, & Sandfort, 2004). As a mission- and goal-specific term, nonprofit effectiveness is somewhat subjective and unique to each institution (Sawhill & Williamson, 2001). As a result, organizational effectiveness is viewed as difficult to study, with nearly as many theories on effectiveness as researchers interested in its examination (Forbes, 1998).

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[3] Researchers differentiate between nonprofits that "close" with those that "fail" (Bowen, Nygren, Turner, & Duffy, 1994).

The lack of a universal measure of effectiveness that works for all nonprofits (Sawhill & Williamson, 2001), coupled with disagreement on how to understand and assess effectiveness in general (Herman & Renz, 1998), further compounds the lack of consensus on the issue. While developing one set of "best practices" that would ultimately guarantee effectiveness for every nonprofit agency is an unlikely outcome (Herman & Renz, 2004), size (i.e., total revenues) and growth are frequently cited as possible effectiveness indicators (Herman & Renz, 1999). Nonprofit organizational effectiveness is multidimensional and not reducible to a single measure (Herman & Renz, 1999), yet a nonprofit that fails to remaining functioning as an organization should be considered among the least effective (Kushner & Poole, 1996). Developing a better understanding of the causes of nonprofit failure will allow nonprofit managers and boards of directors to develop and sustain more effective agencies, and is thus of great importance to practice and research.

Nonprofit Failure and Financial Vulnerability

Researchers have identified a variety of factors contributing to nonprofit failure including: small size and moderate[4] age (Bowen et al., 1994; Twombly, 2003); competition for limited resources and niche overlap with other organizations (Baum & Singh, 1994); fiscal stress and the inability to raise adequate resources (Chambre & Fatt, 2002); and lacking relationships with institutions that have broad social acceptance and authority (Baum & Oliver, 1991). Nearly all of these factors can be connected with

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[4] Twombly (2003) found the highest rates of closure in nonprofits between 5 and 9 years of age.

financial health of the failed organization or difficulty competing for scarce resources. In a study of nonprofits' own accounts of their closure, Hager et al. (1996) found that financial difficulties were among the most frequently cited factors contributing to organizational failure. The financial strength of a given nonprofit is a concern to all stakeholders of the organization as "financial problems might not allow an organization to continue to meet its objectives and provide services" (Trussel, 2002, p. 17). As a result, researchers have examined nonprofit financial vulnerability and how it may affect organization failure.

Tuckman and Chang (1991) defined a nonprofit organization as financially vulnerable if "it is likely to cut back its service offerings immediately when it experiences a financial shock" (p. 445). Further, they hypothesized four criteria of financially vulnerable nonprofits: (1) inadequate equity balances; (2) revenue concentration; (3) low administrative costs; and (4) low or negative operating margins. The nonprofits in their study were divided among six typologies: (1) religious; (2) educational; (3) health care; (4) charitable; (5) support; and (6) other; in particular, the "charitable" category is overly broad, encompassing many sub-sectors of nonprofit agencies[5]. Tuckman and Chang (1991) acknowledged that significant differences exist within the assigned nonprofit categories, and noted that their study did not "fully capture the financial problems of social service agencies" (p. 458).

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[5] Tuckman and Chang (1991) defined "charitable institutions" as 501(c)(3) organizations providing a wide range of "charitable functions" including "feeding the domestic poor, preserving the environment, providing planned parenthood services, and providing free legal aid" (p. 454).

Greenlee and Trussel (2000) sought to expand the conceptual framework of Tuckman and Chang (1991) by determining whether nonprofit financial vulnerability could be predicted using data from IRS Form 990. Their study used Tuckman and Chang's (1991) theory, along with existing models predicting financial vulnerability in the for-profit sector, to develop and test a financial vulnerability prediction model for nonprofits. Still, Greenlee and Trussel (2000) developed and tested their model with a broad sample of "charitable organizations," noting the need to examine different types of nonprofits individually.

Hager (2001) furthered the work of Greenlee and Trussel (2000) by examining whether financial vulnerability could predict organizational failure. Noting the need to focus more closely on individual nonprofit sub-sectors, Hager (2001) specifically studied nonprofit arts organizations, further dividing the population into seven subgroups[6]. While it was found that the Tuckman-Chang measures were useful in explaining the closure of the overall population of nonprofit arts organizations, Hager (2001) noted that among designated subgroups the "applicability of the measures varied substantially" and called for further study of the measures in other nonprofit industries (p. 389).

Food Banks, Food Pantries

Included in Tuckman and Chang's (1991) broad category of "charitable institutions" are nonprofits that comprise a "private food assistance network" including

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[6] Hager (2001) examined the population of nonprofit arts organizations in the aggregate, and also divided that population into seven subgroups for more in-depth study: (1) visual arts organizations; (2) art museums; (3) performing arts centers and schools; (4) dance organizations; (5) theatre organizations; (6) instrumental and choral music; and (7) generic performing arts.

food banks, soup kitchens, and meals on wheels organizations (Daponte & Bade, 2006);

according to researchers, agencies such as these differ from other types of nonprofit

organizations in key ways. In general, food banks tend to be predominantly volunteer-

run, with little administrative structure or systems, and are seen as "fragile" organizations

(Eisinger, 2002).

> "Organizational effectiveness in these street-level food providers is a function
> mainly of individual effort and skills rather than rules, routines, support networks,
> or planning... effective functioning is dependent to a certain extent on the
> presence of a paid staffer, and most organizations have none. The reliance on
> paid staff to make the organization effective suggests that the very existence of
> these organizations is precarious. Individuals may move on, leaving behind
> organizations with few other institutional attributes that bear on effectiveness"
> (Eisinger, 2002, p. 128).

Based on the more rudimentary structure of food banks, as well as the somewhat transient

nature of the organizations themselves[7], one might anticipate different results in the

application of the Tuckman-Chang financial vulnerability measures in predicting

organization failure.

Even though researchers have suggested factors contributing to nonprofit

financial vulnerability (Tuckman & Chang, 1991), tested these factors to determine if

they accurately predict financial vulnerability (Greenlee & Trussel, 2000), and have

shown that financial vulnerability does influence organizational failure (Hager, 2001),

our knowledge remains limited. Empirical testing of the Tuckman-Chang measures in

predicting nonprofit failure is limited to a single study focusing on a single sub-sector of

nonprofit agencies. This study builds on the work of Hager (2001) by expanding the

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[7] Eisinger (2002) notes, "The world of... food providers is both tenuous and turbulent. Lists of providers
[i.e., organizations that "exist" or are surviving] are out of date as soon as they are printed" (p. 129).

application of the Tuckman-Chang financial vulnerability measures to a previously

untested population of nonprofit human service organizations identified as "Food Banks,

Food Pantries," and then examining the usefulness of the measures in predicting

organization failure.

CHAPTER III

METHODOLOGY

Data and Sample

This study uses data collected from financial information recorded on IRS Form 990 tax returns retrieved using the GuideStar database. Nonprofit agencies with gross receipts of $25,000 or greater are required to file an IRS Form 990 annually; as a result, basic financial information for reporting nonprofits becomes public record and available to interested stakeholders. Nonprofit agencies have varying fiscal years, and therefore, varying deadlines for filing tax returns. In addition, a nonprofit may choose to file an extension with the IRS, resulting in no tax return filed in a particular year, and two tax returns filed the subsequent year (Lampkin & Boris, 2002). To fully capture all filing nonprofits in the population, data on Form 990 tax returns were collected for multiple years.

The sub-sector of nonprofit human service organizations categorized as "Food Banks, Food Pantries" (hereafter, food banks) were identified via the NTEE (National Taxonomy of Exempt Entities) Classification System. Table 1 summarizes the characteristics of the food bank population for the study. All 501(c)(3) public charities with NTEE code K31 in the GuideStar database were identified. The population was

then restricted to only those nonprofit food banks filing a Form 990 in the 2001, 2002, or 2003 tax year (Hager, 2001).

Table 1. Characteristics of Food Bank Population in the Study

	Number of Organizations	Percentage of Total Number of Organizations
Registered nonprofits identified as K31 "Food Banks, Food Pantries"	1884	100.0
Registered nonprofit food banks not filing Form 990 from 2001-2003	1068	56.7
Nonprofit food banks filing at least one Form 990 from 2001-2003	816	43.3

The population of food banks (N = 816) was then divided into two strata: organizations ultimately considered "failed" and those that "survived." Consistent with Hager (2001), a nonprofit was considered "failed" if it did not file a Form 990 tax return in 2004, 2005, 2006, and 2007; likewise, a nonprofit that files at least one Form 990 in either 2004, 2005, 2006, or 2007 was considered to have "survived" (Table 2). A disproportionate stratified random sample was taken of the population (n = 80), with sample size determined by the number of failed nonprofits identified[8].

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[8] The sample for the study (n = 80) is comprised of all 40 failing food banks, plus 40 randomly selected surviving food banks.

Table 2. Distribution of Surviving and Failing Food Banks in the Study

	Number of Organizations, 2001-2003	Percentage of Total Number of Organizations
Total reporting food banks in population	816	100.0
Reporting food banks surviving from 2004-2007	776	95.1
Reporting food banks disappearing from 2004-2007	40	4.9

Measures

Summarized in Table 3, the independent variables in the study are the four measures of financial vulnerability as suggested by Tuckman and Chang (1991). The financial vulnerability measures were calculated for the sample using finances reported on Form 990 in the 2001, 2002, and 2003 fiscal years. Nonprofits that filed more than one Form 990 during this time period had financial information averaged prior to constructing the variables (Hager, 2001).

Equity Balance

"Equity" may take several forms, but is most commonly comprised of retained savings and investments, owned land or buildings, and endowment funds. Tuckman and Chang (1991) hypothesized that financially vulnerable nonprofits will have low, inadequate equity balances, while nonprofits with larger amounts of equity would be better positioned to withstand a financial shock. In effect, agencies with higher equity

balances have a source of reserve "emergency funds," making equity a source of

replacement revenue during challenging financial times, and providing an alternative to

implementing program reductions.

Table 3. Financial Vulnerability Measures

Measure	Formula
Equity Balance	$\dfrac{\text{end of year net assets}}{\text{total revenue}}$
Revenue Concentration	$\sum \left(\dfrac{\text{revenue source}_i}{\text{total revenue}} \right)^2$
Administrative Costs	$\dfrac{\text{administrative expenses}}{\text{total expenses}}$
Operating Margin	$\dfrac{\text{total revenues} - \text{total expenses}}{\text{total revenues}}$

Equity balance is calculated by dividing end of year net assets by total annual

revenue[9]. The result is a positive number approximating the relative amount of "reserve

funds" held by a nonprofit; higher values of equity balance will be indicative of relatively

larger amounts of net assets, while lower values will be indicative of relatively smaller

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[9] Four organizations with proportionately high net assets to annual revenues led to extreme outliers. These organizations were either spending down net assets while generating little to no revenue (i.e., "going out of business"), or were reporting extremely large values (proportionate to revenue) of donated land, buildings, or depreciable equipment as net assets. These outliers were removed from the sample prior to the analysis.

amounts of net assets (an equity balance of 0.0 would indicate a zero balance of net assets reported by the nonprofit).

Revenue Concentration

Nonprofits may earn revenue from a variety of sources: gifts, grants, fee for service, membership dues, and investment earnings, among others. Nonprofits with diverse revenue sources are better able to withstand financial shocks than those with fewer revenue sources, as an unexpected reduction in one revenue source may be tempered by the other revenue streams. Tuckman and Chang (1991) associated more concentrated revenue with financially vulnerable nonprofits.

Revenue concentration is calculated by summing the squares of the proportions of total revenue each income source represents[10] (Greenlee & Trussel, 2000; Hager, 2001). The result of the calculation is a positive number with a maximum value of 1.0; low values are indicative of diversified revenue and higher values indicative of concentrated revenue (revenue concentration equal to 1.0 would signify all revenue coming from a single income source).

For the purpose of calculating revenue concentration, previous studies have defined an "income source" as each individual revenue line item reported on IRS Form 990 (Greenlee & Trussel, 2000; Hager, 2001). Form 990 considers "public support" one

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[10] A reported net loss on Form 990 for an individual income stream will compromise this measure since a negative number squared will contribute a positive value to the overall sum, resulting in a revenue concentration value that exceeds 1.0. This was the case for two organizations in the sample; consistent with Hager (2001) "negative incomes (losses) were reset to a value of 0" prior to calculating revenue concentration for those nonprofits (p. 390).

revenue source whether the income is in the form of cash donation, in-kind donation (e.g., donated food), or grants received. To remain consistent with previous research calculations of revenue concentration, all public support is treated as one revenue source in this study as well. However, a more accurate measure of revenue concentration for food banks may result from dividing cash, in-kind, and grant revenues into individual income sources. Much of the variability in revenue concentration between surviving and failing food banks may be hidden when examining their public support revenue as one income source versus individually examining the diversity among cash, in-kind, and grant revenues.

Administrative Costs

The proportion of total expenses categorized as management and fundraising (i.e., non-program expenses) is the measurement for administrative costs. Tuckman and Chang (1991) proposed that nonprofits with higher administrative costs may be better able to withstand a financial shock as reducing administrative costs could be an alternative to cutting program services. Likewise, nonprofits with low administrative costs will have fewer reduction opportunities without impacting programs, resulting in the association of lower administrative costs with financial vulnerability.

Administrative costs are calculated by summing total annual management and fundraising expenses and dividing by total annual expenses[11]. Administrative costs will be a positive number with a maximum value of 1.0; low values are indicative of fewer administrative expenses, and higher values indicative of larger amounts of administrative expenses (administrative costs equal to 0.0 would indicate all annual expenses are categorized as "program").

Operating Margin

An organization's operating margin is the proportion of total revenue retained as surplus in a given fiscal year; that is, operating margin indicates the relative significance of annual budget surplus (or loss) when compared to an organization's total annual revenues. Tuckman and Chang (1991) suggested nonprofits with higher operating margins would have additional surplus on which to draw in the event of a financial shock. A larger, positive operating margin would provide a financial "cushion" for a nonprofit faced with an unexpected revenue decline or expense increase, as that agency would have surplus to access prior to immediate program reductions. Likewise, a nonprofit with a low or negative operating margin would have little or no annual surplus, associating low operating margins with financially vulnerable organizations.

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[11] The ease of calculating total management and fundraising costs varied based on whether the organization filed Form 990 or Form 990EZ. If properly completed, Form 990 requires organizations to specify the portion of total expenses designated as management and fundraising; Form 990EZ does not require this type of itemization. However, Form 990EZ does provide optional space for a nonprofit to itemize expenses. If expenses were itemized, administrative costs were consistently estimated, otherwise all expenses were considered to be program (i.e., administrative costs = $0).

Operating margin was calculated by subtracting annual total expenses from annual total revenues and then dividing the result by annual total revenues. Operating margin may be a positive or a negative number, but no greater than 1.0; larger, positive values will be indicative of favorable operating margins, and smaller or negative values will be indicative of unfavorable operating margins.

Analysis

The study examined the sample comprised of organizations from the two strata of failed and surviving nonprofits; the average equity balance, revenue concentration, administrative costs, and operating margin were calculated for the two groups, and mean differences determined using a two-sample t test. This analysis examined whether significant differences in the four financial vulnerability measures could be identified for nonprofits that survive versus nonprofits that ultimately fail.

A multivariate logistic regression model subsequently examined the relationship of the financial vulnerability measures to nonprofit failure. The logit analysis controlled for the effects of the independent variables and determined if any individual measure was more predictive of organization failure for the sample of food banks in the study. The logistic regression was modeled with all four financial vulnerability variables together and with each variable separately.

CHAPTER IV

RESULTS

Prior to analyzing the utility of the Tuckman-Chang measures in predicting

nonprofit failure, intercorrelations between the financial vulnerability measures were

calculated for the sample as a whole (Hager, 2001). Table 4 summarizes the results of

the intercorrelation procedure for the independent variables as well as the correlation of

the financial vulnerability variables with survival status.

Table 4. Correlation for Independent Variables and Survival Status

	Equity Balance	Revenue Concentration	Administrative Costs	Operating Margin
Revenue Concentration	-0.144			
Administrative Costs	0.158	-0.002		
Operating Margin	0.156	-0.147	0.133	
Survival Status	0.353**	-0.167	0.024	0.084

n = 76

*p<.05 **p<.01 ***p<.001

This examination finds the four Tuckman-Chang financial vulnerability measures to be unrelated empirically; none of the correlation coefficients were statistically different from zero. The only notable correlation is between equity balance and survival status ($r = 0.353$). While the correlation is moderate, it is statistically significant and in the expected direction; the other correlations between the remaining financial vulnerability measures and survival status were not significant.

The first analysis involved examining the average data for the two strata of "survivors" and "failures." Table 5 reports descriptive statistics and mean values for the financial vulnerability measures by survival status. Average equity balance, revenue concentration, administrative costs, and operating margin were calculated for surviving and failing food banks, looking for significant mean differences in the independent variables. The average surviving food bank has a higher equity balance than the average failing food bank, an expected result and one consistent with the correlation measure. However, average revenue concentration, administrative costs, and operating margin did not differ significantly between surviving and failing food banks in the study.

Table 6 reports the results of the final analysis, which involved multivariate logistic regression models to determine the relationship of the financial vulnerability measures to organization failure. For both Model 1 (which examines the influence of all variables on nonprofit failure) and Model 2 (which examines the influence of equity balance alone on nonprofit failure), equity balance was found to be predictive of organization failure for the nonprofit food banks in the study. The other three financial vulnerability measures, revenue concentration, administrative costs, and operating

margin, all appear to be irrelevant in predicting the failure of nonprofit food banks. This result is consistent with the t test, and leads to the conclusion that higher equity balances are beneficial to the survival of nonprofit food banks in the study.

Table 5. Mean Values of Tuckman-Chang Measures, by Survival Status

	Equity Balance	Revenue Concentration	Administrative Costs	Operating Margin
Survivors (n = 39)				
Min	0.015	0.405	0.000	-0.261
Q1	0.316	0.860	0.025	-0.031
Median	0.478	0.962	0.073	0.024
Q3	0.912	0.997	0.185	0.109
Max	2.446	1.000	0.524	0.385
Mean	0.714	0.901	0.122	0.044
SD	0.603	0.154	0.131	0.115
Failures (n = 37)				
Min	0.000	0.543	0.000	-3.325
Q1	0.056	0.987	0.000	-0.016
Median	0.166	1.000	0.031	0.020
Q3	0.527	1.000	0.122	0.172
Max	1.700	1.000	1.000	0.989
Mean	0.331	0.946	0.114	-0.030
SD	0.402	0.115	0.223	0.628
t	-3.276**	1.468	-0.201	-0.706
df	66.55	70.24	57.52	38.31
Effect Size	0.762	0.336	0.045	0.199

*p<.05 **p<.01 ***p<.001

Table 6. Logistic Regression Explaining Nonprofit Failure

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-1.237	0.790*	-2.541	-0.021	-0.047
	(1.944)	(0.366)	(1.807)	(0.275)	(0.231)
Equity Balance	-1.709**	-1.751**			
	(0.648)	(0.639)			
Revenue Concentration	2.110		2.685		
	(2.039)		(1.921)		
Administrative Costs	0.479			-0.266	
	(1.514)			(1.290)	
Operating Margin	-0.062				-0.420
	(0.563)				(0.607)
C	0.707	0.741	0.690	0.625	0.482
n = 76					

*p<.05   **p<.01   ***p<.001
(standard errors in parenthesis)

CHAPTER V

DISCUSSION

When we move from examining measures of financial vulnerability in large, aggregate groups of nonprofits to examining those measures within distinct nonprofit sub-groups, applicability of the measures varies significantly (Hager, 2001). Consistent with that trend, this study found only one measure of financial vulnerability (equity balance) to be significantly associated with nonprofit failure. Table 7 summarizes the logistic regression results of this study alongside those of Hager (2001).

As Table 7 highlights, two of Hager's nonprofit arts sub-groups (visual arts organizations and art museums) had only one significant financial vulnerability measure associated with organizational failure. In addition, two sub-groups (performing arts centers and schools and dance organizations) lacked any significant relationship between the Tuckman-Chang measures and organizational failure. Given the variability within sub-groups of nonprofit arts organizations, finding only one significant financial vulnerability measure applicable to food banks is certainly within expectations. However, possible explanations for the lack of significance in the other three financial vulnerability measures may relate to the unique nature and structure of food banks.

As food banks are predominantly volunteer-run, somewhat informal organizations, non-program costs such as management and fundraising (i.e., "administration") would inherently be very low, if not zero, independent of survival

status. The apparent size of an organization's administrative structure (as a measure of the amount of administrative costs) was quite similar between surviving and failing food banks in the study; that is, both surviving and failing food banks tended to be small, and focused primarily on program expenditures. As this seems to be the nature of food banks in general (Eisinger, 2002), it would not be predicted that the measure of administrative costs would vary significantly between surviving and failing organizations.

Table 7. Summary of Significant Findings in Logistic Regression Models

	Equity Balance	*Revenue Concentration*	*Administrative Costs*	*Operating Margin*
Food Banks	X			
Visual Arts Organizations		X		
Art Museums	X			
Performing Arts Centers and Schools				
Dance Organizations				
Theatre Organizations	X	X	X	X
Instrumental and Choral Music	X	X	X	
Generic Performing Arts		X		X

Given that food banks' revenue is typically in the form of cash and in-kind donations of food, and that food banks tend to have very low or even zero administrative costs, one may expect relatively low operating margins as well. In the absence of administrative expenses such as rent, utilities, or staff, nearly all food bank expenses become programmatic in nature. With missions focused on providing food to those in need, it appears that both surviving and failing food banks tend to "spend" all annual revenue as a method of meeting their mission. Both surviving and failing food banks in the study had low operating margins, a possible outcome of the apparent choice to distribute all annual revenue (i.e., donated food and additional food purchased with cash donations) to their constituents in order to successfully meet their mission.

Importance of Equity for Nonprofit Survival

The finding that equity balance is significant, even given the unique nature and structure of food banks, underscores the importance of financial security and stability in ensuring nonprofit survival. Repeatedly, scholars highlight that nonprofit survival is dependent not only on the ability to reliably generate adequate revenue (Baum & Singh, 1994; Chambre & Fatt, 2002; Herman & Renz, 1999), but also on the timing, predictability, and continuity of funding (Grønbjerg, 1993). As a result, a reliance on private donations tends to hinder nonprofit survival (Galaskiewicz & Bielefeld, 1998), primarily because nonprofits have less control over that type of revenue than other sources such as fees for service. Building equity helps stabilize nonprofit organizations by reducing the reliance on annual revenue, thus creating a source of "emergency" funds

that may be accessed in the event of unexpected revenue reductions or expense increases.

Indeed, the oldest nonprofit organizations tend to have "sizable assets," including

endowments (Bowen et al., 1994), and while "hoarding" of revenues to build equity

should not come at the cost of mission or service provision, building enough reserves to

ensure the stability of a needed nonprofit agency is advantageous to its future survival

(Irvin & Bowman, 2001).

Limitations

This study relied on data collected from IRS Form 990, and is subject to

associated limitations such as accounting manipulation and underreporting of

administrative expenses (Trussel, 2003). As a result, it is possible that the lack of

significance in the administrative costs variable is due to underreporting of administrative

costs across surviving and failing food banks. However, research suggests that Form 990

is reasonably reliable and provides an adequate source of data for studies such as this

(Froelich, Knoepfle, & Pollak, 2000).

Another limitation to this study is the relatively small sample size. Having the

resources available to fully examine the entire population of food banks would potentially

yield different results than those reported here. However, the sampling procedure utilized

in this study is appropriate for logistic regression (Allison, 1999).

Finally, the study is limited somewhat by the definition of "failure" utilized when

stratifying the population of food banks. It is quite possible that some of the nonprofit

food banks categorized as "failing" actually were survivors; likewise, it is possible that

some of the "surviving" food banks actually failed. The definition of "failure" is by no means perfect; however it appears to be the most accurate manner by which to make the determination of survival status using Form 990 data (Hager, 2001).

Conclusions

The term "nonprofit organization" references a commitment to mission and public service, not necessarily similarly structured agencies, financial plans, or constituencies. Efforts to generalize measures such as those predicting financial vulnerability or nonprofit failure to all "nonprofits" will be inherently problematic. As a result, this study sought to build on the existing research concerning nonprofit financial vulnerability and organizational failure by closely examining a sub-sector of nonprofits not previously studied in this manner.

The population of food banks sampled for this study is a very unique sub-sector within nonprofit organizations. Compared to nonprofit arts organizations (agencies often offering performances, classes, and other structured events), food banks are quite rudimentary. Operating on a "neighbor helping neighbor" basis (Eisinger, 2002), many food banks in the study function without paid staff, and with very little administration. The lack of formal structure gives the impression that food banks are often formed and dissolved based on the individual volunteers currently involved with the organization, an observation echoed by Eisinger (2002).

Based on the structural uniqueness of food banks, application of the Tuckman-Chang measures may be limited. Future research involving the sub-sector of nonprofit

food banks could include developing other measures for more accurate assessment of factors contributing to the financial vulnerability of this population. Specifically, revenue concentration could be re-examined with additional sub-categories for individual revenue sources (i.e., separating cash donations, in-kind donations, and grants received).

Beyond food banks, further expansion of the Tuckman-Chang financial vulnerability measures to other nonprofit sub-sectors is recommended and will continue to increase our understanding of potential predictors of nonprofit failure, as well as how those predictors vary by organization type. Increasing this knowledge will assist nonprofit managers and boards of directors in building stronger, more effective agencies. More effective nonprofits are better positioned to fulfill their mission and create the broadest public benefit. Perhaps most importantly, the more accurately effective nonprofit organizations can be identified and supported, the better informed an organization's staff, volunteers, donors, service-recipients, and collaborating agencies will be, ultimately yielding the most comprehensive benefit to communities as a whole.

REFERENCES

Allison, P. D. (1999). *Logistic regression using the SAS® system: Theory and application.* Cary, NC: SAS Institute Inc.

Baruch, Y., & Ramalho, N. (2006). Communalities and distinctions in the measurement of organizational performance and effectiveness across for-profit and nonprofit sectors. *Nonprofit and Voluntary Sector Quarterly, 35* (1), 39-65.

Baum, J. A. C., & Oliver, C. (1991). Institutional linkages and organizational mortality. *Administrative Science Quarterly, 36,* 187-218.

Baum, J. A. C., & Singh, J. V. (1994). Organizational niches and the dynamics of organizational mortality. *The American Journal of Sociology, 100* (2), 346-380.

Bowen, W. G., Nygren, T. I., Turner, S. E., & Duffy, E. A. (1994). *The charitable nonprofits.* San Francisco: Jossey-Bass.

Brown, W. A. (2005). Exploring the association between board and organizational performance in nonprofit organizations. *Nonprofit Management & Leadership, 15* (3), 317-339.

Chambre, S. M., & Fatt, N. (2002). Beyond the liability of newness: Nonprofit organizations in an emerging policy domain. *Nonprofit and Voluntary Sector Quarterly, 31* (4), 502-524.

Daponte, B. O., & Bade, S. (2006). How the private food assistance network evolved: Interactions between public and private responses to hunger. *Nonprofit and Voluntary Sector Quarterly, 35* (4), 668-690.

Eisinger, P. (2002). Organizational capacity and organizational effectiveness among street-level food assistance programs. *Nonprofit and Voluntary Sector Quarterly, 31* (1), 115-130.

Forbes, D. P. (1998). Measuring the unmeasurable: Empirical studies of nonprofit organization effectiveness from 1977 to 1997. *Nonprofit and Voluntary Sector Quarterly, 27* (2), 183-202.

Froelich, K. A., Knoepfle, T. W., & Pollak, T. H. (2000). Financial measures in nonprofit organization research: Comparing IRS 990 return and audited financial statement data. *Nonprofit and Voluntary Sector Quarterly, 29* (2), 232-254.

Galaskiewicz, J., & Bielefeld, W. (1998). *Nonprofit organizations in an age of uncertainty: A study of organizational change.* New York: Aldine de Gruyter.

Greenlee, J. S., & Trussel, J. M. (2000). Predicting the financial vulnerability of charitable organizations. *Nonprofit Management & Leadership, 11* (2), 199-210.

Grønbjerg, K. A. (1993). *Understanding nonprofit funding: Managing revenues in social services and community development organizations.* San Francisco: Jossey-Bass.

Hager, M., Galaskiewicz, J., Bielefeld, W., & Pins, J. (1996). Tales from the grave: Organizations' accounts of their own demise. *American Behavioral Scientist, 39* (8), 975-994.

Hager, M. A. (2001). Financial vulnerability among arts organizations: A test of the Tuckman-Chang measures. *Nonprofit and Voluntary Sector Quarterly, 30* (2), 376-392.

Hager, M. A., Pollak, T., Wing, K., Rooney, P. M., & Flack, T. (2004). *The pros and cons of financial efficiency standards.* Brief #5 from the Nonprofit Overhead Cost Project series. Washington, DC: Urban Institute. Retrieved May 6, 2009 from http://nccsdataweb.urban.org/kbfiles/521/brief%205.pdf

Herman, R. D., & Renz, D. O. (1998). Nonprofit organizational effectiveness: Contrasts between especially effective and less effective organizations. *Nonprofit Management & Leadership, 9* (1), 23-38.

Herman, R. D., & Renz, D. O. (1999). Theses on nonprofit organizational effectiveness. *Nonprofit and Voluntary Sector Quarterly, 28* (2), 107-126.

Herman, R. D., & Renz, D. O. (2004). Doing things right: Effectiveness in local nonprofit organizations, a panel study. *Public Administration Review, 64* (6), 694-704.

Internal Revenue Service Data Book 2007, Publication 55B, Washington DC, Issued March 2008. Retrieved February 2, 2009 from http://www.irs.gov/pub/irs-soi/07databk.pdf

Irvin, R. A., & Bowman, W. (2001). Optimal endowment level: The merits and demerits of hoarding. Unpublished working paper.

Kushner, R. J., & Poole, P. P. (1996). Exploring structure-effectiveness relationships in nonprofit arts organizations. *Nonprofit Management & Leadership, 7* (2), 119-136.

Lampkin, L. M., & Boris, E. T. (2002). Nonprofit organization data: What we have and what we need. *American Behavioral Scientist, 45* (11), 1675-1715.

Salamon, L. M. (2002). *The state of nonprofit America.* Washington, D.C.: Brookings Institution Press.

Sawhill, J. C., & Williamson, D. (2001). Mission impossible? Measuring success in nonprofit organizations. *Nonprofit Management & Leadership, 11* (3), 371-386.

Sowa, J. E., Selden, S. C., & Sandfort, J. R. (2004). No longer unmeasurable? A multidimensional integrated model of nonprofit organizational effectiveness. *Nonprofit and Voluntary Sector Quarterly, 33* (4), 711-728.

Trussel, J. M. (2002). Revisiting the prediction of financial vulnerability. *Nonprofit Management and Leadership, 13* (1), 17-31.

Trussel, J. M. (2003). Assessing potential accounting manipulation: the financial characteristics of charitable organizations with higher than expected program-spending ratios. *Nonprofit and Voluntary Sector Quarterly, 32* (4), 616-634.

Tuckman, H. P., & Chang, C. F. (1991). A methodology for measuring the financial vulnerability of charitable nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly, 20* (4), 445-460.

Twombly, E. C. (2003). What factors affect the entry and exit of nonprofit human service organizations in metropolitan areas? *Nonprofit and Voluntary Sector Quarterly, 32* (2), 211-235.

Wing, K. T., Pollak, T. H., & Blackwood, A. (2008). *The nonprofit almanac.* Washington, D.C.: The Urban Institute Press.