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Examining Nonprofit Financial Condition and Resiliency Strategies in Response to COVID-19

Trang Hoang – University of Nebraska Omaha
Craig S. Maher – University of Nebraska Omaha
Richard Nkrumah – University of Nebraska Omaha

Nonprofit organizations play a vital role in the provision of services. While many turn to nonprofits for help during a crisis, these organizations often find themselves confronting various funding challenges in uncertain and turbulent times. Previous studies have analyzed how financial indicators predict nonprofit vulnerability; however, there remains important unanswered questions about choices made by nonprofit leaders during periods of financial distress. Using a sample of medium- and small-sized nonprofits in the Midwest, coupled with NCCS Core-File data, this study shows that nonprofit response tactics tend to be attributed to their financial position. Nonprofits with higher levels of financial capacity adopt more strategic response tactics while reducing the need to adopt sporadic cutback measures. This study offers important implications for our understanding of the relationship between nonprofit financial condition, their response strategies, and resiliency.

Keywords: Financial condition, Resilience, Nonprofit, Response strategies, COVID-19

Introduction

The severe social and economic disruptions caused by the COVID-19 pandemic unleashed various financial and managerial challenges for nonprofits to maintain their services and generate revenues. While scholars have offered descriptions and classifications of response strategies that nonprofits applied in times of crisis, organizational conditions that may affect such reactions are often ignored (Geller et al., 2010; Maher et al., 2020; Mosley et al., 2012; Searing et al., 2021). Our study aims to shed light on how a nonprofit's response strategies are rooted in past managerial decisions with an emphasis on financial management capacities. Even though we assume that nonprofits with more resources can better weather external shocks, studies show that not all financial indicators are equal in helping nonprofits recover from fiscal distress (Searing, 2018; Calabrese, 2013). Therefore, a clearer understanding of what financial ratios work best for nonprofits during an unexpected financial shock is valuable and worthy of study.

In this study, we examine the question: What is the relationship between nonprofit's financial health and response strategies during a period of financial uncertainty? We use survey responses from medium- and small-sized nonprofits in the Midwest in 2020, coupled with National Center

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for Charitable Statistics (NCCS) 2019 Core-File data, to capture the actions taken by managers of nonprofits based on the financial condition of those organizations. Building on the resiliency framework from Searing et al. (2021) and Tuckman and Chang's (1991) measurement of nonprofit financial vulnerability, we provide empirical evidence that nonprofit's response strategies are influenced by pre-existing conditions of nonprofit revenue strategies and financial capacities.

More specifically, we found that greater revenue diversification reduced the probability that nonprofits experienced disruptions to services or supplies while increasing a nonprofit's ability to seek and receive external funding. Additionally, we found that greater operating surpluses, operating reserves, and contributions helped nonprofits reduce budget cuts. Just as important, our study provides empirical evidence to support Maher et al.'s (2020) resiliency-intention-sustain-endurance (RISE) model by demonstrating the differences in nonprofit response strategies in two phases: the immediate or resiliency phase, when the effects of the pandemic were severe and suddenly interrupted nonprofit operations; and the intention-sustain phase, when there was more funding available for nonprofits and the effects of the pandemic had gradually decreased. Our study also suggests that nonprofit financial capacity is a critical piece that connects the RISE model. Higher levels of organizational wealth or net assets and revenue diversification enable nonprofits to move from the reacting/responding stage to adopt more intentional/strategic actions toward sustainability and endurance.

This study makes valuable contributions to the literature by demonstrating the determinants of response strategies with a focus on nonprofit financial condition. We provide empirical evidence connecting financial condition and nonprofit resiliency literature. The nonprofit financial management literature has focused on generating ratios and empirically testing those ratios to assess nonprofits' financial capacity and sustainability, whereas the nonprofit resiliency literature has primarily emphasized qualitative analysis to establish response frameworks and adaptive tactics of nonprofits in the face of revenue crises or financial uncertainty. What remains less understood is the extent to which a nonprofit's financial condition influences its response strategies. This study serves to bridge this gap in the literature. More significantly, the findings from this study can help nonprofit practitioners prioritize their organization management strategies to maximize their organization's resilience during a period of resource scarcity.

Literature Review

Nonprofit Financial Vulnerability and Measurement

Assessing response strategies used by nonprofits during economic downturns requires defining financial vulnerability. Previous studies have provided an array of approaches to measure and predict nonprofit financial vulnerability, from revenue structure analysis to financial ratio analysis, along with the analysis of nonprofit density and resource competition (Caroll & Stater, 2009; Prentice, 2016; Trussel, 2002; Lu, Shon, & Zhang, 2020; Chikoto & Neely, 2014; Lecy & Van Slyke, 2013; Young, 2007; Paarlberg et al., 2018). Tuckman and Chang (1991) were research pioneers interested in the concept of nonprofit financial vulnerability. They offered a comparative analysis where vulnerability was based on quintile rankings and asserted that a nonprofit was financially vulnerable if it was in the lowest quintile of at least two of the following four ratios: equity balance; revenue concentration; administrative costs; and operating margin (Tuckman & Chang, 1991). Tuckman and Chang emphasized that higher rankings in these four ratios should enable nonprofits to withstand financial shocks, revenue fluctuations, and donation instability due to social, economic, or political reasons (1991).

Tuckman and Chang's (1991) research spurred interest in nonprofit financial condition analysis that led to the refinement of measures and an appreciation of the importance of context. For

instance, Thomas and Trafford (2013) proposed a financial exposure index based on the mean score of Tuckman and Chang's ratios and evaluated the financial exposure of nonprofits in the United Kingdom during the pre- and post-2008 economic downturn. Bowman (2011) added a time dimension to the analysis, meaning that fiscal condition/analysis, from his perspective, needs to consider short-term resilience and long-term sustainability. Short-term resilience focuses on liquidity (assets relative to spending) and is relative to assets, whereas long-term sustainability focuses on debt (assets relative to liabilities) and return on assets (the degree to which balances grow) (Bowman, 2011).

Nonprofit Adaptive Tactics and Resiliency

Nonprofit resilience work has evolved from predicting financial survival during stress periods to studying adaptive tactics, coping mechanisms, and response strategies utilized by nonprofits facing financial distress. The concept of resilience generally encompasses an organization's ability to continue operations during adverse periods (Searing et al., 2021; Bowman, 2011). Bowman (2011) highlighted the connection between nonprofit financial condition and reactions to financial uncertainty by emphasizing that financial capacity means "resources that give an organization the wherewithal to seize opportunities and react to unexpected threats" (p. 38).

Research suggests that identifying risks and potential shocks could result from effective financial accountability while encouraging financial sustainability and innovation (Bowman, 2011; Geller et al., 2010). Common nonprofit response strategies include cutting programs, rationing services, retaining volunteers and professional staff, looking into new sources of income, pursuing governmental and corporate funds, postponing service hires, freezing salary and discretionary spending, and/or cutting back on utilities and travel (Alexander, 2000; Boris et al., 2010; Geller et al., 2010; Larson & Carroll, 2023). Engaging in organizational collaborations and partnerships have also been effective in bolstering nonprofit capacity when confronting financial challenges (Austin, 2000; Sowa, 2009; Gazley, 2010; MacIndoe & Sullivan, 2014).

Research by Mosley et al. (2012) and Searing et al. (2021) provide frameworks for studying nonprofits' adaptive tactics and resiliency strategies under revenue scarcity. Focusing on nonprofit managers' responses to the 2007–09 Great Recession, Mosley et.al. (2012) found that organization structure and managerial, and financial characteristics influenced a nonprofit's response strategies. Larger organizations with higher levels of capacity allowed nonprofits to be more flexible in selecting their adaptive tactics (Mosley et al., 2012). Searing et al. (2021) couched their analysis in a resiliency framework to study nonprofit response strategies following the 2015–2017 Illinois budget stalemate. Through a series of in-depth interviews and secondary data, the authors identified five overarching themes representing response strategies, including "financial tactics (cashflow monitoring and revenue diversification), human resources (reducing staff), outreach (fundraising), programs and services adjustments, and management and leadership (planning and taking strategic actions)" (Searing et al., 2021, p. 186).

Related to nonprofit's responses to financial and operational interruption caused by the pandemic, Maher and colleagues (2020), proposed a RISE model as a starting point to understand nonprofit adaptation and recovery strategies. According to the RISE model, nonprofits responded to the unexpected financial shock caused by the pandemic in different phases. In the earlier stage of the pandemic, nonprofits adopted "resiliency" or "survival" actions to stay in business. In the intermediate stages, nonprofits implemented response strategies to stabilize operations and their organization's financial condition. In the long term, nonprofits adapted to the emerging environment post-pandemic and implemented strategies to address their financial vulnerability and strengthen their financial endurance.

We, therefore, have a well-developed body of literature focusing on financial metrics and a developing body of work examining nonprofit financial resilience. Regarding the former, there remain unanswered questions about measurement interpretation, for example, is revenue concentration helpful, and are administrative costs a hindrance or positive influence on nonprofit's financial viability? Regarding the latter, the resiliency literature is underdeveloped and a bit more exploratory in nature. While there are anecdotal discussions of the linkage between organization financial capacity and response strategies, the empirical evidence is scant. This study attempts to fill this gap in the literature by merging these areas of study and shed light on the manner and extent to which nonprofit financial condition impacts response strategies discussed in the resiliency literature.

Conceptual Framework

Applying Bowman's (2011) definition of financial capacity to a nonprofit resiliency framework, this research focuses on understanding how nonprofits' financial capacity enabled these organizations to react to an unexpected fiscal shock. We conceptualized the effects of the pandemic as an unexpected fiscal shock that forced nonprofits to adopt different actions or tactics, including operational costs and staffing adjustment, cutback measures, and/or ways to seek additional funding and avoid operational disruptions.

We sought to better understand whether under sudden and unexpected financial shocks, nonprofits responded in a systematic way that is associated with the nonprofit's financial position or whether nonprofits utilized a "garbage can" approach by considering cutback or response options that were convenient? Are nonprofit response tactics path-dependent and rooted in their pre-existing conditions and financial management decisions, or impulsive responses to external shocks? Knowing this, we can offer suggestions to nonprofit leadership on how to strengthen their fiscal resilience.

Applying the financial vulnerability framework, we hypothesize that the intensity of response strategies is associated with financial vulnerability. As financial vulnerability increases, the rational models predict that organizations take more intensive response strategies. We applied Tuckman and Chang (1991) to identify four financial indicators, i.e., equity balance, revenue diversification, administrative costs, and operating margin, to measure nonprofit financial vulnerability. The literature is consistent in reference to equity balances and operating margins, meaning that the lower these ratios, the greater the nonprofit's financial vulnerability, which leads to more intense response strategies. The literature is more divided about the interpretation of revenue diversification and administrative costs in relation to financial vulnerability (e.g., see Mitchell & Calabrese, 2019). However, based on the assumption that revenue diversification can provide nonprofits with greater flexibility to shield against external and sudden financial shocks, we should expect that revenue diversification reduces nonprofit financial vulnerability while promoting organizational stability (Carroll & Stater, 2009; Mayer et al, 2014; Hung & Hager, 2019). We, therefore, hypothesize that greater revenue diversification is associated with lower financial vulnerability, which leads to less need to implement more severe response strategies. We also anticipate that increases in administration costs increase financial vulnerability, therefore leading to a greater need for intense response strategies in times of crisis.

Data and Methods

To empirically examine how nonprofits responded to financial uncertainty, we utilized a set of surveys that gauged their financial status and responses to COVID-19.[1] The first survey was

[1] We are grateful to Anne Hindery, director of Nonprofit Association of the Midlands, for sharing their membership survey data.

conducted in March 2020 to capture the early effects of the pandemic. The second and third surveys were conducted in May and October 2020 and helped us to further understand nonprofits' response strategies and the degree to which they adjusted tactics in response to the pandemic. The survey recipients comprise a convenience sample of nonprofit leaders in Nebraska and Iowa. Total responses to the first, second, and third surveys were 505, 232, and 249, respectively. The surveys included responses from different types of nonprofits, including arts, culture and humanities, health, human services, education, and others (environment and animals, international and foreign affairs, mutual and membership, public and societal benefit, and religion-related nonprofits). For this study, the survey responses in May and October were used to better capture financial status and response strategies.[2]

The data analysis for this study was conducted in two steps. First, using the full sample from the two surveys (May and October surveys), we describe the impacts of COVID-19 on the financial condition of these nonprofits. The timing and diversity of nonprofit types in the sample are noteworthy and help to illustrate a more comprehensive picture of operations since not all organizations were affected the same and the timing of the effects varied (including receipt of financial aid). Second, we conducted quantitative analyses to examine the relationship between nonprofit financial condition and their response strategies. For this analysis, the survey responses were combined with the corresponding organizations' Form 990s, obtained from the National Center for Charitable Statistics (NCCS) 2019 core files and the IRS database for tax exempt organization. We, therefore, examined response strategies in 2020 with 2019 nonprofit financial data. The final samples for the quantitative analysis were smaller (n = 43–63).[3] Despite these challenges, having data from these two surveys, which cover two different time periods during the pandemic, offered a more in-depth understanding of how nonprofits responded to financial and managerial interruptions during different phases of a fiscal shock.

Empirical Model

The study uses a multivariate *probit* regression model to explore the relationship between a nonprofit's financial capacity and its responses to the impacts of COVID-19:

$$Y_{it} = \beta_0 + \beta_1 OS_{i,t-1} + \beta_2 ER_{i,t-1} + \beta_3 RDI_{i,t-1} + \beta_4 EXP_{i,t-1} + \beta_5 RES_{i,t} + \beta_6 CR_{i,t-1} + \beta_7 DL_{i,t-1} + \beta_8 Size_{i,t} + \beta_9 NS_i + \varepsilon$$

The dependent variables are the probabilities of the strategies that a nonprofit (i) chose to enact and whether the nonprofit can apply and secure additional funding in year (t). Vectors $OS_{i,t-1}, ER_{i,t-1}, RDI_{i,t-1}$, and $EXP_{i,t-1}$ indicate a nonprofit's operating surplus, equity ratio, revenue diversification index, and compensation expenses, respectively, in 2019 (one-year priod to the event). Vector $RES_{i,t}$ presents the information on nonprofit reserves, which is measured using the survey responses in 2020. Control variables include $CR_{i,t-1}$ and $DL_{i,t-1}$, indicating the percentage of contributions in a nonprofit's revenue structure and its debt leverage in year 2019, as well as their budget size ($Size_{i,t}$), and subsector (NS_i) based on the survey data. ε is the error term. The models are analyzed using probit regression with robust standard error.

[2] Even though the March survey was helpful to understand the immediate impacts of COVID-19 on nonprofits, there are no clear response strategies taken by nonprofits (and government agencies) at that point other than monitoring and evaluating the situation (Maher, Hoang, & Hindery, 2020).

[3] In both surveys, respondents were not required to provide their organization information, but they can voluntarily leave their organization names or contact information. This factor significantly reduced the sample size. We can only identify EIN for organizations that provided their organization name and then used the EIN information to merge the survey data with NCCS-2019 Core File.

Variables

Dependent variables: We focus on two survey questions asking nonprofit leaders about their response strategies and their ability to apply for funding. In terms of response strategies, both surveys (May and October) asked, "Has your organization responded, or does it anticipate responding, to the spread of the coronavirus in any of the following ways? (Check all that apply, and/or share additional ways next to "Other") and offered five choices: "Cancel programs or event," "Disruption of services to clients and communities," "Disruption of supplies or services provided by partners," "Increase staff in absence of volunteer," and "Budget implications related to strains on the economy." In this study, we code each response strategy as a binary variable: the variable equals 1 if the option is chosen and 0 otherwise.

In terms of a nonprofit's ability to apply for funding, the May survey asked, "Did your organization apply for funding under the CARES Act?" and the October survey asked "Did the organization receive funding under the CARES Act?" Five options are offered in both surveys: Paycheck Protection Program (PPP); Economic Injury Disaster Loan (EIDL); Nebraska CARES Act Funding; Douglas County CARES Act Funding (also includes Omaha Community Foundation); and Others.[4] Instead of creating a binary variable for each funding option, we combined the answers and coded the variable 1 if the nonprofit applied/received the funding and 0 otherwise. This coding process enables us to focus on the final outcome of whether a nonprofit was able to secure additional funding during the period of financial distress. Appendix A presents the descriptive statistics for those responses. Overall, we found that cancellation of programs and disruption/cutback of services were the most common response strategies. There was also an increase in the number of nonprofits hiring staff in October, compared with May. Most nonprofits received funding from the PPP and from the state CARES Act funding.

Independent variables: Applying the concepts provided by Tuckman and Chang (1991) and Bowman (2011), we operationalized a nonprofit financial condition as a nonprofit's operating surplus, operating reserves, equity ratio, revenue diversification, and the percentage of compensation to total expenses. The first four indicators measure a nonprofit's financial condition, and the fifth ratio serves as a proxy for the level of professional capacity because the literature has shown that hiring and retaining professional staff requires improvements to compensation packages (Pallotta, 2009).

Control variables: Our empirical model controls for factors that are closely related to nonprofit characteristics and funding structure. Specifically, we control for the contributions as a percentage of total revenues, debt leverage, and budget size. We also include variables for nonprofit's classification to be consistent with the literature on financial measures and adaptive tactics by nonprofit type.

Findings

Descriptive Analysis

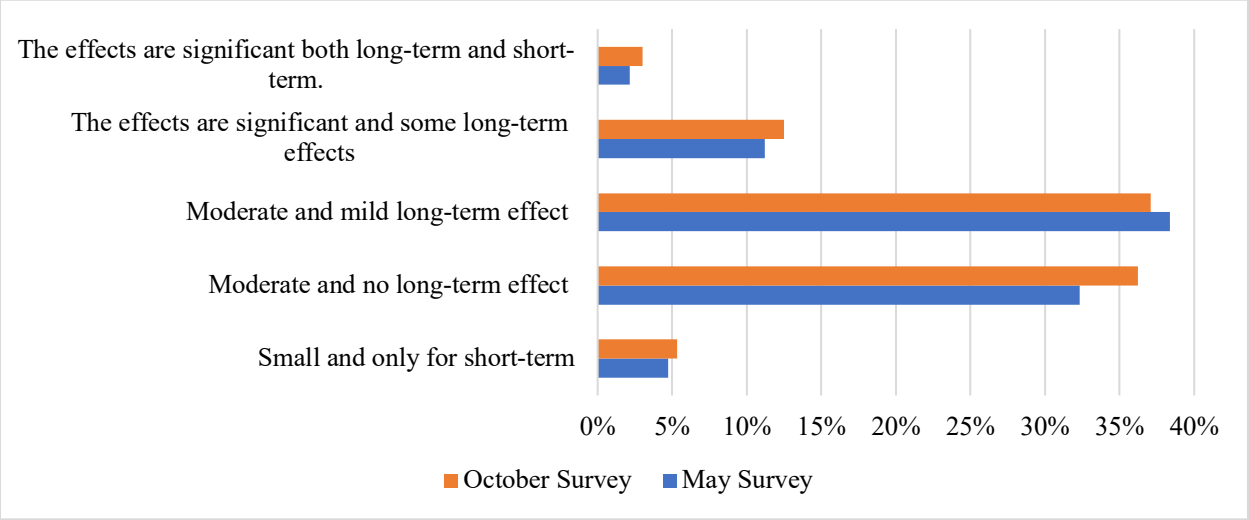
Figure 1 presents the financial impacts of COVID-19 on our sample of nonprofits in May (N = 232) and October (N = 249) surveys.[5] Most nonprofit managers who responded to the surveys said that

[4] In the Others option, respondents can fill in the information of the other funding sources that they applied or received. Some answers include: State of Iowa funds, Iowa CARES Act funding, Indian and Tribal Fund/Health Service, DHHS, and FEMA.

[5] We used the survey data (the number of responses in May and October surveys are 232 and 249 organizations, respectively) to present the financial impacts of COVID-19 on nonprofits in the sample (Figures 1 and 2). The survey data later were merged with NCCS-2019 core file (financial data), and the descriptive statistics of the nonprofit financial condition and operating reserves are based on the sample after the data merge.

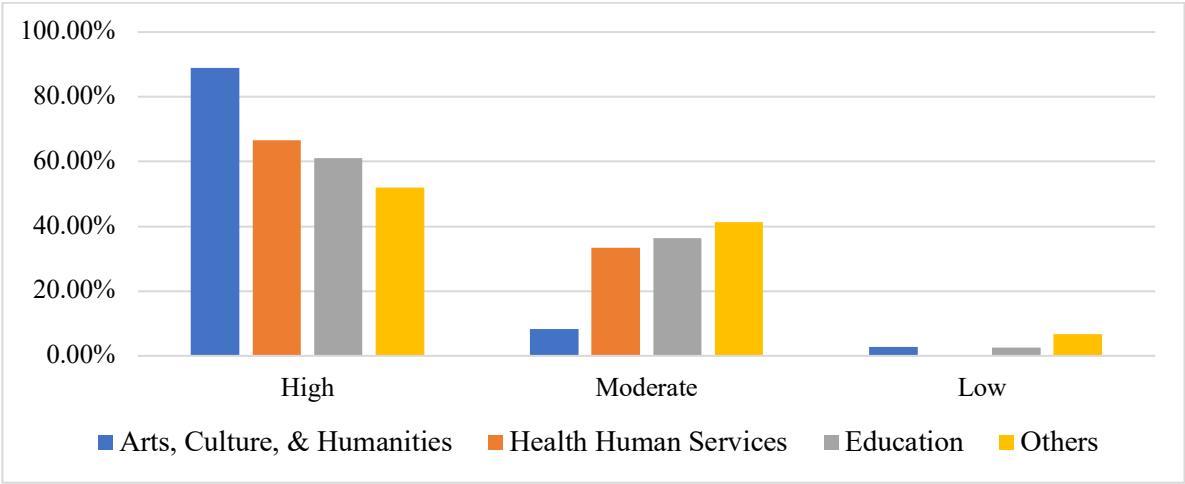
COVID-19 had moderate to significant impacts on their organizations. Approximately one-third of nonprofits reported moderate but no long-term effects, 37%–38% reported moderate and mild long-term financial impacts, 11%–12% reported that the effects were significant and had some long-term effects, and 2%–3% reported that the effects were significant in the short- and long-terms. In terms of nonprofit classification, 88% of arts, cultures, and humanities nonprofits reported severe financial impacts (up from 66% in March). Approximately two-thirds of education and health human service nonprofits reported severe financial impacts in May 2020 (Figure 2).

Figure 1. Short-term and long-term financial impacts of COVID-19



In response to the impacts of COVID-19, nonprofits canceled programs/events, cut services to clients or supplies, monitored/adjusted budgets, and increased staff to compensate for fewer volunteers. Most (80%–88%) nonprofits cancelled programs/events in May and October. In May, more than 80% of the nonprofits experienced disruptions and budget impacts that forced cutbacks in services or supplies. The percentage of nonprofits reporting budget and service adjustments modestly decreased to 77%–79% in October. In May, approximately 84% of the

Figure 2. Financial impacts of COVID-19 by subsector



nonprofits applied for funding and 81% of the nonprofits in the October survey received funding from their local, state, or federal governments. In May, nearly half (42%) of the nonprofits were able to, or planned to, increase staff in the absence of volunteers and the number increased to 54% in October. Table 1 presents the descriptive statistics of the variables.

In terms of financial condition, the average percentage of operating surplus in 2019 for these nonprofits in the May survey was 10.8% and 4.5% in October. Contributions and grants changed little between May (mean values for the May survey was 70.1%) and October (66.9%). The average revenue diversification index[6] was between 0.378 (May) and 0.423 (October). On average, nonprofits showed positive financial solvency with high equity ratios (average value is 78%–86% of total assets) and low debt leverage (between 2%–5% of total assets). More than one-third of expenses were compensation and salaries. From the survey responses, most indicated that their reserves enabled them to continue operations without additional funding. Every one in five nonprofits (20%) said that they maintained one to three months of operating reserves. Approximately one-quarter of respondents (27%, 28%, and 20.4%) said that their operating reserves could last for 4–6 months, 6–12 months, and longer than 12 months, respectively.

Table 1. Descriptive Statistics

Variable Description		May Survey		October Survey		Data Source
		Mean	Std. Dev.	Mean	Std. Dev.	
Dependent Variables						
Monitor budget	Binary variable (= 1 if a nonprofit has budget implications/adjustment related to strains on the economy)	0.847	0.362	0.793	0.407	Data collected from nonprofit surveys
Cutback from service	Binary variable (= 1 if there is a disruption to service)	0.777	0.418	0.730	0.447	
Cutback from supply	Binary variable (= 1 if there is a disruption to supply)	0.491	0.504	0.428	0.498	
Apply for funding*	Binary variable (= 1 if a nonprofit applies for external funding)	0.847	0.363	-	-	
Receive funding*	Binary variable (= 1 if a nonprofit received external funding)	-	-	0.810	0.396	
Increase staff	Binary variable (= 1 if a nonprofit hires additional staff in absence of volunteer)	0.424	0.498	0.540	0.502	

[6] To measure nonprofit revenue diversification, we used the revised Hirschman-Herfindahl index measure developed by Yan et al. (2009) and Suyderhoud (1994). Their calculation of revenue diversification ($RD = \frac{1-\sum_{i-1}^{i=n} R_i{}^2}{(n-1)/n}$), with 0 = total concentration and 1 = total diversification. These methods were also applied by other studies (Carroll & Stater, 2009; Calabrese, 2013).

Independent Variables						
Operating surplus	(Total revenue – Total expenses)/Total revenue	0.108	0.030	0.045	0.035	NCCS – Core File 2019
Equity ratio	(Total assets – Total liabilities)/Total assets	0.708	0.119	0.795	0.032	
RDI	Revenue diversification index	0.361	0.037	0.395	0.036	
Debt leverage	(Bond + mortgage)/ Total assets	0.048	0.017	0.031	0.012	
Compensation	Total compensation expenses/ Total expenses	0.357	0.030	0.323	0.030	
Operating reserves**	Ordinary variable (= 1 if having no reserve; = 2 if having 1–3-month reserves = 3 if having 4–6-month reserves; = 4 if having 6–12-month reserves; and 5 = if having longer than 12 months reserve)	-	-	3.429	1.058	Nonprofit surveys
Control Variables						
Contribution revenue	Total grants and contributions/ Total revenue	0.701	0.039	0.669	0.038	NCCS – Core File 2019
Budget size	Budget Size (= 1 if <$200,000; = 2 if between $200,000–$500,000; = 3 if between $500,000– $1,000,000; = 4 if between $1,000,000 and $5,000,000; and = 5 if >$5,000,000)	3.356	1.269	3.015	1.301	
Arts, culture, and humanities	Arts, culture, and humanities nonprofits	0.237	0.429	0.270	0.447	Data collected from the nonprofit surveys
Health & human services	Health human service nonprofits	0.390	0.492	0.476	0.503	
Other nonprofits	Other nonprofits, including education, environment and animals, public and societal benefits and religion-related	0.373	0.487	0.254	0.438	
Observations		59		63		

** The May survey asked if the nonprofit applied for funding; the October survey asked if the nonprofit received funding.*

***Since the NCCS-Core File 2019 data do not provide enough information on restricted vs nonrestricted net assets, it hindered our ability to generate a variable for nonprofit reserves. In this circumstance, we had to rely on a survey question that was only included in October survey.*

Our diagnostics indicate that the regression models were not impacted by multicollinearity (Appendix B) and Appendix C presents the *t*-test for the mean values for the sample of nonprofits in the May and October surveys. As the results show, there are no statistically significant differences between the mean values of financial condition in the two surveys. These empirical tests validate the comparability of the May and October surveys, making the sample suitable to examine the question of whether there are differences between nonprofit financial conditions and response strategies as time progresses through the proposed RISE model.

Multivariate Regression Analysis

Tables 2 and 3 present the findings from the probit regression models examining the relationship between nonprofit responses to COVID-19 in the May and October 2020 surveys and their financial conditions in 2019. We start the discussion with the findings from the May survey in Table 2. The most consistent effects in the models are the positive relationship between prior year's compensation expenses and the probability of nonprofits adopting cutback measures to their services and supplies, as well as their need to apply for funding at the onset of the fiscal shock. As compensation expenses to total expenses in 2019 increases by one-standard deviation (approximately 3%), the likelihood that nonprofits cutback services and supplies increases by 7.2% and 13.3% (respectively), the likelihood that nonprofits applied for funding increases by 8.7%, and the likelihood that nonprofits were able to hire more employees in the absence of volunteers at the early stages of the pandemic decreases by 12.9%. We also found that a one-standard deviation increase in revenue diversification in 2019 (approximately 3.7%) was associated with an 18% decrease in the likelihood that nonprofits had to reduce services to their clients/communities early into the 2020 pandemic. In addition, a one-standard deviation increase in equity ratios in 2019 (approximately 11.9%) was positively associated with a 10.1% increase in the likelihood of increasing staffing in the absence of volunteers as the pandemic unfolded.

The results from Table 3 reflect the relationships between nonprofits' responses in 2019 and the influences of financial condition on these strategies in October 2020. In the October survey, we consistently found greater revenue diversification heading into the pandemic positively impacted nonprofits by enabling leadership to secure external funding during the pandemic, whereas it reduced the likelihood that nonprofits had to continue monitoring their budgets or adjusting their budgets in the throes of the pandemic. Additionally, the results support the findings that nonprofit revenue structure and financial condition matters. We found that a one standard-deviation increase in contributions to total revenues (approximately 3.8%) decreased the likelihood of nonprofits monitoring their budgets by half. Conversely, a one standard-deviation increase in debt leverage (approximately 1.2%) was associated with a 10.4% increase in the likelihood of nonprofits monitoring their budgets. Furthermore, operating surpluses and operating reserves in 2019 were negatively associated with the probability of a nonprofit receiving COVID-related funding in 2020. Specifically, a one standard-deviation increase in operating surplus (approximately 3.5%) was associated with an 8.6% decrease in the likelihood of nonprofits receiving fundings.

Even though these results are often at odds in thinking of nonprofit financial capacity and their ability to raising fund, this can be explained by the fact that those nonprofits still have financial buffering through their surplus and reserves, which should affect their need to chase additional government fundings. We also found that increases in operating reserves in 2019 were negatively associated with the probability of nonprofits hiring additional staff during the pandemic. The result may be interpreted as a lack of need for additional fundraising staffing by organizations with higher reserves or potential constraint measures that prevent nonprofits from using the funds for staffing purposes, or to cover overhead costs in general.

Table 2. Probit Regression Analysis of Nonprofit's Response Strategies: May Survey

	Cutback from service		Cutback from supply		Apply for funding		Monitor budget		Increase in staff (in absence of volunteer)	
	(1)		(2)		(3)		(4)		(5)	
	β	Changes in $Pr(Y)$	β	Changes in $Pr(Y)$	β	Changes in $Pr(Y)$	β	Changes in $Pr(Y)$	β	Changes in $Pr(Y)$
Operating surplus	1.567	0.069*	1.155	0.085	-0.509	-0.021	1.351	0.055	-0.774	-0.060
	(1.060)		(0.782)		(1.316)		(1.119)		(0.975)	
Equity ratio	-0.668	-0.153	0.184	0.054	-3.898	-0.084	-0.071	-0.004	0.321*	0.101**
	(1.111)		(0.129)		(2.439)		(0.149)		(0.148)	
Revenue diversification index	-1.689*	-0.118	-0.716	-0.065	-7.353	-0.100	0.315	0.045	-0.507	-0.049
	(0.948)		(0.783)		(7.918)		(0.928)		(0.755)	
Compensation/total expenses	1.645*	0.072**	1.826**	0.133***	6.350***	0.087***	0.442	0.020	1.698**	-0.129**
	(0.971)		(0.776)		(2.212)		(1.047)		(0.844)	
Contribution/total revenue	-0.501	-0.034	0.273	0.026	-19.424	-0.434	0.190	0.025	-1.276	-0.125*
	(1.190)		(0.882)		(15.768)		(0.969)		(0.872)	
Debt leverage	0.1007	0.003	1.6475	0.067	0.000	-	-0.908	-0.024	-1.603	-0.069
	(2.111)		(1.9409)		(.)		(2.149)		(1.811)	
Budget size	0.428**	0.096***	0.290*	0.114	-0.207	0.014	0.116	0.033	0.238	0.102
	(0.197)		(0.176)		(0.294)		(0.176)		(0.182)	
	1.068	0.083*	-0.612	-0.082	0.000	-	0.000	-	-0.156	-0.022

Arts, cultures, and humanities	(0.661)		(0.514)		(.)		(.)		(0.498)	
Health and human Services	-0.696	-0.082	-0.256	-0.041	1.670	0.042	-0.177	-0.050	-0.062	-0.010
	(0.560)		(0.488)		(1.209)		(0.500)		(0.477)	
Constant	0.392		-1.674		20.702		0.176		0.665	
	(1.228)		(1.097)		(16.414)		(1.073)		(1.091)	
Pseudo *R*-squared	0.230		0.174		0.534		0.052		0.118	
Wald χ^2	14.535		19.225		15.250		3.647		12.264	
Pr(Wald χ^2)	0.105		0.023		0.033		0.888		0.199	
Observations	45		43		59		59		59	

Robust Standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$. The changes in *Pr*(*Y*) are calculated based on a change in one-standard deviation.

Table 3. Probit Regression Analysis of Nonprofit's Response Strategies: October Survey

	Cutback from service		**Cutback from supply**		**Received funding**		**Monitor budget**		**Increase in Staff (in absence of volunteer)**	
	(1)		**(2)**		**(3)**		**(4)**		**(5)**	
	β	**Changes in *Pr*(*Y*)**	***β***	**Changes in *Pr*(*Y*)**	***β***	**Changes in *Pr*(*Y*)**	***β***	**Changes in *Pr*(*Y*)**	***β***	**Changes in *Pr*(*Y*)**
Operating reserves	-0.044	-0.013	-0.166	-0.058	-0.488**	-0.115*	-0.646*	-0.133*	-0.437**	-0.145**
	(0.169)		(0.195)		(0.240)		(0.379)		(0.200)	
Operating surplus	1.010	0.074	0.778	0.074	-1.417*	-0.086*	-0.121	-0.006	-0.2116	-0.019
	(0.708)		(0.633)		(0.768)		(0.771)		(0.814)	
Equity ratio	0.945	0.064	0.151	0.013	0.696	0.032	1.911	0.077	0.090	0.007
	(0.758)		(0.796)		(0.804)		(1.392)		(0.839)	
Revenue diversification index	-0.790	-0.069	-0.771	-0.073	1.599*	0.077**	-6.924***	-0.390***	-0.070	-0.006
	(0.856)		(0.812)		(0.854)		(2.547)		(0.747)	
Compensation/total expenses	1.161	0.074	-0.335	-0.027	1.191	0.051	-2.335	-0.108*	0.140	0.011
	(1.026)		(0.904)		(1.207)		(1.520)		(1.015)	
Contribution/total revenue	-0.595	-0.054	-1.605*	-0.152**	1.361	0.069	-10.872**	-0.552***	-0.582	-0.056
	(0.828)		(0.915)		(1.003)		(4.691)		(0.826)	

	-0.184	-0.005	-0.266	-0.009	0.308	0.006	6.723	0.104*	-1.698	-0.055
Debt leverage	(1.934)		(1.785)		(1.909)		(4.212)		(2.141)	
Budget size	0.076	0.028	-0.041	-0.018	0.390*	0.082*	0.627**	0.119***	0.108	0.044
	(0.192)		(0.185)		(0.229)		(0.260)		(0.204)	
Arts, cultures, and humanities	1.311**	0.139***	0.923*	0.140*	-0.205	-0.018	0.447	0.034	0.218	0.031
	(0.590)		(0.544)		(0.534)		(0.591)		(0.523)	
Health and human services	0.499	0.067	1.221**	0.210***	-0.059	-0.006	-1.293**	-0.126**	1.029*	0.156**
	(0.537)		(0.514)		(0.665)		(0.635)		(0.536)	
Constant	-0.415		0.987		-0.605		12.328**		1.104	
	(1.385)		(1.253)		(1.386)		(5.325)		(1.352)	
Pseudo R-squared	0.126		0.140		0.286		0.389		0.193	
Wald χ^2	11.013		10.955		18.974		19.066		16.930	
Pr(Wald χ^2)	0.357		0.361		0.041		0.039		0.076	
Observations	63		63		63		63		63	

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$. The changes in $Pr(Y)$ are calculated based on a change in one-standard deviation.

Discussion

Using two rounds of surveys in 2020, our empirical analysis supports the argument that nonprofit response strategies were path-dependent on the organization's financial management decisions. Prior year's financial slack increased nonprofit resilience in coping with an unexpected financial shock while buying the organizations time to adopt more strategic actions toward sustaining operations. Specifically, nonprofits with greater revenue diversification heading into the pandemic had more flexibility in response to a sudden change in the environment. Nonprofits with better perceived and tangible financial sustainability, including greater operating surplus and reserves in 2019, had a buffer to weather operational and financial disruptions in 2020 and avoid the rush to react to external shocks. However, we reckon that there are more nuances between perceived financial capacity and nonprofit response strategies. Depending on the circumstance (sudden nature of the event, the level of uncertainty, the availability of financial aid), nonprofit financial capacity can have different impacts on the strategies that the organization can afford to adopt. In the earlier stage of the pandemic when uncertainty was high, nonprofits focused on temporary strategies such as program cuts. During this period, the prior-year's equity ratio, which is often used to measure nonprofit capacity or the resource required to response to unplanned challenges (Bowman, 2011), appears to have the greatest impact on sustaining nonprofit staff and operations. In the latter stage, when resources become available, nonprofits with diverse revenues tended to adapt quicker to the environment and actively sought additional revenue (government aids or community foundation).

To put the results in context, we acknowledge their limitations. The primary limitation of this study is the availability of data, specifically small sample sizes and the differences in data collection. Our convenience sample of Iowa and Nebraska nonprofits, after merging with the NCCS available financial data, resulted in small samples that limit the study's generalizability. Additionally, recognizing that nonprofit management decisions are context-dependent requires more caution in replicating this study outside the Nebraska–Iowa areas. This study also relied on a subjective measure of nonprofit's reserves. Since it is possible that nonprofit managers could define and measure reserves different from academic studies, this study may suffer a similar selection bias problem as other studies with the same survey instruments (Kim & Mason, 2020), which suggests that nonprofits with stronger reserves were more likely to respond to the survey.

Notwithstanding these limitations, having two waves of surveys in May and October of 2020, and the financial data of those nonprofits prior to the pandemic, the study not only empirically tested the relationship between nonprofit financial conditions and their response strategies but also illustrated the changes in response strategies as the pandemic progressed with less uncertainty and increased funding opportunities (particularly from federal financial assistance programs). Our results provide empirical evidence supporting the RISE framework (Maher et al., 2020) that nonprofits often adopted a "resiliency" strategy first to survive the unexpected financial shock caused by the pandemic by cutting down on programs and services and then started adopting more intentional and strategic response strategies, including funding application, staff hiring in absence of volunteer, and budget monitoring, to sustain their operations.

Conclusion

The nonprofit literature, starting with Tuckman and Chang (1991), focused on expanding the use of financial indicators to predict nonprofit vulnerability. Left unanswered was a key question: How do nonprofits recover and respond to financial stress? Relying on the resilience framework and the nonprofit vulnerability literature, we found that nonprofits' prior-year financial capacity

affected their response strategies, in the sense that nonprofits with higher equity ratios and greater revenue diversification were in a better position to weather financial shocks.
This study is among a few empirical examinations of the underlying factors influencing nonprofit response strategies. Additionally, this study provides empirical evidence to support the resiliency framework (Searing et al., 2021) and RISE model (Maher et al., 2020) while contributing to the existing literature by offering an empirically driven framework for understanding response strategies adopted by nonprofit managers during a period of financial distress. The timing of our surveys, which coincide with two distinct phases of the pandemic, enables us to illustrate the consistency of nonprofit's response strategies with the predictions of the RISE model. Nonprofits often adopted reactive activities in earlier stages of the pandemic, when there was economic, social, and policy uncertainty. The strategies became more intentional when the situation was less turbulent and federal funding gradually became more available. We found that nonprofits' response strategies were more consistent with the "rational model" and path-dependent on their prior financial and management decisions rather than an ad hoc "garbage-can approach."

Furthermore, these results raise questions about the importance of reserves and operating surplus in enabling nonprofits to weather rapid and unexpected changes in the external environment. Our findings demonstrate that fiscal slack heading into a fiscal shock, rather than fiscal leanness, can be more beneficial to nonprofits during crises. Financial reserves and higher equity ratios can benefit nonprofits because they enable nonprofits to respond more strategically while reducing the likelihood that services will need to be cut or supplies disrupted. The sudden and long-lasting effects of this pandemic forced nonprofits to adjust their financial management strategies. Better communication with donors and board members about the pros and cons of having reserves and operating surplus can help raise greater awareness about the financial needs of the organizations. This study also offers a few practical implications for nonprofit managers. In particular, the findings shed light on the role of revenue diversification. In general, nonprofits with greater revenue diversification heading into the pandemic experienced less service disruption (in May), less budget monitoring (October) and greater propensity to apply for funding (October). The results, at first blush, may appear somewhat contradictory, but one way to consider these findings is that, during the peak fiscal shock of COVID-19, revenue diversification was critically important. Having a diverse revenue portfolio enabled these nonprofits to navigate lockdowns imposed by governments and the inhibitions of individuals to attend events. It suggests that nonprofit managers could be more strategic in their thinking about accumulating reserves, developing new revenue sources and/or increasing fundraising during the normal or good operation periods to increase organization's capacity and preparedness for the next crisis.

These results also suggest consistency in budget adjustments to sustain service delivery/programming. For instance, as noted above, the pursuit of grants by nonprofits to mitigate fiscal shocks requires staffing; therefore, only nonprofits with the requisite administrative capacity had the luxury of pursing federal and state aids to counter the fiscal damage caused by COVID-19. Finally, this study encourages re-evaluating some of the nonprofit "proverbs" such as "fiscal leanness." Heading into a fiscal crisis, criteria such as avoiding operating surplus or accumulating reserves could hinder nonprofits' ability to react to external fiscal shocks. More comprehensive management strategies that consider different aspects of nonprofit's financial capacity and internal conditions, not the current one-size-fits-all approach, can be helpful to not only increase nonprofit efficiency but also their financial sustainability. Indeed, this pandemic has caused many challenges for nonprofits, but it also provides an opportunity for nonprofits managers and stakeholders, as well as researchers in the field, to reflect on some of the "proverbs," including organizational capacity and responses strategies to build stronger foundations for financial sustainability.

Disclosure statement

The authors declare that there are no conflicts of interest that relate to the research, authorship, or publication of this article.

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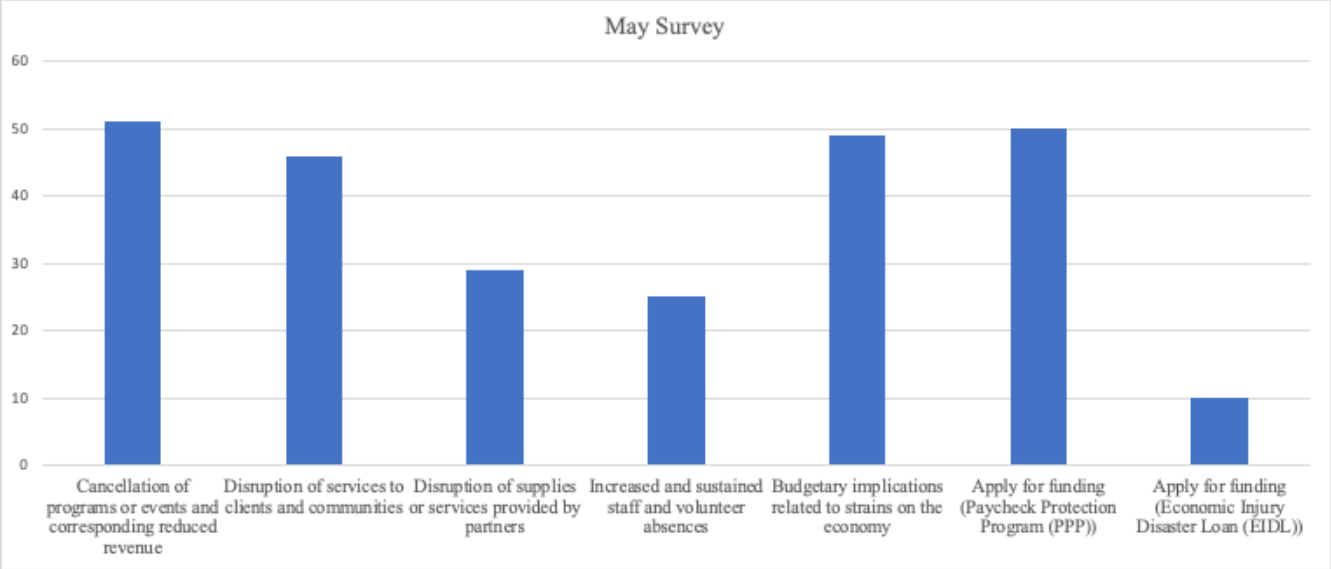
Author Biographies

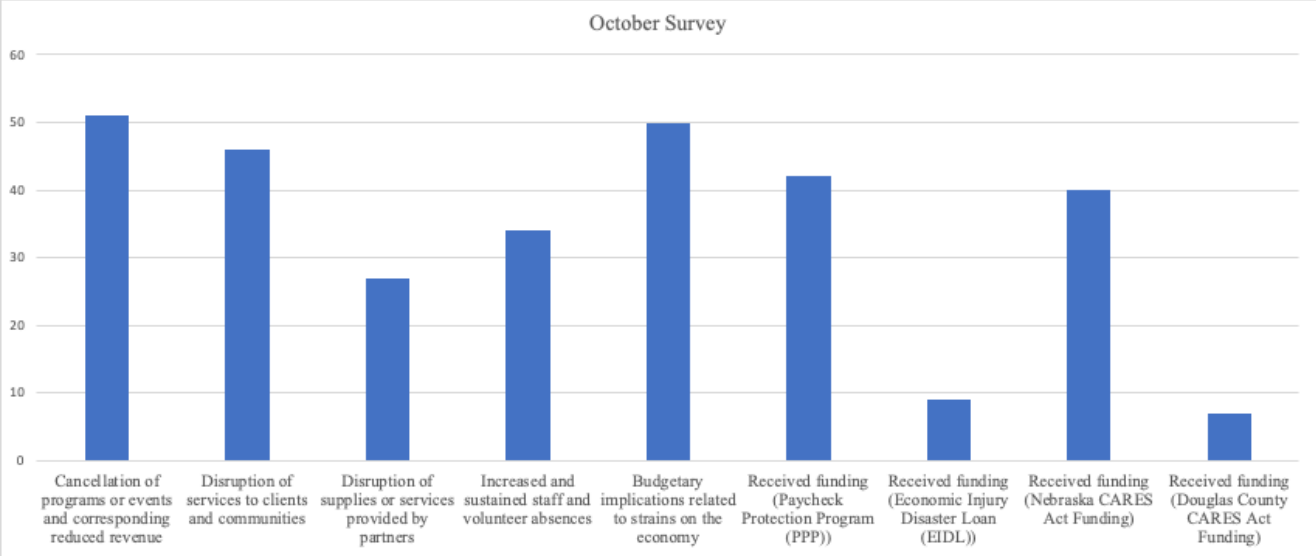
Trang Hoang is an associate professor in the school of public administration, University of Nebraska at Omaha, where she teaches graduate-level courses in public and nonprofit budgeting, human resources management, and research methods. Her primary research interests include public pension, municipal fiscal health, and nonprofit financial management.

Craig S Maher is co-editor of the *Public Finance* journal and director of the Nebraska state and local government finance lab at the University of Nebraska at Omaha. He recently co-authored *Understanding municipal fiscal health: a model for local governments in the USA*. ORCiD: https://orcid.org/0000-0001-5562-3473

Richard Nkrumah is a current PhD candidate at the school of public administration, University of Nebraska at Omaha. His research interests include public budgeting and finance, technology in government, and public policy. ORCiD: https://orcid.org/0000-0003-0957-6316

Appendix A. Descriptive Statistics of Nonprofit Response Strategies





Appendix B. Correlation Coefficients of Variables in the Models

May Survey

	Operating Surplus	Equity Ratio	Revenue Diversification Index (RDI)	Compensation /Total expenses	Contribution/ Total revenue	Debt Leverage	Budget Size	Arts, Cultures, & Humanities	Health & Human Services
Operating Surplus	1.000								
Equity Ratio	0.247	1.000							
RDI	-0.044	-0.062	1.000						
Compensation	-0.033	0.122	-0.082	1.000					
Contribution	0.235	0.293	-0.476	0.001	1.000				
Debt Leverage	-0.188	-0.362	0.014	-0.011	-0.605	1.000			
Budget Size	-0.116	-0.181	0.073	0.291	-0.275	0.337	1.000		
Arts, Cultures, & Humanities	0.164	0.169	0.333	-0.082	0.006	-0.224	-0.157	1.000	
Health & Human Services	-0.186	0.102	-0.212	0.236	0.028	0.189	0.381	-0.445	1.000

October Survey

	Operating Reserves	Operating Surplus	Equity Ratio	Revenue Diversification Index (RDI)	Compensation /Total expenses	Contribution/ Total revenue	Debt Leverage	Budget Size	Arts, Cultures, & Humanities	Health & Human Services
Operating Reserves	1.000									
Operating Surplus	0.322	1.000								
Equity Ratio	0.244	0.211	1.000							
RDI	0.15	-0.090	0.082	1.000						
Compensation	-0.383	-0.086	-0.168	-0.136	1.000					
Contribution	0.136	0.208	0.186	-0.449	-0.058	1.000				
Debt Leverage	-0.219	-0.035	-0.547	-0.112	0.198	-0.323	1.000			
Budget Size	-0.215	-0.161	-0.348	0.046	0.493	-0.230	0.269	1.000		
Arts, Cultures, & Humanities	-0.077	-0.228	0.045	0.048	-0.313	-0.063	-0.171	-0.173	1.000	
Health & Human Services	-0.056	-0.020	-0.057	-0.231	0.291	0.172	0.252	0.406	-0.579	1.000

Appendix C. T-test results

Variables	**Mean** **(May survey)**	**Mean** **(October survey)**	***Pr*(|*T*| > |*t*|)** **(Ha: diff != 0)**
Operating Surplus	0.109	0.045	0.184
Equity Ratio	0.708	0.795	0.466
RDI	0.360	0.396	0.495
Debt Leverage	0.048	0.031	0.398
Compensation	0.357	0.323	0.429
Contribution Revenue	0.701	0.669	0.557
Budget Size	3.396	3.015	0.103