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# The financial crisis was good for something: improved nonprofit efficiency

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**The Financial Crisis was Good for Something: Improved Nonprofit Efficiency**

**An Honors Thesis in partial fulfillment of the requirements for the Bachelor of Science  
in Business Administration in Finance and Economics**

**By**

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Finance and Economics, 2014**

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## **Abstract**

This study explores the need for financial performance measures in the nonprofit sector and the impact the 2008-2009 Financial Crisis had upon nonprofits' efficiency. This analysis tests the hypothesis that the financial crisis actually improved nonprofit efficiency by forcing nonprofits to eliminate unnecessary costs, continue to produce their services, thus improving operational efficiency, despite decreased donor contributions and increased user need. Entries reported on nonprofits' IRS 990 forms from 2003-2010 determined whether nonprofit efficiency was significantly different after the crisis. The efficiencies used to measure the impact of the Financial Crisis include: Program Expense Efficiency, Administrative Expense Efficiency, Fundraising Expense Efficiency, and Fundraising Efficiency. The results from this study show nonprofit efficiency as a whole did improve as a result of the financial crisis, thus improving the financial health of the nonprofit in the long-run.

## **Key Words:**

Nonprofit organizations, operational efficiency, financial crisis, performance measures

This honors thesis is approved for recommendation.

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## **Overview**

For-profit organizations have a set of performance and evaluation metrics, which are used to evaluate the performance of a company. On the other hand, leaders of nonprofits fall into the trap of using only soft measures to evaluate their organization instead of operational efficiency metrics, which for-profit use to evaluate their success. If nonprofits do not have a “business-minded” approach to their operations then the likelihood of their organization remaining successful is slim. Economic downturns can reveal vulnerability in for-profit and nonprofit organizations. These organizations have to continue to operate with reduced resources while facing increased demand for their product or service. Therefore when the Financial Crisis of 2008-2009 came upon nonprofits, questions arose regarding whether their operations and strategies would have to change in order to continue to make an impact during the difficult circumstances. This study will begin with a summary of the start of the financial meltdown and how it affected nonprofits’ operations. Then I will investigate whether the financial crisis was actually beneficial for nonprofits by forcing nonprofits to improve the efficiency of their operations in order to survive the downturn.

## **Historical Background**

The 2008-2009 Financial Crisis impacted not only the for-profit sector but also non-profit organizations. Bank failures and government bailouts brought uncertainty to the financial markets, which spread further to investors, businesses, and individuals. Investors started to become concerned during 2006 when the U.S. housing market peaked, and consequently during this time the bubble burst, leading the value of real estate securities to tumble drastically. Financial institutions used securitization to pool mortgages together and offer smaller packages to investors depending on their level of risk. This type of securitization created a secondary



market allowing less creditworthy individuals to obtain mortgages because the risk was distributed throughout the key players: originators, investors, and mortgage purchaser. Subprime mortgages became extremely popular and were easier to obtain for individuals wanting to purchase homes who previously had a difficult time finding a mortgage. When housing prices plummeted by the end of 2006 and continued throughout 2007, individuals faced difficulty paying their mortgages and therefore flooded the financial structure with defaults (Barth, Li, Lu, Phumiwasana, & Yago, G., 2009).

The following key events brought the crisis to center stage if the housing foreclosures and defaulted subprime mortgages had not already caught individuals' attention. On September 7, 2008, the U.S. Treasury took control of Fannie Mae and Freddie Mac, two government-sponsored enterprises with a total of \$14 billion in losses over the past year. On September 14, Lehman Brothers filed for the largest bankruptcy in United States history, Bank of America acquired Merrill Lynch, and the Federal Reserve offered AIG a bailout worth \$85 billion. JP Morgan Chase acquired Washington Mutual on September 25<sup>th</sup> and Wells Fargo acquired Wachovia on October 9<sup>th</sup>. Congress passed the Economic Stabilization Act on October 3<sup>rd</sup>, which allowed the U.S. Treasury to use \$700 billion of taxpayer money to bail out failing financial establishments (The Timeline: How it all happened, 2008). While these events were significant, the ripples these shocks passed on throughout the global economic community were astronomical. The United States real GDP growth rate for 2008 reached its lowest point since 1948 at -2.8 percent. The Dow Jones industrial average fell 54 percent from its peak on October 9, 2007 to March 2009. The Bureau of Labor reported unemployment rates rose dramatically and hit a peak in October of 2009 at 10 percent. Through this bleak, slow-moving recovery the 2008-2009 crisis was dubbed the "Great Recession" (Joon Yoon, 2011).

## **Financial Downturn's Effect on Nonprofit Organizations**

Similarly nonprofits felt the effects of the unstable economy in 2008 and 2009 just like for-profits and individuals. Grant writers, corporations and individuals, the largest contributors to nonprofits, had to prioritize their limited funds thus decrease charitable donations to nonprofits. The 2010 Fenton Forecast survey found two thirds of individuals planned to decrease their giving or give at the same rate as the previous year. Of those who said they would reduce their giving, half of them said their donations would be cut by a fourth (Nationwide, contributors happy with nonprofits, but still plan to reduce giving, 2010).

Not only are nonprofits facing the hardship of operating with fewer funds, but they also are experiencing an increase in demand for their services. The 2010 State of the Nonprofit Sector Survey found 80 percent of the sample predicted an increase in demand for their services and only 49 percent of these individuals felt as though they could meet the demands (Nonprofit Finance Fund's 'tool kit' provides certainty in uncertain times, 2010). The Nonprofit Finance Fund, a New York group, which helps charities improve their finances, surveyed over 1,900 nonprofits with budgets less than \$2 million and found 75 percent of organizations in the sample said they had an increase in demand for their services (Frazier, 2011). Tim Delaney, President and CEO of the National Council of Nonprofits, said, "Things are definitely worse for nonprofits. It's a matter of simple math. We've been doing so much more for so many more with so much less for so long that it isn't working anymore" (Report calls on government and nonprofit leaders to collaboratively find solutions to economic crisis, 2010). Nonprofits simply cannot meet the needs of those they are wishing to serve with declining donations.

Nonprofits are still feeling the impact from the financial crisis, with only 30 percent of organizations expected to end with a surplus in 2011, and 44 percent expected that they would

break-even. However, nonprofits are still conservative in their estimates for their 2011 budget outcomes, so higher surplus percentages could actually be higher than reported. For example in 2010, 45 percent stated they ran a surplus, which was a ten percent increase from 2009. However, positive reports seem to be on the horizon for nonprofits; the Nonprofit Finance Fund discovered over one third of the 1,900 nonprofits surveyed raised more money in 2010 than expected, and one fourth of the organizations revealed they added to their reserve funds. In fact, 55 percent of these nonprofits also said they added or expanded programs or services in 2010 and planned to do the same in 2011 (Frazier, 2011).

During rough economic times, nonprofits must change their operational process in order to continue to serve their mission when times have improved. Nonprofits can become complacent with grants and donor contributions, so when a downturn occurs they may be unsure of how to cope. Organizational efficiency begins with researching, planning, and implementing the best cost cutting measures for a particular group. Just like for-profit businesses, nonprofits must be strategic in how they survive a downturn. They should make short-term, medium-term, and long-term cost management goals (Brussalis, 2009). Selling, general, and administrative costs are most likely evaluated first. Nonprofits should actively and quickly look at methods to implement cost reductions; however, nonprofits must plan cost control measures before action takes place (Rhodes & Stelter, 2009). In addition, nonprofits have to be wary of not stunting their growth once financial troubles are over by scaling back too much (Warwick, 2009). For example, if a nonprofit decides to slash its marketing budget, then their already dwindling top-line contributions will suffer. Also as an alternative to massive layoffs, nonprofits can look at shortening their work week, giving employees mandatory time off, and enacting salary

reductions, so when recovery takes place they still have employees needed to rebuild and strengthen their organization (Steuer, 2009).

Nonprofits have faced a difficult time meeting the needs of their increasing client base with decreased revenues from individual and corporate donors as well as grant writers and government support during The Great Recession. However, did the 2008-2009 Financial Crisis force nonprofits to become more efficient by decreasing unnecessary costs in order to survive? If nonprofits did improve their organizational efficiency during the downturn, do these improvements prepare them to be more effective in meeting the needs of their clients when more resources are available as the economy improves?

In this study I predict as result of the financial crisis, nonprofits improved their organizational efficiency in response to decreased contributions and increased need for organizations' support. I, therefore, hypothesize that on average nonprofits' efficiency after the crisis is significantly different and superior to nonprofit's efficiency before the crisis.

### **Methodology From Previous Studies**

Predicting the financial stability of nonprofits has been the topic of study before the 2008-2009 Financial Crisis. Chang and Tuckman (1991) lead the way in arguing nonprofits must have a financial framework, just like for-profit companies, which evaluates the financial stability and vulnerability of the organization. They define a nonprofit as financially vulnerable if the organization "lacks the ability to avoid cutbacks in the programs and/or services that it offers when a financial shock occurs." Chang and Tuckman (1991) take a four-step methodology, using benchmarks similar to those for-profits use, to detect the nonprofits in the sample, which are financially vulnerable and therefore would not be able to withstand a financial downturn. This approach identifies four measures of nonprofit financial stability or vulnerability; adequate

equity, revenue concentration, administrative costs and operating margin. To perform analysis, Chang and Tuckman (1991) first divided the nonprofit sample into six categories describing the type of service the 501(c)(3) provided. Through these parameters Chang and Tuckman (1991) determined what percentage of nonprofits in their sample were “at risk” and “severely at risk” in terms of financial vulnerability. This study shows how the maintenance of financial factors is indeed important to the success of the performance and stability of nonprofits.

Chang and Tuckman’s methodology identifies which nonprofits are financially stable enough to withstand a financial downturn and demonstrates the importance of looking at nonprofits’ financials similarly to how for-profits look at their financials. However, these methodologies do not take into account the comparison of financial stability or vulnerability before and after a financial downturn, thus justifying the need for this current study. From the Chang and Tuckman (1991) study, I will use the idea that nonprofits must have some sort of financial measurements in place to determine the financial stability of the organization similar to how for-profits look at their financials, however, I do not necessarily use all of the same measurements from the previous study since I am more focused on nonprofit efficiency. With the current study, nonprofit sector stakeholders will not only be able to see the effect of this particular financial crisis on nonprofit operations, but hopefully nonprofit leaders will also be able to implement mechanisms in their operations which will reveal inefficiencies instead of waiting for a financial crisis exposing their inefficiencies.

### **Methodology and Data**

For this study, data were gathered from the tax returns (Form 990s) which 501(c)(3) organizations file with the Internal Revenue Service (IRS) annually. The IRS classifies a 501(c)(3) as an organization exempted from taxes due to “charitable, religious, educational,

scientific, literary, testing for public safety, fostering national or international amateur sports competition, and preventing cruelty to children or animals.” The 990 Form has a number of variables, which describe the financials of the nonprofits. The data used is a sample of 501(c)(3) nonprofit organizations with assets ranging between \$500,000 to \$50 million from 2003 filings to 2010. The number of nonprofits in the sample changed from one year to the next since some nonprofits remain functional while others fail. Table 1 reveals the number of nonprofits in a sample for each year. This set of data is not panel data, the variables of the same number of nonprofits over eight years; therefore the data are considered pool cross sectional data.

**Table 1: Number of Observations Per Year**

Year	2003	2004	2005	2006	2007	2008	2009	2010
Number of Observations	14285	14947	15731	16736	15922	13990	15777	13531

With the data at hand, I chose to use a combination of the efficiency ratios used by Charity Navigator, America’s largest charity evaluator, and Bierman (2013)’s Key Performance Indicators for Nonprofits published in *Nonprofit World*. Both suggest the performance and financial health of nonprofits can be evaluated by calculating four financial efficiency performance metrics to determine the health of a nonprofit’s finances: program expense efficiency, administrative expense efficiency, fundraising expense efficiency, and fundraising efficiency. Each efficiency will be compared before and after the financial crisis in order to see if efficiency significantly increased as a result of the financial downturn. Therefore the regressor is the binary term, ‘After the Crisis’ (efficiencies from 2010), coded as ‘1’ and Before the Crisis’ (efficiencies from 2003-2009), coded as ‘0.’ For simplicity’s sake ‘After Crisis’ will be truncated to ‘AC.’ Table 2 shows the descriptive statistics of each efficiency ratio over the eight years.

**Table 2: Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
AC	120919	.1119014	.3152464	0	1
PEE	117078	.8168523	.1785613	-5.554678	15.46961
AEE	117078	.1549696	.165548	-14.46961	6.554678
FEE	117078	.0281781	.069528	-.1586533	1
FE	103286	.609998	40.18412	-48.31004	9140.238

**Program Expense Efficiency (PEE)**

Program expenses refer to the cost, which comes with a charity’s ability to provide programs and services. Effective nonprofits are considered to be those with a high program to total expense ratio. This metric shows whether or not the majority of the funds raised are going to those in need. This ratio is important to donors, board members, and managers because the value enumerates how much a nonprofit is spending on their primary purpose rather than administrative costs. The following represents the regression equation, null hypothesis and alternative hypothesis for Program Expense Efficiency (PEE). A two-tailed test will be conducted where the AC coefficient is predicted to be statistically significant with a *positive* value.

$$\widehat{PEE} = \hat{\beta}_0 + \hat{\beta}_1 (AC) \qquad H_0: \beta_1 = 0 \qquad H_1: \beta_1 \neq 0$$

**Administrative Expense Efficiency (AEE)**

Administrative expenses are the costs not tied directly to the program or services of the charity, including, for example, salaries of employees and recruiting, training, and developing costs. When the ratio of administrative expenses to total expenses is low this value reveals the ability of the nonprofit to use just enough donated funds to keep the organization functioning so the organization can focus more of donated funds to the cause. Usually administrative expenses are one of the first places where organizations will cut costs when experiencing troubled times.

The following represents the regression equation, null hypothesis and alternative hypothesis for Administrative Expense Efficiency (AEE). A two-tailed test will be conducted where the AC coefficient is predicted to be statistically significant with a *negative* value.

$$\widehat{AEE} = \hat{\beta}_0 + \hat{\beta}_1 (AC) \qquad H_0: \beta_1 = 0 \qquad H_2: \beta_1 \neq 0$$

### **Fundraising Expense Efficiency (FEE)**

Fundraising expenses are the costs, which go into raising money used to serve individuals in need. Charity Navigator states, “Charities spend money to raise money, but they do not exist to raise money. Givers support charities for their programs and services, not for their ability to raise money.” Nonprofits must be careful to keep the fundraising expense to total expense ratio low, so they can spend raised funds for program services. The following represents the regression equation, null hypothesis and alternative hypothesis for Fundraising Expense Efficiency. A two-tailed test will be conducted where the AC coefficient is predicted to be statistically significant with a *negative* value.

$$\widehat{FEE} = \hat{\beta}_0 + \hat{\beta}_1 (AC) \qquad H_0: \beta_1 = 0 \qquad H_3: \beta_1 \neq 0$$

### **Fundraising Efficiency (FE)**

Finally, fundraising efficiency is the notion of spending less money to raise more money. This efficiency is measured by the ratio of fundraising expenses to total contributions. This metric shows how much a nonprofit spends in order to raise one dollar of donations (charitynavigator.org). Charity Navigator uses these efficiency measures to define an excellent charity as one, which succeeds when resources are not tied up in fundraising and administrative expenses. Successful nonprofits spend less on the process of raising contributions; therefore they maximize the resources they receive. The following represents the regression equation, null hypothesis and alternative hypothesis for Fundraising Efficiency. A two-tailed test will be



conducted where the AC coefficient is predicted to be statistically significant with a *negative* value.

$$\widehat{FE} = \hat{\beta}_0 + \hat{\beta}_1 (AC)$$

$$H_0: \beta_1 = 0$$

$$H_4: \beta_1 \neq 0$$

### Empirical Results

#### Program Expense Efficiency (PEE)

As hypothesized, the coefficient of ‘After Crisis’ is positive and statistically significant. This coefficient indicates that there is a significant difference in the Program Expense Efficiency before and after the crisis. Since the AC coefficient is positive, nonprofits increased program expenses, decreased total expenses, or performed both actions in order to have a statistically different PEE in the positive direction. Therefore after the crisis, the PEE of nonprofits on average improved.

$$\widehat{PEE} = .8158 + .0095 (\widehat{AC})$$

**Table 3: Program Expense Efficiency vs. After Crisis Regression**

Source	SS	df	MS			
Model	1.07267856	1	1.07267856	Number of obs =	117078	
Residual	3731.82757117076		.031875257	F( 1,117076) =	33.65	
Total	3732.90024117077		.031884147	Prob > F =	0.0000	
				R-squared =	0.0003	
				Adj R-squared =	0.0003	
				Root MSE =	.17854	

  

PEE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AC	.0094767	.0016336	5.80	0.000	.0062749	.0126786
_cons	.8157595	.0005547	1470.51	0.000	.8146722	.8168468

#### Administrative Expense Efficiency (AEE)

As hypothesized, the coefficient of ‘After Crisis’ is negative and statistically significant. This coefficient shows that there is a significant difference in the Administrative Expense

Efficiency before and after the crisis. Since the AC coefficient is negative, nonprofits decreased administrative expenses in comparison to total expenses, increased total expenses, or performed both actions in order to have a statistically different AEE in the negative direction. Intuitively, nonprofits most likely decreased administrative expenses instead of increasing total expenses in response to the crisis. Therefore from the regression, the AEE of nonprofits on average improved after the crisis.

$$\widehat{AEE} = .1558 - .0073 (\widehat{AC})$$

**Table 4: Administrative Expense Efficiency vs. After Crisis Regression**

Source	SS	df	MS			
Model	.643534873	1	.643534873	Number of obs =	117078	
Residual	3207.9849117076		.027400876	F( 1,117076) =	23.49	
Total	3208.62844117077		.027406138	Prob > F =	0.0000	
				R-squared =	0.0002	
				Adj R-squared =	0.0002	
				Root MSE =	.16553	

  

AEE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AC	-.0073402	.0015146	-4.85	0.000	-.0103089	-.0043716
_cons	.1558161	.0005143	302.94	0.000	.154808	.1568242

### Fundraising Expense Efficiency (FEE)

As hypothesized, the coefficient of ‘After Crisis’ is negative and statistically significant. This coefficient confirms a significant difference in Fundraising Expense Efficiency before and after the crisis. Since the AC coefficient is negative, nonprofits decreased fundraising expenses in comparison to total expenses, increased total expenses, or performed both actions in order to have a statistically different FEE in the negative direction. As stated before, nonprofits most likely decreased fundraising expenses instead of increasing total expenses. Therefore one can see the FEE of nonprofits on average improved after the crisis.

$$\widehat{FEE} = .0284 - .0021 (\widehat{AC})$$

**Table 5: Fundraising Expense Efficiency vs. After Crisis Regression**

Source	SS	df	MS			
Model	.054520231	1	.054520231	Number of obs =	117078	
Residual	565.912452117076		.004833719	F( 1,117076) =	11.28	
				Prob > F	= 0.0008	
				R-squared	= 0.0001	
				Adj R-squared	= 0.0001	
Total	565.966972117077		.004834143	Root MSE	= .06952	

  

FEE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AC	-.0021365	.0006362	-3.36	0.001	-.0033834	-.0008896
_cons	.0284245	.000216	131.58	0.000	.028001	.0288479

### Fundraising Efficiency (FE)

The coefficient of ‘After Crisis’ is negative, however the p-value is greater than 0.05, and is therefore not statistically significant. This value means that Fundraising Efficiency for nonprofits is not statistically different before and after the crisis. This efficiency is the only measure that does not have a significant difference. It is also the only ratio that includes contributions. As discussed before, nonprofits have experienced a decrease in annual contributions from donors and government grants. Nonprofits could have decreased fundraising expenses around the same rate of decreasing contributions in order to maintain the ratio similar before and after the crisis. From this regression, the FE of nonprofits on average did not significantly improve after the crisis, but nonprofits on average did not necessarily become less efficient.

$$\widehat{FE} = .6304 - .1782 (\widehat{AC})$$

**Table 6: Fundraising Efficiency vs. After Crisis Regression**

Source	SS	df	MS			
Model	333.333922	1	333.333922	Number of obs =	103286	
Residual	166780517103284		1614.77593	F( 1,103284) =	0.21	
Total	166780850103285	1614.76352		Prob > F =	0.6496	
				R-squared =	0.0000	
				Adj R-squared =	-0.0000	
				Root MSE =	40.184	

  

FE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AC	-.1782554	.3923368	-0.45	0.650	-.9472305	.5907197
_cons	.6304492	.1328916	4.74	0.000	.3699834	.890915

**Table 7: Summary of Empirical Results**

	PEE	AEE	FEE	FE
Hypothesized Direction	+	-	-	-
Intercept	0.8158 (0.0006)**	0.1558 (0.0005)**	0.0284 (0.0002)**	0.6304 (0.1329)**
After Crisis'	0.0095 (0.0016)**	-0.0073 (0.0015)**	-0.0021 (0.0006)**	-0.1782 (0.3923)*

Standard errors are in parentheses

\*not significant at 5%, \*\*significant at 1%

The results summarized above follow the hypothesized expectations for each efficiency. The ‘After Crisis’ coefficient for Fundraising Efficiency was the only coefficient that was not significant at a 5% significance level. However, the coefficient moved in the same direction as expected.

### Avenues for Future Research

One area of improvement for potential future research would be to collect data from IRS 990 forms from 2011-2013. This additional data would allow for the ‘After Crisis’ data to be more than just one year and potentially demonstrate a more accurate picture of the improvement or deterioration of nonprofit efficiency in response to the crisis. If this data were available, the

independent variable could be coded as ‘Before the Crisis,’ ‘During the Crisis,’ and ‘After the Crisis.’ This would indicate whether operational efficiency improved or declined during the actual crisis or as a result of the completed crisis.

Another area of interest for potential future research is performing growth metrics on panel data. The data used in this study is pooled, meaning a different number of observed nonprofits were included each year, therefore a nonprofit is not necessarily present in each consecutive year. With panel data, variables of the same entity are observed over time. With this kind of data, one could use the Primary Revenue Growth and Program Expenses Growth metrics, like Charity Navigator, to further determine nonprofits’ projected financial health. If organizations can increase primary revenue and program expenses year over year, the programs are sustainable and can outpace inflation or financial downturns. With these metrics, one can project if nonprofits’ revenue and program expenses will continue to grow despite experiencing a financial crisis. This additional approach will show the magnitude to which the efficient changes made during or after the crisis impacted the extent of nonprofits’ influence.

### **Conclusion**

In conclusion, four efficiency measurements are used to evaluate whether nonprofit efficiency improved significantly due to the 2008-2009 Financial Crisis. The four metrics described are Program Expense Efficiency, Advertising Expense Efficiency, Fundraising Expense Efficiency, and Fundraising Efficiency. Evidence of a significant difference in PEE, AEE, and FEE all suggest improvement after the financial crisis at a 1% significance level. However, FE is not statistically significant at a 5%. This result can be explained by using total contributions in the Fundraising Efficiency ratio. As reported, total contributions decreased due to the 2008-2009 Financial Crisis and as seen from the other metrics, fundraising expenses most

likely decreased as well. If these two factors decreased at a similar pace the ratio would not be statistically different than the metric before the crisis.

Overall, this study found sufficient evidence to suggest that nonprofits effectively made changes to their program, advertising, fundraising, and total expenses to operate efficiently given the circumstances of the crisis. Program expenses increased at a greater proportion than total expenses or total expenses decreased at a greater proportion than program expenses. Advertising and fundraising expenses decreased at a greater rate than total expenses or total expenses increased at a greater rate than advertising and fundraising expenses. This study assumed advertising and fundraising expenses were cut at a greater rate because, from previous research, nonprofits had less money to spend in general due to decreased contributions and therefore had fewer total expenses. Possibly the decreased contribution and increased demand for services forced nonprofits to make changes in operations. Since these efficient operations have been exercised in the sampled nonprofits, performance in the long run will be benefited by the changes made in response to the 2008-2009 Financial Crisis. However, why should nonprofits wait until a financial downturn or significant event occurs to operate at maximum efficiency? The results from this study should encourage nonprofits to implement financial performance measures that use information from their financial statements to hold their operations accountable. Each nonprofit should make efficiency benchmark goals that the organization continually evaluates and strives to achieve in order to best serve those in need. With this type of structure in place, nonprofits will already be operating efficiently when financial downturns take place and will be able to thrive instead of just survive during financial downturns.

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