

XXVI CONGRESO NACIONAL DE ACEDE  
JUNIO 2016, VIGO

**“RESOURCE-DEPENDENCE IN NONPROFIT ORGANIZATIONS: IS IT  
HARDER TO FUNDRAISE IF YOU DIVERSIFY YOUR REVENUE  
STRUCTURE?”**

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**Abstract**

This article explores how fundraising efficiency is affected by changes in diversification of revenues in non-profit organizations. It uses random effect regression and Arellano-Bond models to study this phenomenon in a sample of 10358 US non-profits during the 1997-2007 period. We find a negative impact on fundraising efficiency when NPOs alter their locus of dependence and change their pattern of diversification. This effect is affected by organizational size and industry. Previous studies have suggested that income heterogeneity is associated with organizational stability and financial strength. Using a changes (versus levels) model of funding diversity, our work shows that increased diversification leads to a higher operational inefficiency that could be penalised by potential donors.

**Keywords**

Resource dependence, Non-profit organizations, fundraising efficiency, institutional theory.

## RESOURCE-DEPENDENCE IN NONPROFIT ORGANIZATIONS: IS IT HARDER TO FUNDRAISE IF YOU DIVERSIFY YOUR REVENUE STRUCTURE?

### **Abstract**

This article explores how fundraising efficiency is affected by changes in diversification of revenues in non-profit organizations. It uses random effect regression and Arellano-Bond models to study this phenomenon in a sample of 10358 US non-profits during the 1997-2007 period. We find a negative impact on fundraising efficiency when NPOs alter their locus of dependence and change their pattern of diversification. This effect is affected by organizational size and industry. Previous studies have suggested that income heterogeneity is associated with organizational stability and financial strength. Using a changes (versus levels) model of funding diversity, our work shows that increased diversification leads to a higher operational inefficiency that could be penalised by potential donors.

## 1.- INTRODUCTION

The aim of this paper is to study how changes in the diversification of funding sources in Non-profit Organizations (NPOs) affect its ability to attract resources. These organizations depend on different incomes and relationships with external institutions to develop their activities. Management must achieve the mission and keep the organizations financially afloat with a particular revenue structure. This structure is made up of the relative proportions of the different funds that the organization attracts. In the Non-profit sector, business-cycle fluctuations affect revenue streams leading to a state of “super-illiquidity” (Miller, 2003). The resources of US NPOs can usually be divided into three categories: private contributions, government funding and commercial incomes<sup>1</sup>. Nevertheless the traditional view of NPOs perceives fundraising via charitable donations as their primary source of revenue (Carrol and Stater, 2008). Each source of incomes creates a different level of dependency on external agencies. For instance, private donations fluctuate year-to-year. Government grants are being reduced and entail a certain bureaucratic burden (The Urban Institute, 2014). Likewise, commercial resources not obtained from NPOs core activities may compromise their independence and strategic integrity (Hodge and Piccolo, 2005). In sum, the dynamics of funding in NPOs is determined by two variables: reliability and autonomy (Pratt, 2004). Reliability refers to the ability to predict revenues year to year. Autonomy is directly related to the degree of dependence of NPOs on suppliers of funds to develop their mission. In a context of growing uncertainty and competition for donations, a diversified mix of funding sources has increasingly been considered a prudent strategy to reduce unpredictability. The success of NPOs has been attributed to “their ability to diversify funding sources in response to current economic and political environments” (Berman, Brooks and Murphy, 2006).

Diversification means generating revenue from different types and an increased number of sources. An NPO receiving all of its funding from one source exhibits zero diversification. In this case, the organization may be “leaving money on the table” by focusing on one funding source. A diversified revenue structure consists of relatively equal reliance on funds generated from donative income, public grants and other incomes (Tuckman and Chang, 1991). This structure may reduce the variability of individual resources, thereby solving cash flow problems. The idea of diversification is consistent with prescriptions for reducing resource dependence and maintaining organizational autonomy (Froelich, 1999). It is also presented as a viable strategy that allows for better planning and less vulnerability to economic shocks. Despite these advantages, the impact of revenue diversification in NPOs’ income potential is controversial. Economists have done some work to model the financial unpredictability of these organizations (Kingma, 1993; Jegers, 1997), but there is not an explanatory and predictive theory of the resource dependence of NPOs (Fischer, Wilsker and Young, 2011). The ways in which diversification works remain somewhat mysterious (Fischer, Wilsker and Young, 2011). In recent times, a strand of the literature is studying the adverse effects of having a diverse set of funding sources (Frumkin and Keating, 2011; Chikoto and Neely, 2014). Some scholars have admitted that revenue diversification may affect the organizational mission and undermine its legitimacy (Carrol and Stater, 2008). Along with this, reliance on different streams of revenue can affect organizational structures, leading to administrative complexity. This article attempts to extend the analysis of revenue diversification to its operational consequences in terms of fundraising efficiency. There has been an intense academic debate about the use of this measure. However, fundraising is a crucial function of NPOs management and fundraising performance has received a significant attention among social welfare practitioners (Brooks, 2004). We try to gain a better understanding of the management of fundraising in NPOs as research on this issue is limited (Erwin, 2013).

This article uses random effect regression and Arellano-Bond models to study this phenomenon in a sample of 10358 American tax-exempt organizations that filed Internal Revenue Service Form 990 from 1997 to 2007. Our findings show that when managers of nonprofits decide to change their revenue structure increasing diversification they may disrupt the organizational ability to obtain resources.

The paper begins with a review of the conceptual framework of diversification in NPOs. We then present our research hypotheses. Section 3 explains the analytical approach and the econometric model. We then analyze and discuss the results in sections 4 and 5. Lastly, we finish with the conclusions of our research.

## 2.- CONCEPTUAL FRAMEWORK

### 2.1.- The state of the issue: advantages and disadvantages of diversification of revenues in NPOs

Different works have analyzed the effects of revenue diversification on NPOs (See Table 1).

[Insert Table 1 here]

A great number of these studies show that NPOs with multiple revenue sources experience less financial distress and more stability. At the same time, an emerging stream of research is promoting the idea that revenue concentration may have some benefits. Both positions are described below.

#### *a) Generating incomes from different sources: diversification is good*

Revenue diversification has been presented as a way to maximize resource independence of NPOs. Having a wide variety of funding streams seems like a good way to reduce the risk of losing any single source of resources. Financial ratio analysis in NPOs has emphasized the

benefits of a diversified portfolio of funding sources. In this vein, Chabotar (1989) indicates that revenues should be diversified by sources so that the NPO does not become dependent on public grants, private gifts, user fees or any single resource. Tuckman and Chang (1991) identify four accounting ratios that could be used to indicate financial vulnerability. Revenue concentration is one of them. Bielefeld (1992) reports that, for NPOs vulnerable to institutional factors, funding heterogeneity have positive effects on modelling and participation in collective efforts. In a later study Chang and Tuckman (1994) reflect that organizations that rely mainly on donations are subject to greater unpredictability. Moreover, they find that multiple revenue NPOs produce greater surpluses than concentrated-revenue nonprofits. Greenlee and Trussel (2000) note that diversification of funding sources decreases the likelihood of reductions of program expenses and loss in net assets. Hager (2001) suggests that diversified revenues reduce the chance of closing. The study of Carrol and Stater (2008) investigates whether revenue diversification leads to greater stability in the revenue structures of NPOs. Their findings show that a diversified portfolio reduces revenue volatility, equalizing reliance on earned income, investments and contributions. Frumkin and Keating (2011) argue that organizations that diversify their revenue sources benefit through greater surplus margin and liquidity and a lower insolvency risk. In short, a wide range of literature shows that a diversified revenue portfolio is convenient for stabilizing funding sources and increasing chances of survival.

*b) Focusing on a particular segment of the funding market: concentration is good*

Each type of funding source involves NPOs in an exchange relationship that impacts their mission, goals and programs (Ebaugh, Chafetz and Pipes, 2005). Specialization in a dominant single source can be a way of concentrating efforts on quality service and longevity. In the early 90s, Gronbjerg (1990) found that there are costs associated with exploring new funding sources, noting that organizations with an increased dependence on government funding

improve the predictability of their revenue. Froelich (1999, 262) later declared that revenue diversification can be seen as a “double-edged sword” that reduces concentrated resource dependence but erodes legitimacy. According to this author, the higher complexity associated with managing multiple revenue streams and the uncertainty about the effects of diversification could overshadow its benefits. These views raise questions about the allocative efficiency of NPOs as diversification involves that they have to distribute funds between the execution of projects and nonprogrammatic expenses (Rocha, Queiruga and González-Benito, 2014). Recent research has supported the idea that firms that concentrate revenue sources experience some benefits. Foster and Fine (2007) note that within the 144 NPOs that have reached \$50 million in revenue in USA, most of them raise the bulk of their money from a single type of funder. Based on this empirical evidence, they support the idea than relying on more concentrated revenue bases may actually result in lower administrative and fundraising costs. Faulk (2010) points out that revenue concentration and higher ratios of unearned revenues in NPOs performing arts theatre correlate with financial capacity. The work of Frumkin and Keating (2011, 163) supports the existence of a “hidden reward of revenue concentration” that can be perceived in two desirable outcomes: greater efficiency and faster growth. According to these authors, NPOs that spread risk across many types of incomes may be losing opportunities to specialize on a particular segment of the funding market. Conversely NPOs that have highly concentrated forms of revenue experience some benefits in the form of lower administrative and fundraising expenses. Reliance on fewer types of resources may facilitate the development of specialized skills that enable organizations to be more effective raising funds. This in turn leads to faster growth. Chikoto and Neely (2014) test whether revenue concentration is a viable revenue generating strategy that can help bolster a non-profit’s financial capacity. They find that revenue concentration is more effective at increasing total revenues when deployed as a one-time strategy.



## 2.2- Theoretical approaches

Different disciplinary perspectives have studied funding strategies in NPOs. Some of them support the idea of revenue diversification and others refute the advantages of income heterogeneity. Within the first group, it is possible to mention *Financial portfolio theory* (Markowitz, 1952) and *Resource-dependence theory* (Pfeffer and Salancik, 1978). The second group is integrated by *Institutional theory* (Meyer and Rowan, 1977) and the *benefits-based theory of Non-profit finance* (Young, 2007; Wilsker and Young, 2010).

*Financial portfolio theory* (Markowitz, 1952) has made of revenue diversification one of the most prominent and accepted ideas in finance (Yan, Denison and Butler, 2003). This approach was originally developed to guide for-profit investment decisions and tries to model an optimal combination of security holdings in order to minimize financial risk (Kingma, 1993). The basic idea is that investors diversify their investments to find a balance between risks and expected returns. Portfolio theory has been adapted for application to resource acquisition strategies of NPOs highlighting the idea that a mix of revenue sources increases income stability and reduces financial risks (Mayer, Wang, Egginton and Flint, 2014).

Within the organizational area, *Resource-dependence theory* (Pfeffer and Salancik, 1978) is the main theoretical framework to explain NPOs fundraising efforts. The main idea is that acquisition and maintenance of resources is key to organizational survival. A dependency relationship arises then between resource suppliers and users. Tuckman and Chang (1991) point out that dependency on the munificence of funders makes NPOs more vulnerable to revenue instability than organizations that operate under a *quid pro quo* arrangement. In Non-

profit funding markets environmental uncertainty is high. Therefore, they are particularly subject to resource dependency (Carrol and Stater, 2008). The degree of their dependence is determined by the importance and concentration of their resources. There are social and political relations between NPOs and the entities that support them. Meeting the requirements of these providers of incomes turns out to be essential as they cannot “bite the hand that feeds them” (Berman, Brooks and Murphy, 2006). The ability of NPOs to raise their own funds is a measure of independence and autonomous action. However self sufficiency is an ephemeral state (Miller, 2005). NPOs are bound to rely on external sources, which increase the risk that control will be exercised over them. For instance, organizations that attract public money are, in a certain fashion, accepting a degree of government control (Cole, 2012). The diversification of sources of revenue may be a way to manage dependency relationships (Froelich, 1999) as NPOs that are not diversified depend on a primary funding source.

The *institutional theory* (Meyer and Rowan, 1977) focuses on organizations’ concerns for social acceptance and legitimacy. NPOs’ funders have problems judging organizational outcomes directly as they are not the final consumers of non-profit services. For NPOs the funding decision is an opportunity to affirm their identity (Cole, 2012). They will engage in activities designed to enhance their identification with the environment. A diversity of funding sources permits more relationships to be established in the community. However, it will dilute the value of a given relationship requiring extra efforts to manage the relations with the new providers of funds. For these reasons revenue heterogeneity strategies do not necessarily increase NPOs’ likelihood of fulfilling their mission to gain legitimacy.

The *benefits-based theory of Non-profit finance* (Young, 2007, Wilsker and Young, 2010) points out that funding in NPOs is more than the search for an optimal combination of risks and returns. In fact, the revenue mix of these organizations is mainly determined by its

mission or the nature of the services it provides. The propensity to collect incomes from various sources depends on the public/private nature of the goods that the charities produce. Thus, activities that are more public in nature are associated with increasing shares of revenues from government. In this respect, it is possible to say that programs determine sources of revenues and may affect diversification.

The theoretical foundation of this study is mainly based on the institutional approach and the benefits theory of Non-profit finance. We propose that changes that increase diversification in the previous revenue mix can affect the social acceptance of NPOs. Funders favor NPOs that have a clear focus and that are specialized in particular revenue areas. The benefits theory postulates that income streams derive from the nature of the services offered by NPOs. But this relation can work both ways and increases in the diversification pattern of a NPO can lead to the development of new services not aligned with the core mission. This goal displacement can be perceived negatively involving a loss of legitimacy and affecting the ability to raise funds. For these reasons we think that increases in diversification of revenues cause inefficiency in fundraising.

### 2.3.- Hypotheses

As we have mentioned above, the basic assumption of our study is that changes in the revenue strategy that involve greater diversification cause inefficiency in fundraising controlling for size and sector (Hypothesis 1). The rationale of this hypothesis is explained in different sub-hypotheses in the lines below.

When NPOs change their revenue structure and increase diversification they are committed to more goals. This diversity of goals can make them appear diffuse and opportunistic (Gronbjerg, 1991). A greater range of funders involves a greater degree of uncertainty in

terms of continued relations with them (Bielefeld, 1992). Alongside this, the combination of several sources of revenue may undermine NPOs' justification for receiving charitable donations. Managing multiple funding mechanisms increases administrative monitoring and reporting costs (Frumkin and Keating, 2011). It is necessary to invest staff time, effort and resources to develop the ability to attract and solicit different kinds of incomes. In short, revenue diversification is accomplished by incurring costs developing new revenue sources (Chang and Tuckman, 1994). The administrative costs provoked by different funding sources may be perceived as a diversion of money from program expenses (Tinkelman and Mankaney, 2007). Different sources can also increase fundraising costs (Mayer, Wang, Egginton and Flint, 2014). By contrast, organizations with concentrated revenues develop specialized skills that generate a high level of effectiveness at fundraising (Frumkin and Keating, 2011). As a consequence, revenue concentration strategies may generate higher growth in the organization's total income (Chikoto and Neely, 2014). Efficient management has an impact on an organization's ability to attract public support. In line with this idea, we can assume that NPOs that change their revenue structure adding more sources must increase expenses devoted to fundraising activities. This leads , in turn, to a lower efficiency.

On the other hand, size has been considered as one of the factors which can influence an organization's fundraising efficiency and diversification behaviour (Hager and Flack, 2004 and Fischer, Wilsker and Young, 2011). Large NPOs hire specialised personnel such as development officers, fundraisers and grant writers to monitor developments in the funding environment and to manage relations with funders (Bielefeld, 1992). Small NPOs have incentives to find additional sources, but they may lack the staff needed to pursue this goal (Tuckman and Chang, 1991). Larger NPOs achieve economies of scale that affect efficiency. It is assumed that the larger the charitable organization, the better the chance of maintaining the revenue flow avoiding the "roller coaster" effect in incomes (Morreale, 2011). On the

basis of these claims we consider that the relationship between changes in revenue diversification and fundraising efficiency is moderated by organizational size.

Finally, NPOs in different fields of service exhibit substantially different mixes of income. Differences between categories of organizations are substantial. In some industries, greater volatility in their sources of revenue leads to a greater emphasis on diversification (Fischer, Wilsker and Young, 2011). We can say that the funding environments for NPOs differ by the type of work they do. Some activities lend themselves more easily to financing from multiples sources (Chang and Tuckman, 1994). At the same time, changes in the revenue structure do not affect the fundraising efficiency of organizations in the same way in different industries. For these reasons, we have to conclude that efforts to secure and manage resources are shaped by the characteristics of the industry in which the organization operates. The relationship between diversification of revenues and fundraising efficiency varies across different sectors or industries.

Therefore, we can formulate a hypothesis in the following terms:

H1: *“Increases in diversification of revenue in NPOs has a negative impact on fundraising efficiency controlling for size and sector”*,

which can be broken down in the following three sub-hypotheses:

H1a: *NPOs that increase their revenue diversification obtain lower levels of fundraising efficiency*

H1b: *The relationship between revenue diversification and fundraising efficiency in NPOs is moderated by organizational size.*

H1c: *The effect of diversifying revenues on the fundraising efficiency of a non-profit is not equal along all industry sectors.*

### 3.- METHODS

#### Data and variables

The data compiled for this analysis has been provided by the Internal Revenue Service (IRS). Most nonprofit organizations in the United States are required to file an IRS 990 form to obtain tax-exempt status. The sample includes American tax-exempt organizations with internal revenue code section [501(c)] that filed IRS form 990 sampled for the annual Statistics on Income (SOI) studies from 1997 to 2007. The filing population has changed during the period due to the changes in the threshold of gross receipts required to file the form. This leaves us with an unbalanced panel of well established and financially stable NPOs. Despite the overrepresentation of large organizations, the database includes a random sample of approximately 4000 smaller charitable organizations. During the time period, some organizations ceased to exist and other came into existence.

Despite these limitations, IRS Form 990 is the only comprehensive source of financial information for most US nonprofits (Lampkin and Boris, 2002). Several studies have found these data to be a reliable source of financial information for NPOs (Carrol and Stater, 2008). The sample ranges from 1 percent for small-asset classes to 100 percent for large-asset classes. Initial sample size was 251,482 organizations. The extreme values (top and bottom 5 % of all variables) have been excluded to reduce the effects of outliers and errors in Form 990<sup>2</sup>. Cases that report zero fundraising costs or zero contributions are also eliminated.

#### Dependent variable

*Fundraising efficiency.* The use of fundraising efficiency and other financial ratios as measures of NPOs results have been contested (See <http://overheadmyth.com>). Charities have strong incentives to downplay fundraising costs in order to obtain “good scores” from watchdog organizations such as BBB Wise Giving Alliance, Charity Navigator, or Charity

Watch. Yi (2010) has shown that many factors such as size and government grants influence fundraising efficiency. A high fundraising efficiency can be achieved by limiting expenses on fundraising. Some studies have questioned that low fundraising costs are really desirable showing that fundraising spending increases revenue (e. g. Weisbrod and Dominguez, 1988). Despite this criticism, measures of fundraising efficiency are frequently used in research about NPO (Erwin, 2013). Operational efficiency is important as there are ratings of charities designed to lead donors to well-run organizations. Following Carroll and Stater (2008), we believe that NPOs with low costs relative to contributions are able to allocate more resources into mission fulfillment. Fundraising expenses drain resources from service provision and organizations can accomplish more when they apply a larger percentage of total revenue to programmatic expenses. Moreover, donors take into consideration fundraising costs as a factor in making donation decisions (Tinkelman and Mankaney, 2007). Expenses on fundraising represent a proportion of money that is devoted to nonprogrammatic activities.

Authors such as Frumkin and Keating (2011) and Mayer et al (2014) define fundraising efficiency as fundraising costs over total costs. Our measure of fundraising efficiency (EFFIFUN) is calculated as donation revenue divided by fundraising costs. This ratio provides an indication of how much it costs the organization to raise one \$ in contributions.

$$EFFIFUN = \frac{\textit{Contributions, gifts, grants, and similar amounts received}}{\textit{Fundraising Expenses}}$$

In order to reduce problems with causality, we use efficiency in the following period (year) as the dependent variable. It is expressed as follows:

$$EFFIFUN_{i, t+1}$$

where  $i$  is the record  $i$  of the sample and  $t$  is the period (year).

## Independent Variables

### *Increase in diversification*

We use an indicator of revenue concentration to assess NPOs' reliance on different forms of income (Frumkin and Kim, 2001). A common measure is an index similar to the Hirschman-Herfindahl Index (HHI) used in economics to measure market concentration (Tuckman and Chang, 1991; Mayer et al, 2014). The index reflects the dispersion of the revenue sources of an organization: higher values of the index are associated with higher levels of diversification. In order to clarify the interpretation of the results, we use a transformed normalized version of the HHI. As Carrol and Stater (2008), we consider that diversification exists when the revenue structure consists of relatively equal reliance on revenue generated from donations, earned income and investment income. An organization can diversify revenue as well by appealing to a large number of donors of the same kind of contributions, but it is not possible to measure this form of diversification using publicly-available data. The revenue diversification variable is showed below:

$$RD = \frac{3}{2}(1 - DN^2 - EI^2 - INV^2)$$

The RD variable ranges from 0, when all revenues come from one source (maximum revenue concentration), to a value of 1, when each source contributes a third of total revenue (maximum revenue diversification). Donations (DN) are the sum of total public support (line 1d on IRS Form 990) and gross revenue from public special events (line 9a on IRS Form 990). Earned income (EI) is the sum of program service revenue (line 2 on IRS Form 990), membership dues and assessments (line 3 on IRS Form 990), and other revenue (line 11 on IRS Form 990). Investment income (INV) is the sum of gross sales of securities (line 8a on



IRS Form 990), interest (line 4 on IRS Form 990) and other investment income (line 7 on IRS Form 990).

With the aim to get closer to showing causality we use a change (versus level) model of diversification. We look at changes in RD between years “t” and “t+1” (independent variable) and change in efficiency between years “t” and “t+1” (dependent variable).

#### Control variables

As we mentioned earlier, we are interested in testing whether or not changes in revenue diversification are associated with changes in fundraising efficiency. It is important to take into account that the effect of revenue diversification varies between organizations depending on their *previous efficiency levels*. For example, efficiency changes caused by previous changes in the revenue mix may be less evident in organizations whose efficiency levels are higher. In contrast, efficiency changes could be detected more clearly in organizations which initially had lower efficiency levels. For this reason, we use the efficiency level of the organization at the moment  $t$  ( $EFFIFUN_{i,t}$ ) as our first control variable. The second control variable is *organizational size*. As we noted earlier, the relationship between revenue diversification and efficiency is influenced by size. Prior research has used metrics such as total expenses (Carrol and Stater, 2008), total assets (Mayer et al, 2014) or number of personnel (Guo, 2006) to measure organizational size. We measure the variable as total expenses (called EXPENSES in the econometric model). A logarithmic transformation has been performed. Furthermore, we expect varying results in the *different “industries” of NPOs* because performance indices show that the service and fundraising ratios will vary across different sectors of charitable work (Brooks, 2006 and Van Iwaarden et al., 2008). Data are broken down across 26 subsector specific categories organized according to the National Taxonomy of Exempt Entities (NTEE). NTEE system is used by the IRS and NCCS to

classify NPOs (The variable is called INDUSTRY in the econometric model). We have included the same 10 broad categories following the classification of the National Center for Charitable Statistics (See Annex). The industry variable has been dummied for the research. “Arts, Culture, and Humanities” represents the omitted category. The group “Unknown, Unclassified – NTEE” has not been included in the sample.

## Methodology

We test our hypothesis about nonprofit efficiency using two econometric approaches. The first one is the Dynamic Panel Data technique (Arellano-Bond 1-step estimator) for models with lagged endogenous variables and cross-section fixed effects. This approach is used when we have lagged values of the dependent variable as regressors. The second approach is a random effect regression model. Mayer et al. (2014) use a similar model to study revenue volatility and diversification. We estimate the equations through an unbalanced panel data using the random effects model. The Hausman’s specification test indicated that the random effects estimator would be appropriate for the data. Additionally, we include temporal indicator variables (dummy) in order to control for time patterns in the data. The results of the Breusch and Pagan test show the presence of heteroskedasticity, so we use a robust estimation of the standard errors (White diagonal standard errors and covariance).

In order to overcome potential endogeneity, we have used lagged values of the independent variables as regressors in the econometric model. On the basis of the literature review, we expect a one-way causal relationship between our dependent and independent variables. Nevertheless, a reverse causal relationship can be argued for one or more independent variables. For example, it is reasonable to suggest that more efficient organizations can improve their capacity to raise funds, gaining a bigger size. For this reason, we use lagged

values of the non-dichotomous independent variables. Based on the theoretical background, it is plausible and realistic to suggest that changes in revenue diversification (and the other independent variables) can cause changes in fundraising efficiency.

In addition, Consumer Price Index was used to adjust total expenses data (\$) for inflation.

#### Econometric Model

The econometric model used in this work analyzes the impact of revenue diversification on fundraising efficiency. Efficiency is estimated as:

$$EFFIFUN_{it+1} = \beta_0 + \beta_1 EFFIFUN_{it} + \beta_2 \Delta RD_{it} + \beta_3 EXPENSES_{it} + \beta_4 \Delta RD_{it} \cdot EXPENSES_{it} + \beta_5 INDUSTRY_{it} + \alpha_i + \gamma_t + \varepsilon_{it+1}$$

where RD, EXPENSES and INDUSTRY represent, respectively, the revenue diversification, the size, and the industry of the nonprofit organization. These variables were described in the previous section.

#### 4.- RESULTS

Descriptive statistics for the variables in the analysis are shown in Tables 2 and 3. Table 2 shows descriptive statistics of the econometric model. Mean fundraising efficiency is 14.1%. The median is 10.9% and the maximum 53.3%. The mean year-on-year increase in fundraising efficiency is 0.24 %. With respect to diversification the mean is 18.7 % with a median slightly above 19.7% and a maximum of 36%. The mean year-on-year increase is 0.3%. Lastly, mean total expenses are \$50,334,361 with a median of \$7,470,756.

[Insert Table 2 here]

Table 3 shows the percentage of records by different industries. Human services (25.3 %) and education (27 %) concentrate more than 50% of the industry in the sample followed by health (17.8 %) and public and societal benefit (12.2 %).

[Insert Table 3 here]

Table 4 shows the correlations between the non dichotomous independent variables and the dependent variable, and does not reflect a potential problem of multicollinearity.

[Insert Table 4 here]

Table 5 provides the regression results from our analysis using the total sample. The two econometric approaches show that efficiency obtained in the previous year is a good predictor of current efficiency. We can also observe a positive correlation between organizational size and fundraising efficiency. With regard to results related to the revenue diversification variable, the significant negative coefficient of the  $\Delta RD$  variable supports Hypothesis 1a. More heterogeneity in incomes is associated to lower fundraising efficiency. This result involves that fundraising spending generates less in contributions. The significant positive coefficient of the interaction term between  $\Delta RD$  and organizational size (EXPENSES) support Hypothesis 1b. The negative influence of revenue diversification on fundraising efficiency is lower in the larger organizations. By contrast a diverse mix of funding sources leads to more complexity for small organizations. Many times they lack specialized fundraising planning and financial skills to develop different sources of income.

[Insert Table 5 here]

The NPOs with a higher degree of revenue diversification belong to the sectors “Arts, Culture and Humanities”, “Education” and “Environment and Animals”. Conversely, NPOs in the fields “Health”, “Human services” and “Religion related” has a concentrated revenue

structure. The significance of the dummy variables representing the sector<sup>3</sup> suggests that the relationship revenue diversification-fundraising efficiency varies across the different industries of NPOs. In order to check this possibility (Hypothesis 1c) we replicate the analysis running separate regressions by sector (excluding the “Unknown, Unclassified” sector). Results are showed in Table 6. We can appreciate that only the sectors “Education” and “Religion related” show similar results that the whole sample. These service fields seem more predisposed toward a concentration of funding sources. In the “International, Foreign affairs” sector the influence of the revenue diversification is the opposite as expected. The “Health”, “Environment and Animals”, “Mutual/membership benefit” and “Public, Societal benefit” present a negative relationship between diversification and efficiency but the coefficients are non-significant. Lastly in the “Human services”, and “Arts, Culture and Humanities” NPOs the results are not congruent. The sign and significance of relations vary depending on the econometric approach. In short, the results obtained in each sector allow us to conclude that the Hypothesis 1c can be supported, despite the fact that the relationship cannot be tested in some industries. The differentials between sectors reflect the viewpoint that some groups of NPOs are less appropriate for heterogeneous funding. Moreover it is possible to confirm that the influence of the income structure on fundraising efficiency differs across industries. NPOs in different sectors have diverse resource-dependence patterns that may influence their levels of efficiency attracting funds.

[Insert Table 6 here]

The results of our research must be cautiously interpreted. Comparative analysis could reveal considerable differences in how NPOs in different countries design their revenue structure. The relationship between diversification and fundraising efficiency can show wide variations. Different results might be found if another time frame had been chosen. In addition to this, it

is important to consider that the SOI sample is a convenient sample but is not generalizable to the nonprofit sector as a whole. Another limitation comes from the fact that we use a single fundraising efficiency ratio without considering differences in efficiency across diverse fundraising techniques. The effects of diversification on expected revenue also depend on the compositional change of the different funding sources in the portfolio (Mayer et al. 2012).

## 5.- DISCUSSION

This paper has analyzed how year-by-year increments in revenue diversification affect changes in fundraising efficiency. The results highlight the negative effect that increments in revenue diversification can have on NPOs' fundraising performance. A more heterogeneous set of revenue streams may generate lower revenues, higher expenses or both things. Philanthropic contributors may reduce their donations due to the growth of nonprogrammatic expenses. The higher expenses may be produced by the development of new fundraising activities that hinder traditional funding mechanisms. In short, the explanation for the disadvantages of a greater diversification of revenue could be external (donors view the organization differently) or internal (diversification in itself causes more organizational complexity).

The continuity and predictability of a single source could mitigate identity problems in NPOs. As Foster and Fine (2007) point out, there are natural matches between many organizations and particular funding sources. Resource-dependence theory emphasizes the idea that in order to manage dependency relations and preserve autonomy it is necessary to diversify income streams. However it is important to make clear that concentration of funding sources does not imply that the organization is relying on a single payer. In fact, NPOs can reduce their funding risks by securing multiple payers from the same funding sources. For instance, charities can

be specialized in a single source such as public grants, but they can receive their flow of funds from different administrations and local governments. For these reasons, we believe that institutional approaches can shed light on the question of NPOs revenue diversification. Reliance on a certain funding source that fits with the organizational goals increases legitimacy and social acceptance.

As we discussed earlier, the negative relationship between diversification of revenues and the ability to raise funds can also be attributed to internal factors. A diversity of funding sources in an uncertain environment requires complex administrative structures. As Bielefeld (1992) hypothesizes, non-profits whose funding environments are more heterogeneous will have more full-time staff dedicated to carrying out market research and fundraising activities. Relationships with different resource providers require constant feedback. In addition to this, organizations that have ample funding from different sources may appear less needy to potential donors. As previous research notes money donors are likely to reduce contributions to the extent that there are other sources of funding (Callen, 1994). Specialization in one revenue stream can lead to greater efficiency through more established relationships with donors. Obviously this finding does not mean that economizing and lowering operational costs must be the standard strategy for NPOs.

Our study also shows that organizational demographics factors, such as organizational size and sector, affect the link diversification of revenue-fundraising efficiency. The negative relationship between these variables is lower in larger organizations. Size brings economies of scale in fundraising activities. Larger organizations can develop new funding sources without altering the traditional mechanisms of funding. Furthermore, there is no need to share fundraising structures between new and old sources of revenue. However, empirical evidence

proves that a mix of revenue sources is dysfunctional for small NPOs. In these organizations, diversification of incomes is difficult due to lack of human capital, and structural issues.

The effect of revenue diversification on fundraising efficiency is not uniform across different types of NPOs. As we have noted earlier, for NPOs that develop religious and educational activities, increases in revenue diversification have a negative relationship with fundraising performance. The data suggest that value-based organizations have to design a revenue structure congruent with the organizational mission. They must concentrate on funding sources that are a natural match with their activities. This gives some support to the Benefits theory of NPOs finance. We have also observed that NPOs in the “International” category have a higher fundraising efficiency if they diversify their sources of revenues. The benefits of diversification seem clear for this type of organizations. It is important to consider that social sensitivity towards certain international causes is high.

Regarding the effects of diversification for NPOs that belong to the categories “Health”, “Environment and Animals”, “Mutual/Membership Benefit”, “Public, Societal Benefit”, “Human Services”, and “Arts, Culture and Humanities”, we have to say that findings are not significant. Moreover, it is hard to detect a pattern of interpretation, since results differ between the two econometric approaches.

## 6.- CONCLUSIONS

This paper has sought to address an issue of perennial concern to nonprofit management: how should the organization seek to finance its operations to maximize its ability to carry out its mission and deliver effective programs? Should it seek to diversify its revenues? The findings of this work reveal that increases in diversification of incomes can affect NPOs’ fundraising efficiency negatively. Certain sources of revenues may not match with the organizational



mission. Moreover, some organizations may not have the necessary organizational structure or skills to obtain several types of revenues.

The effects of revenue diversification vary if we take into account the size of NPOs. In larger NPOs there are economies of scale that reduce the disadvantages derived from revenue heterogeneity. Large organizations can hire new employees and “purchase” fundraising abilities in the market. The relationship between the revenue structure of the NPO and fundraising efficiency is not uniform across the different sectors. For instance, in value-based organizations (religious and education NPOs), concentration of revenues benefits financial capacity. By contrast, a diversified mix of incomes increases fundraising efficiency for International NPOs.

Our study has clear implications for practitioners and scholars. Revenue diversification is more complicated than it may appear. Overly generalized prescriptions are inadequate to appropriately guide organizations. NPOs administrators must understand the contingencies derived from having different funding sources. When they decide to change their revenue structure they should take into account the impact of this decision on the organizational ability to obtain resources. It is crucial to weigh the benefits of diversification against the costs of bureaucratization. Managers of NPOs cannot afford to ignore the question of cost efficiency. Revenue heterogeneity may entail more nonprogrammatic spending (administrative and fundraising expenses). In our sample strategies for securing efficiency in raising funds seem to favour organizations with well defined identities that concentrate their efforts in certain streams of revenues.

At the same time, the community of scholars should be aware of emerging research that questions the “mythology of revenue diversification” (Chikoto and Neely, 2014). The

portfolio and Resource dependence theories have showed that funding heterogeneity may avoid financial distress. However, institutional approaches allow for an evolution from strictly rational explanations to a broader view of the macro-cultural environment of the organization. From this perspective, some NPOs could follow “breadth” strategies of revenue (diversifying their funding sources and fundraising mechanisms) while others develop “depth” strategies of revenue (relying on a single source and specializing their fundraising mechanisms).

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Table 1: Studies about the effects of revenue diversification.

		SAMPLE	RESEARCH APPROACH	FINDINGS
STUDIES THAT EMPHASIZE THE BENEFITS OF DIVERSIFICATION	Chabotar (1989)	Private Research University with 17000 students	Case Study	Revenues must be diversified to increase the viability of NPOs
	Tuckman and Chang (1991)	4730 NPOs that filed the 990 tax return with the IRS in the 1983 tax year	Application of four criteria of financial vulnerability (equity balance, revenue concentration, administrative costs and operative margins)	NPOs that report to the IRS to have recourse more than one can offset the effects of an economic downturn
	Bielefeld (1992)	229 non-religious public charities in the Minneapolis-St Paul Metropolitan Area	Interviews conducted between 1980 and 1982 to obtain information about goal, expenditures, revenue sources, etc	For NPOs vulnerable to institutional factors, funding heterogeneity have positive effects in participation in collective efforts
	Chang and Tuckman (1994)	113525 NPOs that filed the 990 tax return with the IRS in 1986 tax year	OLS regression estimations of diversification index	NPOs with multiple revenue sources are more likely to have a strong financial position than those with concentrated revenue sources
	Greenlee and Trussel (2000)	5918 Tax exempt organizations under Internal Revenue Code 501 (c) 3	Logistic regression model. The dependent variable is financial vulnerability. The independent variables are the four financial indicators that Tuckman and Chang (1991) described	Financially vulnerable charities have higher revenue concentration
	Hager (2001)	7266 Art NPOs that filed an annual Form 990 tax return with the Internal Revenue Service for the 1990, 1991, or 1992 tax year.	The analysis estimates logistic regression models to calculate the influence of Tuckman-Chang measures of financial vulnerability on the log-odds of organizational closure	High revenue concentration was found to be useful in predicting the death of visual arts organizations, theaters, music organizations, and generic performing arts organizations.
	Carroll and Stater (2008)	Unbalanced panel of 294543 NPOs that filed a 990 form in any year during the 1991-2003 period	Regression analysis that measures the impact of diversification on revenue volatility	NPOs that actively diversify its revenue structure experience a reduction in revenue volatility over the time
	Frumkim and Keating (2011)	8828 NPOs drawn from the Statistics on Income Office of the Internal Revenue Service in a 12-year period	T-tests and Wilcoxon sign-rank tests on the differences between the means and medians between six portfolios of similar NPOs	Firms that diversify their revenue sources benefit through greater surplus margins and liquidity and a lower insolvency risk
STUDIES THAT EMPHASIZE COSTS ASSOCIATED WITH DIVERSIFICATION	Gronbjerg (1991)	Data from in-depth case studies of six medium-sized social service organizations	Case Study	Organizational growth and survival can be associated to a certain kind of revenues such as government funding
	Foster and Fine (2007)	110 NPOs that had reached \$50 million in annual revenue (2002-2004)	Analysis of financial data and 21 in-depth interviews	NPOs that succeed in building a large scale funding model: a) They develop funding in one concentrated source, b) They find a funding source that is a natural match to their mission, c) They build a professional structure around this funding model
	Faulk (2010)	3642 US Nonprofit theatres that filed IRS Form 990 from 1998-2007	Regression analysis. The dependent variable is a three-year rolling average of net income. Independent variables include measures on financial health and revenue streams	Revenue concentration correlates with greater financial capacity
	Fumkim and Keating (2011)	8828 NPOs drawn from the Statistics on Income Office of the Internal Revenue Service in a 12-year period	T-tests and Wilcoxon sign-rank tests on the differences between the means and medians between six portfolios of similar NPOs	NPOs that depend heavily on a single source of revenue are able to operate at higher levels of operative efficiency reducing administrative and fundraising expenses
	Chikoto and Neely (2014)	Digitized data from the Nacional Center for Charitable Statistics (1998-2003). N ranging from 50,000 to 108000.	Ordinary Least Squares Analysis. The dependent variable is financial capacity growth. Independent variables include revenue concentration and overhead costs	Revenue concentration is positively associated with a growth in NPOs' financial capacity, particularly when capacity is measured as total revenues



**Table 2: Descriptive statistics of the variables**

N: 33986	Mean	Median	Standard deviation	Min	Max
EFFIFUN	0.140924792	0.10896213	0.118595513	2.28E-06	0.5339855
RD	0.187508834	0.197764085	0.113118115	0	0.36099357
$\Delta$ RDit	0.003603186	0.000381051	0.080461043	-0.35012344	0.35000635
Total expenses	50344360.99	7470755.785	188217556.9	0	4869610363

**Table 3: Percentage of records by different industries**

	Number of records	Percent of total
Arts, Culture and Humanities	3,316	9.8%
Education	9,159	27%
Environment and analysis	1,325	3.9%
Health	6,052	17.8%
Human services	8,584	25.3%
International, Foreign Affaire	677	2%
Public, Societal Bénédict	4,136	12.2%
Religion related	698	2.1%
Mutual/Membership Bénédict	32	0,1%
Unknown, unclassified	5	0%
Total	33,984	100%

**Table 4: Correlations**

	$\Delta$ RDit	EXPENSES
$\Delta$ RDit	1	-0.011091
EXPENSES	-0.011091	1

N: 33986

Table 5: REGRESSION MODELS, TOTAL SAMPLE

Variable	TOTAL SAMPLE	
	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=22308	Model 2 Panel EGLS (Cross-section random effects) N=26815
C		-0.002985 (0.006011)
EFFIFUN <sub>it</sub>	0.008256** (0.003548)	0.432839*** (0.004333)
$\Delta$ RD <sub>it</sub>	-0.03363*** (0.009899)	-0.108667** (0.051710)
EXPENSES <sub>it</sub>	0.005616** (0.002396)	0.006062*** (0.000377)
$\Delta$ RD <sub>it</sub> · EXPENSES <sub>it</sub>	0.002332*** (0.000678)	0.008508** (0.003352)
INDUSTRY <sub>it</sub>	Significant**	Significant***
R-squared		0.267363
Adjusted R-squared		0.267035
S.E. of regression	0.103434	0.085062
J-Statistic	49.34085	
*** p<0.01, ** p<0.05, * p<0.1		



Table 6: REGRESSION MODELS, BY SECTOR

Variable	EDUCATION		HEALTH		HUMAN SERVICES	
	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=6241	Model 2 Panel EGLS (Cross-section random effects) N=7397	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=3466	Model 2 Panel EGLS (Cross-section random effects) N=4178	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=5788	Model 2 Panel EGLS (Cross-section random effects) N=7019
C		-0.073366*** (0.010400)		-0.010364 (0.018437)		-0.000126 (0.010485)
EFFIFUN <sub>it</sub>	0.047387*** (0.008282)	0.614807*** (0.008024)	0.050174*** (0.010713)	0.217075*** (0.009298)	-0.002121*** (0.00286)	0.568742*** (0.008617)
$\Delta$ RD <sub>it</sub>	-0.061124*** (0.020168)	-0.600721*** (0.114450)	-0.189194 (0.134846)	-0.154817 (0.137418)	-0.051022 (0.069903)	0.099718 (0.114683)
EXPENSES <sub>it</sub>	0.013990*** (0.001695)	0.008542*** (0.000655)	0.002468 (0.004671)	0.008547*** (0.001150)	0.003917 (0.005870)	0.004467*** (0.000690)
$\Delta$ RD <sub>it</sub> · EXPENSES <sub>it</sub>	0.004743*** (0.000678)	0.041158*** (0.007182)	0.012674 (0.008731)	0.010187 (0.008892)	0.003487 (0.004735)	-0.003018 (0.007660)
R-squared		0.430010		0.113930		0.340360
Adjusted R-squared		0.429701		0.113081		0.339983
S.E. of regression	0.107166	0.091918	0.116176	0.088659	0.102373	0.089823
J-Statistic	28.15029		22.71971		54.48457	
*** p<0.01, ** p<0.05, * p<0.1						

Variable	INTERNATIONAL, FOREIGN AFFAIRS		ENVIRONMENT AND ANIMALS		MUTUAL/MEMBERSHIP BENEFIT	
	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=421	Model 2 Panel EGLS (Cross-section random effects) N=504	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=875	Model 2 Panel EGLS (Cross-section random effects) N=1057	Model 1 Panel Generalized Method of Moments (Arellano-Bond)	Model 2 Panel EGLS (Cross-section random effects) N=20
C		0.089239*** (0.025517)		-0.045263** (0.020182)	CONVERGENCY NOT ACHIEVED	0.356181 (0.246481)
EFFIFUN <sub>it</sub>	0.089163* (0.051532)	0.712840*** (0.027561)	0.249679*** (0.042525)	0.513885*** (0.022062)		0.621296** (0.230643)
ΔRD <sub>it</sub>	0.155375 (0.214093)	0.541793* (0.297914)	-0.259310 (0.163564)	-0.185772 (0.181753)		-0.802946 (0.826635)
EXPENSES <sub>it</sub>	0.00796 (0.005558)	-0.003469** (0.001529)	0.011916* (0.006939)	0.007070*** (0.001364)		-0.019717 (0.016604)
ΔRD <sub>it</sub> · EXPENSES <sub>it</sub>	-0.008514 (0.013499)	-0.028814 (0.018866)	0.020776* (0.011420)	0.015814 (0.012938)		0.053208 (0.051685)
R-squared		0.497734		0.310247		-
Adjusted R-squared		0.493708		0.307624	-	0.280777
S.E. of regression	0.083825	0.073658	0.100338	0.077898	-	0.010495
J-Statistic	38.21627		32.80762		-	
*** p<0.01, ** p<0.05, * p<0.1						

	PUBLIC, SOCIETAL BENEFIT		RELIGION RELATED		ARTS, CULTURE AND HUMANITIES	
Variable	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=2934	Model 2 Panel EGLS (Cross-section random effects) N=3390	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=449	Model 2 Panel EGLS (Cross-section random effects) N=557	Model 1 Panel Generalized Method of Moments (Arellano-Bond) N=2213	Model 2 Panel EGLS (Cross-section random effects) N=2689
C		0.097621*** (0.013373)		0.000889 (0.021180)		0.050295*** (0.016329)
EFFIFUN <sub>it</sub>	0.014754** (0.005995)	0.361414*** (0.011419)	0.034466** (0.013914)	0.718841*** (0.027664)	0.002964*** (0.000335)	0.508267*** (0.015014)
$\Delta RD_{it}$	-0.074912 (0.085160)	-0.061109 (0.091176)	-0.033328 (0.121762)	-0.442355** (0.215423)	0.042424 (0.147054)	-0.086849 (0.170940)
EXPENSES <sub>it</sub>	-0.001272 (0.003541)	-0.002573** (0.000846)	-0.024918*** (0.008239)	0.0011853 (0.001440)	0.004470 (0.006594)	0.001818* (0.001070)
$\Delta RD_{it} \cdot EXPENSES_{it}$	0.004711 (0.005261)	0.003810 (0.005783)	0.000177 (0.008267)	0.027784* (0.014812)	-0.003790 (0.010083)	0.004694 (0.011394)
R-squared		0.174168		0.498077		0.253300
Adjusted R-squared		0.173192		0.494439		0.252187
S.E. of regression	0.073903	0.055125	0.057732	0.053336	0.103903	0.088590
J-Statistic	32.36248		35.90233		36.10796	
*** p<0.01, ** p<0.05, * p<0.1						

## ANNEX

Arts, Culture, and Humanities - NTEE category A

Education - NTEE category B

Environment and Animals - NTEE categories C, D

Health - NTEE categories E, F, G, H

Human Services - NTEE categories I, J, K, L, M, N, O, P

International, Foreign Affairs - NTEE categories Q

Public, Societal Benefit - NTEE categories R, S, T, U, V, W

Religion Related - NTEE categories X

Mutual/Membership Benefit - NTEE categories Y

Unknown, Unclassified - NTEE categories Z

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<sup>1</sup> This categorization is only a form of grouping of a broad range of different sources. Revenue streams can be expanded in different categories such as government funding, service fees, corporate giving, investment incomes, in-kind donations, etc. Moreover, It is important to take into account that there is a great cross-national variation in the revenue structure of NPOs (Salamon and Anheier, 1998)

<sup>2</sup> There is a notable concern about the accuracy of the information detailed on the IRS form. Some categories are vague and there are data entry errors (Gordon, Greenlee and Nitterhouse, 1999). Moreover, organizations tend to misreport fundraising. However, this disclosure of information represents an organizations' most visible statement of its financial condition and management priorities (Frumkin and Kim, 2001).

<sup>3</sup> Detailed results of the individual coefficients of each sector are available upon request.

