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Does Revenue Diversification Predict Financial Vulnerability Among Non-governmental Organizations in sub-Saharan Africa?

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Abstract Non-governmental organizations (NGOs) in sub-Saharan Africa (SSA) experience financial challenges that hinder efforts to promote social change and development. Revenue diversification is one adaptive response to these challenges, yet there is a lack of evidence concerning the relationship between revenue diversification and financial vulnerability among NGOs in SSA. Using data from an online survey of NGOs ($N = 170$), we hypothesized that a greater number of revenue sources is associated with lower probability of financial vulnerability, while a greater level of dependence on international funding is associated with higher probability of financial vulnerability. Results from probit regression models controlling for organizational characteristics indicated partial support for hypotheses. Having four or more types of revenue was associated with 87% lower probability of financial vulnerability compared to having one type of revenue ($p < 0.001$). Also, NGOs with up to half of their budgets covered by international sources had 17% lower probability of financial vulnerability compared to NGOs with no international

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funding ($p < 0.05$). Implications for future research to further explore these relationships are discussed.

Résumé Les organismes non gouvernementaux (ONG) de l'Afrique du Sud du Sahara (ASS) éprouvent des difficultés financières qui entravent les initiatives favorisant les changements et le développement sociaux. La diversification des revenus est une des réponses adaptées à ces difficultés, mais trop peu de données sur la relation entre cette dernière et la vulnérabilité des ONG de l'ASS sont actuellement à disposition. À l'aide de données provenant d'un sondage auquel des ONG ont répondu en ligne ($N = 170$), nous avons supposé qu'un plus grand nombre de sources de revenus correspondrait à une moins grande vulnérabilité financière potentielle, tandis qu'une dépendance plus marquée envers les investissements mondiaux correspondrait à une vulnérabilité potentielle plus élevée. Les résultats des modèles de régression des probits de contrôle des caractéristiques organisationnelles ont partiellement appuyé ces hypothèses. Le fait de posséder 4 types de revenus ou plus était associé à une vulnérabilité financière de 87% moins probable comparativement à la possession d'un seul type de revenus ($p < 0.001$). Qui plus est, les ONG dont plus de la moitié du budget était assurée par des sources mondiales avaient une vulnérabilité financière de 17% moins probable que ceux démunis d'investissements mondiaux ($p < 0.05$). Nous discutons des implications futures de l'exploration plus approfondie desdites relations.

Zusammenfassung Nichtregierungsorganisationen (NROs) in Subsahara-Afrika begegnen finanziellen Herausforderungen, die die Bemühungen zur Förderung des sozialen Wandels und der Entwicklung erschweren. Die Einkommensdiversifizierung ist eine adaptive Reaktion auf diese Herausforderungen; doch fehlt es an Beweisen hinsichtlich der Beziehung zwischen der Einkommendiversifizierung und der finanziellen Anfälligkeit der NROs in Subsahara-Afrika. Unter Verwendung von Daten aus einer Online-Befragung von NROs ($N = 170$) stellten wir die Hypothese auf, dass eine größere Anzahl von Einnahmequellen mit einer geringeren Wahrscheinlichkeit für eine finanzielle Anfälligkeit verbunden ist, während eine größere Abhängigkeit von internationalenen Finanzierungen mit einer erhöhten Wahrscheinlichkeit für eine finanzielle Anfälligkeit verbunden ist. Ergebnisse aus Probit-Regressionsmodellen, die die organisatorischen Kriterien kontrollierten, wiesen auf eine teilweise Unterstützung der Hypothesen hin. Das Vorhandensein von 4 oder mehr Einkommensarten zeigte eine um 87% verringerte Wahrscheinlichkeit für eine finanzielle Anfälligkeit im Vergleich zu einer einzigen Einkommensart ($p < 0.001$). Des Weiteren zeigte sich, dass die Wahrscheinlichkeit für eine finanzielle Anfälligkeit für NROs, deren Budget bis zur Hälfte von internationalen Quellen finanziert wurde, 17% geringer war im Vergleich zu NROs, die keine internationalen Finanzierungen erhielten ($p < 0.05$). Die Implikationen für zusätzliche Studien zur weiteren Erforschung dieser Beziehungen werden diskutiert.

Resumen Las organizaciones no gubernamentales (NGO, por sus siglas en inglés) en el África Subsahariana (SSA, por sus siglas en inglés) experimentan retos financieros que dificultan sus esfuerzos para promover el cambio social y el

desarrollo. La diversificación de ingresos es una respuesta adaptativa a dichos retos, sin embargo existe una falta de evidencia con respecto a la relación entre la diversificación de ingresos y la vulnerabilidad financiera entre las NGO en SSA. Utilizando datos de una encuesta online de NGO ($N = 170$), planteamos la hipótesis de que un mayor número de fuentes de ingresos está asociado a una menor probabilidad de vulnerabilidad financiera, mientras que un mayor nivel de dependencia de la financiación internacional está asociado a una mayor probabilidad de vulnerabilidad financiera. Los resultados de modelos de regresión probit que controlan las características organizativas indicaron un apoyo parcial a estas hipótesis. El tener cuatro o más tipos de ingresos estaba asociado a un 87% de menor probabilidad de vulnerabilidad financiera en comparación a tener un tipo de ingresos ($p < 0.001$). Asimismo, las NGO que tenían cubierta hasta la mitad de sus presupuestos con fuentes internacionales, tenían un 17% de menor probabilidad de vulnerabilidad financiera en comparación a las NGO sin financiación internacional ($p < 0.05$). Se tratan las implicaciones de futuras investigaciones para seguir explorando estas relaciones.

Keywords Nonprofit financial health · Financial vulnerability · Revenue diversification · International funding · NGO

Introduction

Non-governmental organizations (NGOs) play prominent roles in promoting social development in the Global South[1] (Brass 2012; Burger and Owens 2009; Eade 2007; Lewis and Kanji 2009). Through a wide array of fields such as emergency relief and environmental protection (Lewis and Kanji 2009), NGOs meet needs states are unable to fulfill (Banks and Hulme 2012). Though the proportion of official development assistance reaching NGOs has risen in recent years (Aldashev and Navarra 2014), Watkins, Swidler, and Hannan (2012) characterize NGOs as operating with "ambitious goals, uncertain technologies, and unpredictable environments" (p. 288).

Dependence on international sources of funding among NGOs in the Global South (AbouAssi 2013; Alymkulova and Seipulnik 2005; Chaplowe and Engo-Tjega 2007; Khieng and Dahles 2015) creates uncertainty (Hudock 1995; Watkins et al. 2012) and threatens organizational autonomy (Banks and Hulme 2012; Elbers and Schulpen 2013; Hudock 1995; Wallace, Bornstein, and Chapman 2006). These resource dependencies (Gronbjerg 1993; Pfeffer and Salancik 1978; Hillman, Withers, and Collins 2009) may exert additional, undesirable effects such as goal displacement and funding disruptions (Froelich 1999).

In response to these challenges, NGOs might implement adaptive responses. Some NGOs may focus more on revenue expansion by diversifying revenue, generating earned income, and carefully matching revenue types and sources to organizational mission and capacity (Fowler 2000; Gronbjerg 1993; Mitchell 2014).

[1] NGO operating in countries of the Global South is a broad term to refer to countries in Africa, Latin America, and lower-resource regions of Asia and the Middle East, whereas the Global North is a broad term to refer to the USA, Canada, Western Europe, Australia, New Zealand, and higher-resource regions of Asia.

Conversely, NGOs' may focus more on structural changes by modifying mission and activities to align with funding opportunities (AbouAssi 2013; Elbers and Arts 2011; Mitchell 2014).

Revenue diversification is a well-studied adaptive response of NGOs concerning risk of financial vulnerability. However, to the authors' best knowledge, only one, unpublished study (Silva and Burger 2015) has been conducted concerning the relationship between revenue diversification and financial health among NGOs in sub-Saharan Africa (SSA). This association may be different among NGOs in SSA where a lack of sufficient resources is particularly acute and hinders development and social change efforts (Barr, Fafchamps, and Owens 2005; Bingen and Mpyisi 2001; Harley, Rule, and John 2004; Odindo 2009).

The purpose of this study is to examine the relationship between revenue diversification and financial vulnerability among a sample of NGOs in Kenya and Nigeria ($n = 170$) who responded to an online survey. We offer a unique contribution by addressing the gap in the literature concerning revenue diversification among NGOs in SSA, where domestic philanthropic markets, government funding, and dependence on international revenue sources differ from other regions. After controlling for organizational characteristics like tenure, participant non-response, and country-level fixed effects, we find that the number of different types of revenue, but not proportion of budget covered by international sources, is associated with financial vulnerability. Our results are suggestive due to use of a small, non-probability sample, and dependence on self-reported measures of financial vulnerability.

The remainder of this article is organized as follows: In the next section, we review findings from prior studies concerning the financial vulnerability and funding experiences of NGOs in SSA. In subsequent sections, we describe our survey-based methods, present results from univariate, bivariate, and multivariate analyses, and discuss implications of our findings with respect to resource development strategies and funding policies.

Financial Vulnerability of NGOs in sub-Saharan Africa

Financial vulnerability is defined as an organization cutting back services in response to the loss of revenue (Tuckman and Chang 1991). Similarly, Tevel, Katz, and Brock (2015) define financial vulnerability as an "organization's susceptibility to financial problems" that interfere with fulfilling their mission (p. 2502). Many NGOs in SSA reflect these definitions of financial vulnerability as they struggle to meet community needs with limited resources. Nearly half (44%) of NGOs in South Africa characterized their financial situation as on the verge of closing (National Development Agency [NDA] 2013). Less than half (43%) of human rights NGOs in southern Africa had paid staff members, and only 67% had any source of funding (Harley et al. 2004). Odindo (2009) found nearly all (94%) NGOs in Kenya (N = 210) said a lack of funding hampered their efforts to combat malaria.

Most of the revenue NGOs in the Global South receive is from international sources[2] (Chaplowe and Engo-Tjega 2007; Wallace et al. 2006). For example, Barr et al. (2005) found that most (71%) of Ugandan NGOs' revenue came from grants from bilateral agencies, such as USAID. Revenue from other sources such as domestic government, membership, fundraising, and earned income comprised much smaller proportions. Similarly, African NGOs depend more on donor revenue compared to Western European NGOs, which depend more on income-generating revenue (Aschari-Lincoln and Jäger 2015). Suárez and Gugerty (2016) found NGOs in Cambodia that had leaders and staff with more formal education and engaged in staff training were more likely to receive bilateral funding than NGOs that were members of networks and whose leaders and staff were Cambodian. Thus, though Global South NGOs are heavily dependent on international funding, this funding is unevenly allocated to NGOs.

Dependence on international sources of funding introduces a host of adverse resource dependence effects (Froelich 1999; Gronbjerg 1991, 1993), including short grant periods, revenue volatility and uncertainty, use restrictions and goal displacement, and difficult accountability and reporting requirements (Elbers and Arts 2011; NDA 2013; Wallace et al. 2006; Watkins et al. 2012). For example, Wallace et al. (2006) found that NGOs in Uganda and South Africa had time-consuming and culturally incompatible reporting requirements with multiple funders. Jacobs (2011) found that the average duration of grants to NGOs was less than two years and that grants were inflexible and failed to cover overhead expenses. Similarly, International Peace Academy (IPA) (2002) found fewer than 5% of NGOs in SSA secured funding to cover overhead expenses.

The evidence reviewed above indicates that financial vulnerability is common among NGOs and that adverse conditions of international funding may not reduce and could even exacerbate financial vulnerability. For example, when an NGO receives a grant that does not cover overhead expenses such as internet access, transportation, and administrative salaries, the NGO needs to find other sources of revenue to pay for these expenses. Furthermore, extensive monitoring and evaluation and financial reporting requirements may place further strain on capacity and resources. With short grant periods from international funders, NGOs in SSA may face difficulty replacing grant funds with domestic sources such as individual donations. Consequently, NGOs may have no other choice but to reduce services to the communities they serve and/or the number of people served and may lack core resources needed to recruit and retain well-qualified staff (Elbers and Arts 2011).

NGO Responses to Adverse Funding Conditions and Financial Vulnerability

Researchers have conceptualized how NGOs respond in different ways to adverse funding conditions. Based on case studies of four environmental NGOs in Lebanon, AbouAssi (2013) describes NGOs' responses to changes in international funder

[2] These sources include bilateral (e.g., USAID and UK DFID) and multilateral (e.g., UNDP) aid agencies, foreign private foundations (e.g., Gates Foundation), and International NGOs (e.g., Oxfam), which provide grants or sub-awards to domestic NGOs. Collectively, these are sources of funding which originate from entities outside of the country in which the NGO operates.

objectives. NGOs can discontinue the funding relationship, attempt to influence the funder, or adjust activities to fit the funder's new priorities. Elbers and Arts (2011) developed a similar typology in relation to the international funding experiences of NGOs in India and Ghana. NGOs can limit their exposure to adverse funding conditions by selectively pursuing funding opportunities, attempt to influence funders to make donor conditions more favorable, and reduce the negative impact of adverse funding conditions. NGOs might even resist complying with funder conditions by limiting what information is shared with the funder or submitting incorrect information.

Mitchell (2014) identifies three broad categories of strategic responses by NGOs to resource dependence: adaptation, avoidance, and shaping. Adaptation relates to modifying efforts in response to funding opportunities, such as adjusting goals to pursue a grant opportunity. Avoidance refers to efforts to evade resource dependence, the most common of which is revenue diversification. Shaping relates to efforts by organizations to influence funders, such as negotiating funding terms.

The conceptual frameworks reviewed above suggest that NGOs have agency in navigating resource development opportunities. NGOs can advocate for more favorable funding conditions, such as greater overhead funding or longer grant periods, or they can pursue other sources of funding to mitigate risks associated with resource dependence.

Revenue Diversification

Among the several tactics NGOs considered, Mitchell (2014) found that revenue diversification was the most common. Diversifying revenue may help NGOs and nonprofit organizations (NPOs) avoid the volatility and uncertainty of dependence on a limited number of funding sources (Frumkin and Keating 2011; Keating et al. 2005; Mitchell 2014). Revenue diversification is conceptualized and measured in two ways: (1) as the number of different types or distinct sources of revenue and (2) the proportionate share of total revenue of a different revenue types.

Evidence concerning the relationship between revenue diversification and financial vulnerability is mixed. Revenue diversification has been found to be associated with greater financial stability among NPOs in the USA (Carroll and Stater 2009; Trussel 2002), yet other studies of US NPOs found that revenue diversification was not associated with grant amounts (Ashley and Faulk 2010), revenue growth (Chikoto and Neely 2014), or financial stability (Keating et al. 2005). Also, among a large sample of US NPOs, revenue diversification was associated with decreased fund-raising efficiency (Sacristán López de los Mozos, Rodríguez Duarte, and Rodríguez Ruiz 2016). Revenue diversification among NGOs in Lebanon was associated with efforts to meet complex and varying accountability and performance standards of multiple funders (AbouAssi 2013). Rose (2011) found that revenue diversification strengthened the negotiating positions of South Asian NGOs' in forming partnerships with government.

Gronbjerg (1993) argues that whether revenue diversification reduces financial vulnerability depends on the particular mix of revenue. For example, adding

foundation grants to its revenue mix may harm an NGO if grants impose new managerial demands, and restrictions and timetables at odds with organizational and community needs (Gronbjerg 1991). Mayer, Wang, Egginton, and Flint (2014) found that the relationship between diversification and revenue volatility depended on different compositions of revenue portfolios. US NPOs that depended mostly on private sources of funding (i.e., individual contributions and foundation grants) were less financially vulnerable compared to NPOs that depended mostly on government funding or commercial revenue (Hodge and Piccolo 2005). Similarly, Ecer, Magro, and Sarpça (2016) found that US NPOs whose budgets were comprised mostly of earned revenue had greater administrative efficiency but lesser fund-raising efficiency compared to NPOs whose budgets were comprised mostly of grants and donations.

In SSA, the relationship between revenue diversification and financial vulnerability is not well studied. We were able to identify only one unpublished and related study. Silva and Burger (2015) studied 295 Ugandan NGOs at two time points (2002 and 2006–2007). The authors found that a lower diversity of revenue types was a consistent predictor of financial vulnerability as measured by a 25% or greater drop in revenue, controlling for NGO size.

The paucity of evidence concerning revenue diversification and financial vulnerability among NGOs in SSA may in part be due to the lack of publicly available NGO financial data. Most studies on NGO revenue diversification have been conducted among NPOs in the USA using Internal Revenue Service (IRS) Form 990 data. These data allow researchers to measure both types of revenue diversification—number of different sources, and proportions of total revenue—with respect to a range of financial vulnerability indicators. This study aims to address this gap in the literature, despite these data limitations.

Study Purpose and Hypotheses

The purpose of this study is to examine the association of revenue diversification and concentration with financial vulnerability among domestic NGOs in Kenya and Nigeria. We propose the following hypotheses:

H_1 A greater diversity of revenue sources is associated with lower probability of financial vulnerability among NGOs.

H_2 A greater dependence on international funding sources is associated with higher probability of financial vulnerability among NGOs.

These hypotheses are informed by Gronbjerg's (1991, 1993) work, which suggests that different aspects of revenue structure may relate to financial vulnerability. We also draw on prior research concerning adverse international funding conditions for NGOs (AbouAssi 2013; Aldashev and Navarra 2014; Alymkulova and Seipulnik 2005; Chaplowe and Engo-Tjega 2007; Khieng and Dahles 2015). These conditions include time-limited, instable, and unpredictable funding, changing funder objectives and goal displacement, adherence to

funders' complex accountability and performance standards, and threats to NGO autonomy.

Testing these hypotheses will help fill a gap in the literature concerning the relationship between revenue diversification and financial health of NGOs in SSA. Evidence from this study can help inform NGOs' strategic thinking about revenue generation and the policies of public and private funders concerned about NGOs' capacity to sustain responses to community needs.

Methods

Sample and Design

The University of North Carolina at Chapel Hill (UNC-CH) Institutional Review Board provided an exemption from further review to conduct an online survey of NGOs in SSA. An introductory email explaining the study's purpose and a link to the survey on the UNC-CH Qualtrics Web site was sent to NGO representatives in Ghana, Kenya, and Nigeria using convenience sampling methods. These countries were targeted for the survey due to similarities concerning lower middle-income country status and robust economic growth (World Bank 2015), NGO sector growth (Brass 2012; Smith 2010), and Human Development Index rankings (United Nations Development Programme, n.d.), despite representing different regions of SSA.

Email addresses were collected from online directories of NGOs, including a listing of government-registered NGOs in Kenya. In addition, one of the study authors distributed a recruitment email through the Nigerian Network of NGOs. Nearly a quarter (24%; $n = 1256$) of all obtained email addresses ($n = 5244$) were undeliverable.

A total of 315 survey responses averaging 35 min to complete were received from October 2013 through February 2014 from 3988 recruitment email messages delivered, for a response rate of 8%. Responses were excluded if surveys had missing responses on almost all survey items ($n = 29$) or if respondents only answered background questions at the beginning of the survey ($n = 54$). Three additional responses were dropped because the organization was not an NGO. Because we wished to assess financial vulnerability among domestic NGOs, we excluded 41 responses from international NGOs. Also, to draw conclusions from our analyses based on country context, we excluded responses from Ghana ($n = 5$) reflecting a very low response rate, as well as from Somalia ($n = 2$), Cameroon ($n = 1$), and missing country name ($n = 1$). These exclusions resulted in a final analytic sample of 170 domestic NGOs in Kenya and Nigeria.

Measures

Measures used in this study were from responses to a 22-item online survey concerning the characteristics, needs, and experiences of NGOs related to organizational capacity. The construction of survey items was informed by a review

of literature on financial vulnerability of NGOs and nonprofit organizations. The survey was reviewed extensively by study authors, three of whom are from SSA and have worked with or in NGOs, including one who is an executive director of an NGO. The following variables were used to answer research questions for this study.

Independent Variables

As informed by Gronbjerg (1993), revenue diversification was measured in two ways. First, a count was produced of the number of different types of revenue respondents that said their NGO received: donor funding from international agencies, funding from a government ministry(s), individual donors (including members), corporations, foundations, and income-generating activities. Thus, the count result had a range of 0–6, with results of 4, 5, and 6 collapsed into a value of 4 or more due to a small number of responses. Similarly, Macedo and Carlos Pinho (2006) measured revenue diversification as the number of different revenue sources among NGOs in Portugal.

Second, proportion of funding from international sources was measured by assigning a value of "0" if the NGO received no international funding, "1" for receiving up to 50% of the annual budget from international sources, and "2" for receiving 50% or more. Other studies have measured revenue diversification in a similar manner—with the total amount of revenue divided by the number of different revenue sources (Hodge and Piccolo 2005; Macedo and Carlos Pinho 2006; Silva and Burger 2015). We measured proportion of revenue based on prior research indicating a high degree of dependence among NGOs in SSA on international sources of funding (e.g., Elbers and Arts 2011; NDA 2013; Wallace et al. 2006; Watkins et al. 2012).

Additional variables representing organizational characteristics that may be related to financial vulnerability served as covariates in multivariate models. For example, an NGO that has been in operation for a long period and/or with more paid staff members may have had more opportunities to cultivate revenue sources and lower its probability of financial vulnerability (Chikoto-Schultz and Neely 2016). Burde, Rosenfeld, and Sheaffer (2016) found that both tenure and size were associated with funding instability and organizational survival among Israeli NGOs. Accordingly, *tenure* was measured by recording the number of years the organization had been in operation. *Size* was measured by creating a dummy variable based on the number of paid staff, coded as "1" to indicate six or more paid staff and "0" to indicate five or fewer (including zero) paid staff. Use of the number of staff as an indicator of NGO size was also used in a study of financial vulnerability among Ugandan NGOs (Silva and Burger 2015).

Five other variables also served as covariates in models predicting financial vulnerability. A categorical variable was created to indicate the country (Kenya or Nigeria). A total of eight mission types were identified from open-ended survey responses: (1) health and/or food security; (2) children, youth, and education; (3) legal, human rights, and governance; (4) environment; (5) livelihoods; (6) domestic violence and sexual assault; (7) community development; and (8) multi-service. The multi-service category was created when respondents indicated more than one area

of focus for their NGO. For example, one respondent indicated their NGOs' mission was to "mitigate against food insecurity, climate change and sponsor bright needy learners in school."

For multivariate models predicting financial vulnerability, mission types were collapsed into a categorical variable with three values: direct services (e.g., health care), indirect services (e.g., human rights), and multi-service to avoid model overfit based on a limited number of observations per category. A similar categorization was used by Elbers and Arts (2011) in their study of NGOs in Ghana and India. Dummy variables were created to indicate whether an NGO only served rural communities and belonged to a NGO network or association, ("1" = yes; "0" = no). For internet access, a dummy variable was created with a value of "1" for "very reliable" access and "0" otherwise (i.e., "somewhat reliable," "very unreliable," or "no access").

Dependent Variables

Financial vulnerability was measured using a single indicator. Lack of adequate funding was coded as "1" and "0" based on agreement or disagreement, respectively, with the following statement "our organization has had to cut back services recently due to lack of funding." We follow Tuckman and Chang's (1991) definition of financial vulnerability as an organization cutting back services in response to revenue losses. Like Tuckman and Chang (1991), we regard a lack of funding as problematic only in so far as it disrupts the mission of the NGO.

Data Analysis

Univariate statistics were used to describe the study sample and survey responses. Bivariate statistics were used to describe differences in financial vulnerability based on tenure, size, revenue diversification, and revenue concentration. To test our hypotheses, we used probit regression models calculating margins with variables at their means to estimate predicted probabilities of financial vulnerability based on model predictors. To adjust for missing ($n = 3$), "don't know" ($n = 1$) and "not applicable" ($n = 9$) responses on financial vulnerability, a non-response weight was calculated by running a logistic regression model with model covariates (e.g., tenure and size) and using predicted values to assign inverse selection into sample weights, $1/p$ for missing and $1/(1-p)$ for non-missing.

Product terms were created for the interaction between country (Kenya or Nigeria) and count of different revenue types (Hypothesis 1) and proportion of funding from international sources (Hypothesis 2). We included the interaction term because, as reflected in Table 2, there was variation by country in revenue types and proportion of international funding. In addition, Wald tests were used to assess whether the interaction of tenure and size with other covariates (e.g., internet access) resulted in statistically significant improvements in model fit. This was done because independent variables may vary based on how long an organization has been in existence and how large the organization is. For example, the number of revenue sources an NGO has may vary based on the number of its staff. A total of

15 possible interactions were tested separately. All analyses were run using Stata version 14.0 (StataCorp 2015).

Results

Sample Description

Most respondents (90%) were executive directors or other senior managers. The remainder were members of the board of directors or trustees. One respondent indicated their position as "PA to the CEO." The sample is described in Table 1 and

Table 1 Study sample description

Variable	Kenya ($n = 87$) % or mean (SD)	Nigeria ($n = 83$) % or mean (SD)	Full sample ($n = 170$) % or mean (SD)
Tenure	6.30 (4.23)	10.99 (7.33)***	8.57 (6.37)
Number of paid staff members			
None	20	4**	12
Less than 5	30	35	32
6–20	38	48	43
More than 20	12	13	12
Type(s) of communities served			
Rural	21	10*	15
Urban	9	6	8
Both rural and urban	70	84	77
Belongs to NGO network	77	96***	86
Internet access			
None[a]	2	0	1
Very unreliable	14	5*	9
Somewhat reliable	38	48	43
Very reliable	46	47	46
Mission			
Children and youth	25	16	21
Community development	6	10	8
Domestic violence\sexual assault	0	3	1
Environment	4	4	4
Health, food security	13	9	11
Legal\human rights, governance	4	8	6
Livelihoods	10	6	8
Multi-service	36	38	37

[a] The two respondents who indicated a lack of internet access may have completed the online survey at a location away from the NGO offices, such as an internet café. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

was split nearly evenly between respondents representing NGOs in Kenya (51%) and Nigeria (49%). Tenure ranged from 1 to 49 years. Mean and median tenure were 8.6 (SD = 6.37) and 7 years, respectively. Nearly half of NGOs (44%) had fewer than five paid staff members. On average, Nigerian NGOs had been in operation four years longer than Kenyan NGOs t (161) = 5.04, $p < 0.001$. Kenyan NGOs in the sample were more likely to report having no paid staff (20%) compared to Nigerian NGOs (4%): χ^2 (1, 169) = 10.56, $p < 0.01$.

Most NGOs (77%) served both urban and rural communities. Kenyan NGOs were somewhat more likely to only serve rural communities (21%) compared to Nigerian NGOs (10%) χ^2 (1, 170) = 4.00, $p < 0.05$. Most NGOs (86%) also belonged to a NGO network, though this was more the case for Nigerian (96%) than Kenyan (77%) NGOs χ^2 (1, 169) = 13.86, $p < 0.001$. Internet access was very or somewhat reliable for most respondents. However, Kenyan NGOs (14%) were more likely than Nigerian NGOs (5%) to indicate that access was very unreliable χ^2 (1, 169) = 10.56, $p < 0.01$.

NGO missions covered a wide range of social issues and practice fields. The most common type of mission was multi-service (37%), which means that the NGO focused on more than one field of practice, such as offering health, microenterprise, and education services. The next most common mission type was children and youth (21%), followed by health and food security (11%).

Revenue Characteristics

Table 2 displays the revenue characteristics of the study sample. Concerning the different types of revenue NGOs receive, individual contributions was the most common (65%), followed by international donor funding (54%) and income-generating activities (54%). Kenyan NGOs (61%) were more likely than Nigerian

Table 2 Revenue characteristics of NGOs

Variable	Kenya (n = 87) % or mean (SD)	Nigeria (n = 83) % or mean (SD)	Full sample (n = 170) % or mean (SD)
Revenue types[a]			
International agencies	48	60	54
Government ministry(s)	29	19	24
Private individuals	68	61	65
Corporations	20	24	22
Foundations	31	25	28
Income-generating activities	61	47	54
Number of revenue types	2.49 (1.42)	2.34 (1.19)	2.42 (1.31)
% of budget covered by int'l sources			
None	35	37	36
Up to 50%	35	25	30
51% or greater	31	38	34

[a] Total exceeds 100% because respondents could indicate multiple revenue sources

NGOs (47%) to have revenue from income-generating activities, while Nigerian NGOs were more likely to receive international funding, yet these differences were not statistically significant. On average, NGOs had more than two different types of revenue. Dependence on international sources varied. Over a third (36%) of NGOs received no international funding, while 30 and 34% received less and more than half of their budgets paid for from international funding, respectively.

Financial Vulnerability

Table 3 displays results concerning financial vulnerability based on tenure, size, number of revenue types, and proportion of budgets covered by international funding sources. Financial vulnerability was very common; most NGOs (79%) said they recently had to cut back services due to a lack of funding. Nigerian NGOs were more likely than Kenyan NGOs to indicate financial vulnerability: χ^2 (1, 157) = 7.93, $p < 0.01$. The likelihood of financial vulnerability increased with tenure. Financial vulnerability was present among 73, 77, and 88% of NGOs with less than 5 years, 5–10 years, and 11 or more years of operating, respectively. However, the frequency of financial vulnerability was similar among NGOs of different sizes.

Table 3 Financial vulnerability of NGOs

Variable	Kenya (n = 87) %	Nigeria (n = 83) %	Full sample (n = 170) %
Financially vulnerable	70	88**	79
By tenure (years)			
<5	69	100	73
5–10	69	83	77
11 or more	75	94*	88
By size (paid staff)			
<5	70	93*	80
6–20	69	86	78
20 or more	72	90	81
By # of revenue types			
1	86	83	85
2	69	93*	84
3	76	100*	86
≥4	50	83*	66
By % int'l funding			
None	81	92	86
Up to 50%	68	90	78
50% or more	58	87*	73

* $p < 0.05$

The likelihood of financial vulnerability was similar among NGOs with one to three types of revenue. With four or more types, however, this likelihood decreased to 66%. The decreased likelihood of financial vulnerability associated with four or more types was more dramatic among Kenyan (50%) than Nigerian (83%) NGOs χ^2 (1, 38) = 4.68, $p < 0.05$.

Financial vulnerability was most frequent among NGOs that received no international funding (86%) and less frequent among NGOs that received up to half (78%) and half or more (73%) of their budgets from international funding sources. This pattern held true for both Kenyan and Nigerian NGOs.

Table 4 displays results of multivariate analyses using probit regression models. Model I is the model predicting financial vulnerability based on covariates such as tenure and size. Models II and III are models adding revenue diversification and revenue concentration as key predictors to test hypotheses 1 and 2, respectively. Models II and III also included terms for the interaction between country and revenue diversification and resource concentration. Out of a total of 15 interactions among tenure and size with other covariates that were tested, none were statistically

Table 4 Predictors of financial vulnerability: marginal effects from probit models

Covariate	I	II	III
Tenure	0.013	0.009	0.014
Size (Ref: 5 or fewer paid staff)	−0.054	−0.001	−0.009
Rural community (Ref: Urban or Both)	0.101	0.093	0.067
Internet access	0.008	0.014	−0.023
Belongs to NGO network	0.027	0.069	0.074
Mission (Ref: direct service)			
Indirect service	−0.111	−0.064	−0.090
Multi-service	−0.107	−0.114	−0.106
Country—Kenya (Ref: Nigeria)	−0.168*	−0.004	0.064
Number of revenue types (Ref: One)			
Two		−0.039	–
Three		−0.146	–
Four or more		−0.871***	–
% of budget int'l sources (Ref: 0%)			
Up to 50%		–	−0.166*
50% or more		–	−0.487
Country X number of revenue types		0.105	–
Country X % of budget from int'l		–	0.087
Pseudo R^2	0.091	0.184	0.123
Goodness-of-fit p value	0.31	0.63	0.39
N	138	137	134

* $p < 0.05$; inverse selection into sample weights was used to adjust for non-response on the dependent variable

significant. Therefore, no additional interaction terms were added to models. The range of variance inflation factor (VIF) values for the set of independent variables in the three models was 1.02–1.18, indicating the absence of multi-collinearity. Pearson goodness-of-fit tests for models I, II, and III all produced nonsignificant p values indicating good model fit.

In Model I, only one covariate was related to financial vulnerability. Kenyan NGOs had a 17% lower probability of financial vulnerability ($p < 0.05$) than Nigerian NGOs, all other things being equal. After introducing interaction terms in Models II and III, country was no longer a significant predictor.

In Model II, which tested revenue diversification, NGOs with four or more types of revenue had an 87% lower probability of financial vulnerability compared to NGOs with only one type, all other things being equal—a highly statistically significant difference ($p = 0.001$). NGOs with two and three revenue types had 4 and 15% lower probability of financial vulnerability, though these differences with NGOs with only one revenue type were not statistically significant.

In Model III, which tested revenue concentration, NGOs with up to half of their budget covered by international funding sources had 17% lower probability of financial vulnerability compared to NGOs without international funding, all other things being equal ($p < 0.05$). Though NGOs with half or more of their budgets covered by international funding sources also had a lower probability of financial vulnerability, the difference with NGOs without international funding was not statistically significant.

Discussion

That NGOs in SSA lack sufficient resources to accomplish their goals is widely understood. But less is known about whether revenue diversification renders these NGOs more or less at risk for financial vulnerability. We find support for our first hypothesis that a greater diversity of revenue sources is associated with lower probability of financial vulnerability. Having more than one revenue type was associated with lower financial vulnerability, though only having four or more different types of revenue was associated with a statistically significant lower probability, controlling for a host of other factors like tenure and size. These findings are consistent with prior studies, which found an association between revenue diversification and lower financial vulnerability among NGOs in Uganda (Silva and Burger 2015) and the USA (Carroll and Stater 2009; Trussel 2002).

Our finding that having four or more revenue types was associated with a particularly strong reduced probability of financial vulnerability suggests that NGOs may need to reach a critical threshold of revenue diversification. Having at least four types of revenue may provide NGOs more opportunities to fill in resource gaps when they arise to help ensure services are not reduced. This reflects Elbers and Arts's (2011) concept of compensating—NGOs using other revenue sources to fill gaps created when funders are unwilling to cover certain expenses or activities. For example, if an NGO has a foundation grant for a microenterprise program that will

expire in three months, it might draw on its capacity to raise revenue through corporate gifts, income-generating activities, individual donations, and membership dues to either replace this grant or finance the program during a transition period to another grant.

Though we find that having four or more types of revenue lessens the risk of financial vulnerability, developing this many different types of revenue may be challenging for many NGOs. Elbers and Arts (2011) found that diversifying revenue by pursuing income-generating opportunities was difficult for NGOs in India and Ghana due to a lack of capital as a result of funders' lack of overhead funding and short funding periods. That is, if existing funders are shortchanging the NGO, the NGO will not have the financial resources to develop new revenue streams. For example, soliciting corporate donations as a new revenue type may require an up-front investment NGOs do not have for marketing materials and a fund-raising staff person with expertise in corporate public relations and social responsibility. Thus, international NGOs and other funders should consider investing in capacity building to help domestic NGOs develop additional sources of revenue.

We do not find support for our second hypothesis, that greater dependence on international funding sources is associated with higher probability of financial vulnerability. We find evidence to the contrary, where having up to half of budgets covered by international sources of funding is associated with lower risk compared to receiving no international funding. This finding runs counter to prior research identifying international funding as financially problematic for NGOs (Elbers and Arts 2011; IPA 2002; Jacobs 2011; NDA 2013; Wallace et al. 2006; Watkins et al. 2012).

However, like the number of revenue types, there may be a critical threshold for international funding. NGOs that had half or more of their budgets covered by international funding had a lesser probability of financial vulnerability compared to NGOs with no international funding, but the difference was not statistically significant. This finding suggests that depending mostly on international funding may not lessen risk for financial vulnerability, perhaps due to a high degree of exposure to the adverse conditions associated with international funding (e.g., short grant periods and lack of overhead funding) found in other studies mentioned above (e.g., Elbers and Arts 2011). Perhaps the relationship between degree of international funding and financial vulnerability is curvilinear, a possibility to be explored in future research that is able to more precisely measure proportion of international funding than was possible in this study.

Concerning other factors, we find that tenure, size, type of community served, internet access, network membership, and type of mission were unrelated to financial vulnerability. However, the country in which the NGO operates is associated with financial vulnerability. Nigerian NGOs had a higher probability of financial vulnerability compared to Kenyan NGOs, even after controlling for other factors like tenure and size. One reason may be that Nigeria receives less bilateral aid than Kenya, a portion of which reaches NGOs. For example, Nigeria received £1.96 and $3.76 in annual per capita aid from the United Kingdom Department for

International Development (DFID) and United States Agency for International Development (USAID), respectively, compared to £3.76 and $12.28 for Kenya.[3]

Our study makes an important contribution to the literature on NGO revenue diversification. We lend evidence concerning how revenue diversification is related to financial vulnerability to help fill an important gap in the literature concerning NGOs in SSA. This is an important gap to fill because SSA is a region where NGOs operate in a very different resource environment and address a host of large-scale social problems compared to NGOs in other regions.

Limitations and Future Research

A key limitation of our study was the use of a small, non-probability sample of NGOs. The NGO sector is likely more complex and heterogeneous than reflected in our sample, though it is very difficult for researchers to accurately identify NGOs (Watkins et al. 2012) due to a lack of regulatory oversight. Our sample of NGOs was relatively young; nearly two-thirds had been in operation for less than ten years. Findings concerning the relationship between various aspects of revenue diversification and financial vulnerability may be very different among a sample of older NGOs.

Another key limitation was our use of data from an online survey. NGOs in our sample may differ in systematic ways from NGOs who were not aware of the study and opportunity to participate. Also, we depended on a single respondent from each NGO who may or may not have given fully accurate responses concerning their NGO.

Lastly, survey items had measurement limitations. We measured diversification by revenue category (e.g., foundations and government); we did not enumerate the number of or amounts from different sources within each of these categories. Different results might be found with detailed and direct observational measures of revenue diversification. Many studies of US NPOs use the Herfindahl–Hirschman Index (HHI) to measure revenue diversification and its relationship to key financial indicators using Internal Revenue Service Form 990 data (e.g., Carroll and Stater 2009; Chang and Tuckman 1994). However, NGO financial data are not publicly available and are difficult to elicit (Barr et al. 2005). As a result, an alternative set of financial vulnerability indicators that fit the lower-resource contexts of NGOs should be developed and used by researchers in future studies. Another limitation was that we did not ask NGO representatives about non-financial resources that help them fulfill their missions, such as volunteer labor and donated supplies. Financial vulnerability may look different when accounting for these additional resources.

In the future, researchers should work with NGO networks and associations, and government agencies within each country studied to recruit a representative sample of NGOs. We intended to sample NGOs in Ghana, but found it very difficult to identify and contact Ghanaian NGOs. Thus, absent greater regulatory oversight—including a registry of NGOs as is available in Kenya—researchers should be

[3] 2016/17 budgeted aid from DFID, see https://devtracker.dfid.gov.uk/; 2014 spending from USAID, see http://explorer.usaid.gov/.

prepared to spend considerable time identifying the population of NGOs from which a sample will be drawn.

Researchers identify the best ways to accurately measure NGO financial vulnerability and more broadly, resource capacity. One way to improve measurement accuracy is to identify conditions associated with each funding source, e.g., overhead allowance percentages, the degree of alignment between purpose restrictions and current NGO programming, the extent to which funding sources cover full program costs, and the duration of funding periods. Another important strategy is to assess organizational capacity to implement various revenue generation strategies that require different skill sets and organizational resources (Gronbjerg 1993; Mitchell 2014) and to measure financial vulnerability in relation to capacity to meet community needs versus measuring financial vulnerability alone. Lastly, researchers should attempt to use NGOs' financial data to construct measures of financial vulnerability. de Andres-Alonso, Garcia-Rodriguez, and Romero-Merino (2016) propose examining multiple dimensions of financial vulnerability—operational (variation of net assets over time), leverage (ratio of total assets to debt), and liquidity (ratio of current assets to short-term debt).

More ambitiously, researchers might try to follow NGOs over multiple years to observe changes in financial vulnerability and resource capacity and how these changes are related to revenue generation factors both within and outside of the control of NGOs. This is an important theoretical point as a distinction should be made between adaptive responses that NGOs develop and implement (Mitchell 2014) versus revenue profiles that merely reflect NGOs attempts to accept any revenue sources they can obtain. In-depth interviews and focus groups with NGO leaders, funders, and intermediary or consortium leaders could elucidate the complexities of NGOs' efforts to secure and manage resources.

Conclusion

This study finds that financial vulnerability is common among NGOs in sub-Saharan Africa. Though revenue diversification is touted as an adaptive response to lessen vulnerability, it depends on how diversification is measured. We find that measuring it based on number of different types of revenue fails to predict vulnerability, but that examining each type and considering funding proportions offers some explanation. However, one popular indicator of vulnerability—lack of reserve funding—was nearly universal among NGOs, suggesting that reserve funding may not be a useful measure in lower-resource contexts. Future research should more closely examine the effects of different types of diversification, particularly delving into characteristics of specific funding sources and the effect these sources have in relation to capacity to meet community needs and promote social development.

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