Humanitarian Organizations in the Charitable Market: Impact of Spending Ratio, Fundraising, and Transparency on Donations

Iman Parsa, Mahyar Eftekhar (Arizona State University), Charles J. Corbett (University of California at Los Angeles)

Introduction

Motivation

- During 2014-2016 number of nonprofits grew by 13%, up to 1.8 million organizations, while total donations grew by only 9% [1].
- This increased competition has made humanitarian organizations (HOs), specifically, to experience large variation and unpredictability in their funding, which affects the quality of the services that they offer [2].
- Nonprofits' predominant strategy to increase donation income is fundraising [3].
- Yet, fundraising diverts funds away from the core programs, based on which donors evaluate HOs' performance [4].
- Donors are also influenced by other factors such as the HOs' transparency and the media [4-5].
- The literature presents an ongoing debate regarding the impact of these variables on nonprofits' donation income. However, these effects are only analyzed in isolation and irrespective of organizational size, resulting in inconsistent conclusions. Also, these effects have not previously been studied specifically for HOs.
- Overall, HOs need more funding, but there is not much clarity among executives or in the literature on how best to achieve that.

Questions

1. What are the effects of these various factors on an HO's donation income?
2. Do these effects vary depending on the organization's size?

Theory & Hypotheses

Spending Ratio

- Donors favor nonprofits that have budgets devoted to their core programs rather than overhead and prefer organizations with higher program spending ratios, the ratio between program expenses and total expenses [4].
- Increasing spending ratio to very high levels, which means severe limits to fundraising investment, may result in losing donations. Also, this ratio is capped at 1, so its effects cannot be truly linear.

***H1a**: A humanitarian organization's program spending ratio is positively associated with the amount of public donations it receives.*

***H1b**: The positive effect of program spending ratio on a humanitarian organization's donation income is nonlinear and concave.*

Fundraising

- Fundraising reduces donors' search cost, conveys quality of a nonprofit's services and has a positive effect on donations [6].
- Researchers warn that The expected return from each dollar invested in fundraising declines for at least two reasons. First, too much solicitation activity could result in donor fatigue and, in turn, decreased marginal benefits [7]. Second, donors might perceive it as a sign of a lack of charitable output [8].

***H2a**: A humanitarian organization's fundraising investment is positively associated with the amount of public donations it receives.*

***H2b**: The positive effect of fundraising investment on a humanitarian organization's donation income is nonlinear and concave.*

Transparency

- Transparency, the voluntary disclosure of financial and programs-related data enables donors to evaluate nonprofits and decide on recipients and amounts of their donations [5].
- However, the effect of transparency is positive only when the entity performs well [9]. Therefore, we examine the effect of transparency in interaction with program spending ratio.

***H3**: The level of transparency of a humanitarian organization accelerates the positive impact of its program spending ratio on public donations.*

Media Exposure

- For many donors, familiarity with a nonprofit is the first critical factor in their donation decision making [10]. Media exposure is a powerful tool to amplify a nonprofit's reputation and familiarity.
- Media exposure result in increased donation income [4].
- Potential donors who are solicited in a fundraising event are more likely to donate when they are familiar with the nonprofit and have read or heard about the nonprofit in the media.

***H4**: A humanitarian organization's media exposure accelerates the positive impact of its fundraising investment on public donations.*

Data & Method

Data

- 120 HOs from 2000 to 2014
- **Sources:**
  Financial information (donations, expenses, assets, etc.) from Form 990
  Media citation data from Factiva
  Reviewed websites over time for transparency using Wayback Machine
  (Transparency scores are calculated using Charity Navigator's method)

IRS Form 990 | DOW JONES FACTIVA | WayBackMachine

- **Data Cleaning:**
  Total revenue <\$1M, or total donation income <\$500,000
  13 observations with extremely large revenue
  5 observations with zero management expenses
- **Final Data:** 1,258 observations of 103 HOs

Method

Mixed effects model (random intercept)

- $y_{it} = \alpha_0 + \alpha_1 X_{it} + \alpha_2 Z_{it} + u_{it}$, i: HO index, t: year index.
- X_{it} : spending ratio, fundraising, transparency, media exposure
- Z_{it} : controls (size, age, program diversity, self-sufficiency, mandate type)
- $u_{it} = \varepsilon_{it} + \upsilon_i$,
  - ε_{it} : residual error term, υ_i : organization-specific random effect

Results

Full Model

Public donations	Medium-size HOs	Large Hos
Program spending ratio$_{i(t-1)}$	-1.160*** (0.444)	-42.871*** (13.208)
Program spending ratio$^2_{i(t-1)}$	0.007** (0.003)	0.255*** (0.077)
Fundraising investment$_{it}$	9.637** (4.604)	11.719*** (1.379)
Fundraising investment$^2_{it}$	-6.758* (3.906)	-0.027** (0.011)
Transparency$_{i(t-1)}$	-0.273* (0.154)	-3.146+ (1.956)
Transparency$_{i(t-1)}$ × Spending ratio$_{i(t-1)}$	0.004** (0.002)	0.036+ (0.022)
Media exposure$_{it}$	0.008 (0.019)	-0.040 (0.054)
Media exposure$_{it}$ × Fundraising$_{it}$	-0.064+ (0.040)	-0.001 (0.002)
Size$_{it}$	1.183*** (0.127)	0.434*** (0.062)
Age$_{it}$	0.112* (0.065)	-0.289 (0.605)
Self-sufficiency$_{i(t-1)}$	-1.799 (3.135)	-19.586 (30.075)
Program diversity$_{it}$	-0.602*** (0.207)	1.700 (1.324)
Mandates$_{it}$	Included	Included
Intercept	50.162*** (18.932)	1772.763*** (574.294)
Observations	385	740
Wald test	244.348***	469.433***
LR test	168.851***	614.085***

Average Marginal Effects

Public donations	Medium-size HOs	Large Hos
Program spending ratio$_{i(t-1)}$	0.214*** (0.058)	4.548*** (1.019)
Fundraising investment$_{it}$	5.095* (2.934)	11.273*** (1.195)

***, **, *, and + denote significance at 1%, 5%, 10%, and 15% levels.
Dependent variable and all expenses are scaled down to \$1M.

- Average marginal effects indicate positive significant effects for program spending ratio and fundraising investment, **supporting H1A and H2A**.
- The impact of program spending ratio is nonlinear, but contrary to our expectation and as shown in Fig. 1, it is convex and its marginal effect is increasing (**partial support for H1B**).

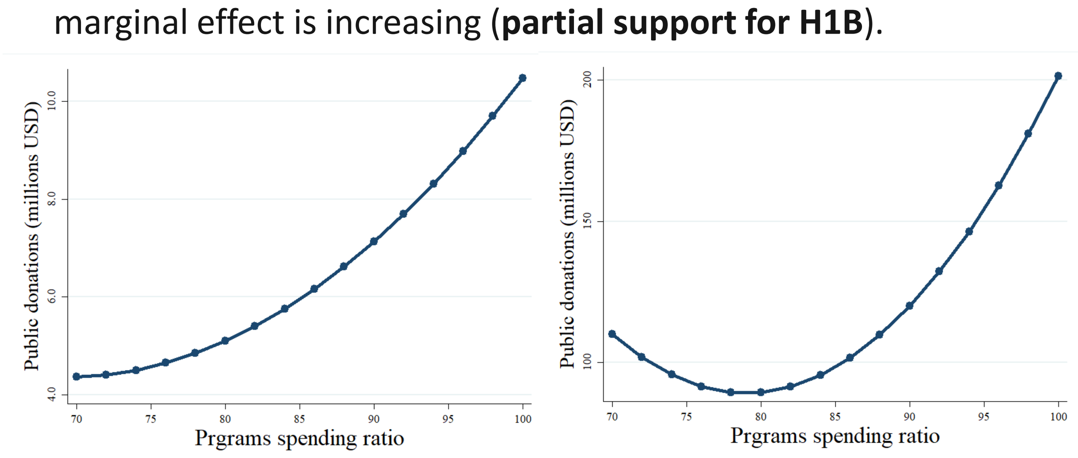

Fig 1. Predictive margins of public donations to medium (left) and large HOs (right).

- The effect of fundraising investment, as expected and shown in Fig. 2, is nonlinear and concave, **supporting H2B**. However, this concavity is limited for large HOs since they do not invest in fundraising beyond a reasonable range.

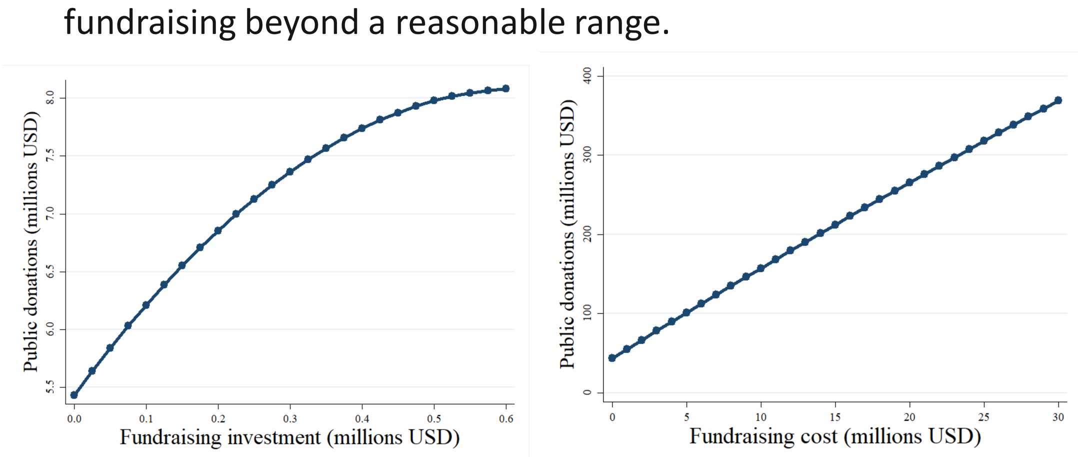

Fig 2. Predictive margins of public donations to medium (left) and large HOs (right).

- Positive significant interaction between transparency and program spending ratio **supports H3**. As also shown in Fig. 3, an HO's program spending ratio has a stronger effect at higher levels of transparency.

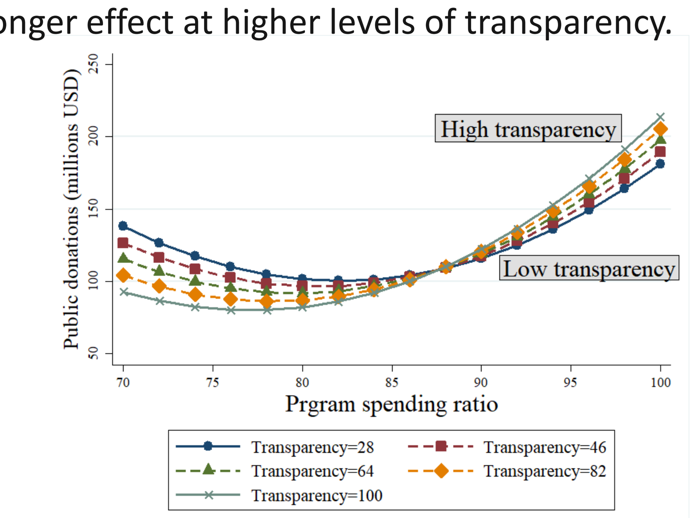

Fig 3. Predictive margins of public donations to medium-size HOs.

- We only find a negative significant effect for the interaction between media exposure and fundraising investment for medium-size HOs (**fail to support H4**), suggesting a substitutive relationship between the two.

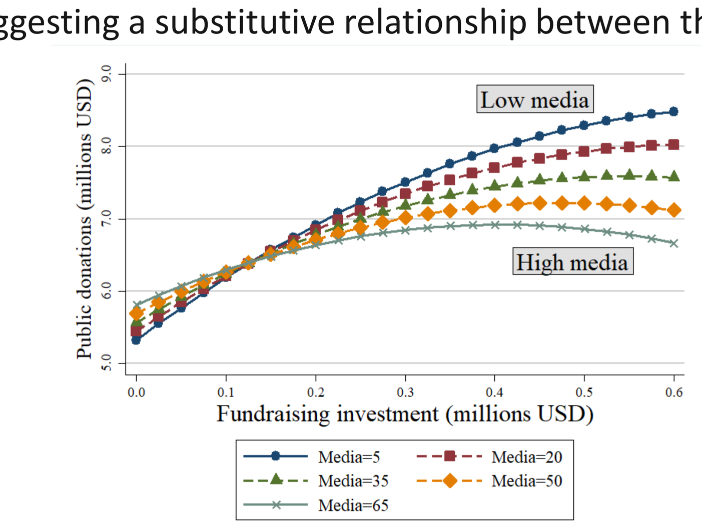

Fig 4. Predictive margins of public donations to medium-size HOs.

Discussion & Insights

- Our results exclude the possibility of a unique policy that can increase the donation income of all HOs. To increase their income, HOs should tailor their plans with respect to their organization size.
- These results caution HOs against high fundraising investment. While higher fundraising costs increases donation income in the same year, it results in a lower program spending ratio that translates into a negative impact on donations in the future.
- HOs should be aware that transparency alone may not earn the trust of donors if the HO's operations are not performing well. At low levels of program spending ratio, transparency could even result in losing donations.
- Our results also provide insights regarding the mechanisms of giving. Among different mechanisms [7], efficacy (the perception that donations are effectively used for the nonprofit's mandate) might be the main mechanism that drives donations to HOs.
- Figure 5 shows suggested action plans for HO managers based on these results.

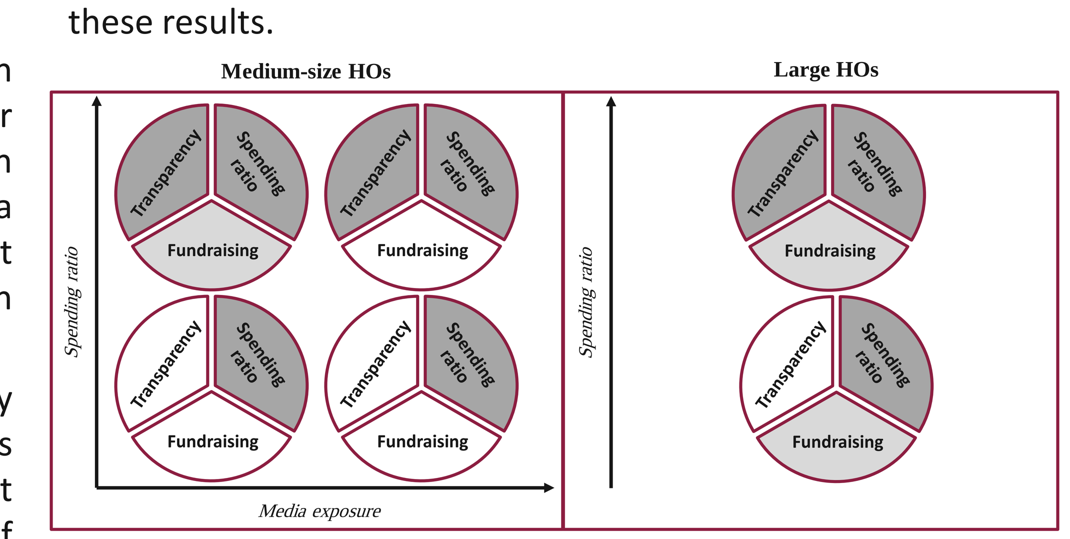

Fig 5. Suggested preliminary action plans for HOs to increase their donation income. Shading represents the level of importance; x shows very important, x shows moderately important factor, and x shows unimportant factor

References

[1] Natarajan, K. V., J. M. Swaminathan. 2014. Inventory management in humanitarian operations: Impact of amount, schedule, and uncertainty in funding. Manufacturing & Service Operations Management 16(4) 595–603.
[2] Bose, B. 2015. Effects of nonprofit competition on charitable donations. Working paper, University of Washington-Seattle, Seattle, WA.
[3] Zhuang, J., G.D. Saxton, H. Wu. 2014. Publicity vs. impact in nonprofit disclosures and donor preferences: a sequential game with one nonprofit organization and n donors. Annals of Operations Research 221(1) 469–491.
[4] Eftekhar, M., H. Li, L. N. Van Wassenhove, S. Webster. 2017. The role of media exposure on coordination in the humanitarian setting. Production and Operations Management 26(5) 802–816.
[5] Devalkar, S. K., M. G. Sohoni, P. Arora. 2017. Ex-post funding: How should a resource-constrained non-profit organization allocate its funds? Production and Operations Management 26(6) 1035–1055.
[6] Ryzhov, I. O., B. Han, J. Bradic. 2015. Cultivating disaster donors using data analytics. Management Science 62(3) 849–866.
[7] Bekkers, R., P. Wiepking. 2011. A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. Nonprofit and Voluntary Sector Quarterly 40(5) 924–973.
[8] Okten, C., B. A. Weisbrod. 2000. Determinants of donations in private nonprofit markets. Journal of Public Economics 75(2) 255–272.
[9] Buell, R. W., M. I. Norton. 2011. The labor illusion: How operational transparency increases perceived value. Management Science 57(9) 1564–1579.
[10] Kinsbergen, S., J. Tolsma. 2013. Explaining monetary donations to international development organisations: A factorial survey approach. Social Science Research 42(6) 1571–1586.