

# **DONORS TALK: THE SIGNALING AND IMPRINTING EFFECTS OF GIVING TO SOCIAL ENTERPRISES**

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## **Abstract**

How should donors fund microfinance organizations and maximize social impact? Should they spread their contributions across multiple organizations or concentrate them? We address this thorny issue by separately examining how the act of giving a donation and the amount of giving affect the social performance of MFOs worldwide. Drawing on signaling theory, we hypothesize that the act of giving has a more significant impact on social performance than the actual amount donated. Moreover, we show an imprinting effect on social performance that persists even when donations dry up. That is, the improved social performance observed during subsidized periods is not reversed in subsequent unsubsidized periods. The global social impact of donor contributions diversified across many organizations may be greater than that of concentrated funding in a few.

## INTRODUCTION

Donors are known to improve the social performance of the social enterprises they support (Grimes et al., 2019; Wry & York, 2017; Cobb et al., 2016). However, the precise mechanism driving this effect remains poorly understood. We argue that the impact of giving on social performance goes beyond the direct effect of easing the budget constraint. We theorize that the presence of donors, regardless of the amount given, signals legitimacy and thus reduces the informational asymmetries that plague philanthropic action. Our empirical results support this prediction. They also suggest that donations have an imprinting effect on social performance, meaning that the effect persists even when donations dry up.

According to financial theory, optimal asset management is associated with intensive diversification (Markowitz, 1959). In contrast, corporate control requires a large stake in the target company, which automatically reduces the ability to diversify (Shleifer & Vishny, 1986). Donors seeking to maximize their social impact face a similar trade-off: Should they diversify a fixed budget for giving across many socially oriented organizations or focus on a limited number? In contrast to financial theory, little is known about the pros and cons of diversifying charitable giving. We address this issue by examining the social impact of donors on one type of social enterprise, microfinance organizations (MFOs). MFOs represent a relatively homogeneous group of social enterprises with widely accepted measures of social performance. As such, they provide a particularly conducive context for examining the social counterpart of the financial trade-off between diversification and control.

Donors typically expect social performance in return for their financial support. Following Battilana et al. (2015) and Scott (1977), we define social performance as the “degree to which an organization is effective at producing positive social outcomes” (Battilana et al., 2014, p. 1664). However, social performance is a multifaceted concept, and the diversity of social outcomes makes social performance much more difficult to assess than financial performance (Battilana, 2018; Monne et al., 2016; Ebrahim & Rangan, 2014; Ebrahim et al., 2014). For example, some funders are concerned with gender policies, the fair treatment of

minorities, or the development of local communities (Drori et al., 2020; Hicks & Maldonado, 2020), while others seek to alleviate poverty and health problems (Cull et al., 2009). Overall, social performance is critical to donors, whether they are charities, corporate philanthropists, motivated citizens, or socially responsible investment funds. At the same time, the monetary contributions of donors are critical to the achievement of social goals. A key objective of this paper is to disentangle the pure signaling effect of the presence of donors from the monetary effect of receiving money to fulfill the organization's social mission.

The main risk of spreading donations across many organizations is the loss of tight control over social performance, leading to mission drift (Armendáriz & Szafarz, 2011). Mission drift occurs when commercial considerations overshadow the social mission (Wry & Zhao, 2018; Kent & Dacin, 2013), thereby reducing the social impact expected by donors. On the other hand, concentrating funds on a few beneficiaries limits social action and puts the donor's reputation at risk in the event of a miscalculation. The way in which donors allocate their charitable contributions can have long-lasting effects on the recipient institutions (McWilliams & Siegel, 2001). Mair et al. (2012, p. 364) assert that "we need to better understand the factors that enable social entrepreneurial organizations to remain committed to their social mission while sustaining effective operations." Donors are key stakeholders in the microfinance industry's efforts to fulfill a social mission, and understanding how their portfolio decisions affect the MFOs in which they invest can have theoretical and empirical implications.

Our conceptual framework is based on signaling and imprinting theories. We argue that subsidized MFOs strive to meet the social performance targets set by their donors not only to please them but also to signal their own trustworthiness. Poor social performance can jeopardize reputation and thus reduce the likelihood of future financial support (Fombrun & Shanley, 1990; Hutton et al., 2001). The presence of donors can influence social performance through three complementary channels: budget constraint relaxation, performance monitoring, and reputation signaling. Donor support provides external legitimacy to the MFOs and the reputational effect tends to be long-lasting. Therefore, we theorize that the act of giving goes

far beyond the amount of money granted. Its importance stems from the fact that it signals to stakeholders that the recipient meets social performance expectations. However, the monitoring and reputation effects have different temporalities. Monitoring can take place at any time after donation, but reputation takes time to build. According to signaling theory, reputation effects should persist even after the direct infusion of donations has dried up. This is consistent with the idea of imprinting; that is, past organizational decisions influence future outcomes (Stinchcombe, 1965). In sum, our theoretical predictions are twofold. First, the mere act of giving matters more for social performance than the amount given. Second, giving has a virtuous imprinting effect on social performance.

To test these predictions, we need a set of social enterprises with similar social performance goals. To do this, we consider MFOs in developing countries. The primary mission of MFOs is to alleviate poverty by providing microcredit and other financial services to microentrepreneurs who are unserved by mainstream banks (Armendáriz & Morduch, 2010). Two key variables are typically used to measure an MFO's outreach: the average loan size and the percentage of women borrowers (Cull et al., 2009). The international recognition of these two criteria of mission fulfillment allows us to interpret an MFO's scores as social performance.

MFOs are organizations with observable and comparable outcomes. This highly subsidized sector<sup>1</sup> is also a case in point for the commercialization of social enterprises (Pozzebon et al., 2019; Augustine, 2012; Battilana and Dorado, 2010). MFOs are thus an ideal type of organization for empirical investigation on donor influence on social performance (Gyapong & Afrifa, 2019; Zhao & Wry, 2018; Battilana & Lee, 2014; Kent & Dacin, 2014; Eikenberry & Kluver, 2004). We use a large global sample of 2,799 MFOs operating in 121 countries, obtained from the Microfinance Information Exchange (MixMarket). We address the econometric concern of endogeneity using Hausman-Taylor (HT) regressions and

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<sup>1</sup> 67% of the MFOs in our dataset receive donations at some point during the sample period.

providing a series of robustness checks, such as simultaneous equation modeling and tests for non-linearities. Our results support our theoretical hypotheses. First, the mere presence of a donation improves social performance, while for those MFOs that receive donations, the size of the donation has no significant effect on social performance. Second, social performance persists even when donations dry up. Our findings provide additional insights into the distinction between financial and social performance in assessing the mission of MFOs. Previous research has shown that MFOs that benefit from large subsidies perform better financially (Cull et al., 2018; Mersland et al., 2018), but this does not necessarily appear to be the case for pro-social performance.

The rest of the paper is organized as follows. Section 2 presents the theoretical framework. Section 3 presents the methodology and the database. Section 4 discusses the empirical results, including a series of robustness checks and further analysis. Section 5 draws conclusions and provides policy recommendations.<sup>2</sup>

## **SIGNALING, IMPRINTING, AND SOCIAL PERFORMANCE**

This section adapts signaling theory to explain how donors to MFOs signal their interest in social performance to their key stakeholders, such as other donors and regulators. Donors are the senders of the signal while the stakeholder community is the receiver. The underlying message in the signal relates to expected social performance. Thus, the MFO takes action by seeking higher social performance. We theorize that this effort goes beyond the direct monetary effect of easing the budget constraint. To distinguish between the signaling effect and the monetary effect, we consider two separate variables representing the donor effect: a binary variable representing the presence of donors and the dollar amount of donations.

Signaling is an important management tool because it reduces information asymmetries between the organization and its stakeholders (Bergh et al., 2014; Connelly et al., 2010).

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<sup>2</sup> A previous version of this article was presented at the Academy of Management Annual Meeting. The one-page abstract is published in the Proceedings (D'Espallier et al., 2021).

Asymmetric information, and thus the need for signaling, is prevalent in various business circumstances. For example, Lester et al. (2006) mention the signaling value of managerial characteristics such as prestige. Spence (2002) explains how high-quality prospective employees use the costly signal of rigorous higher education to differentiate themselves. Zhang and Wiersema (2009) show that CEOs of publicly traded companies use their financial statements to signal the unobservable quality of their firms to investors. Similarly, the presence of venture capitalists and business angels conveys valuable information (Elitzur & Gavius, 2003).

Signals are theorized as feedback and informal messages (Gupta et al., 1999; Gulati & Higgins, 2001). Credibility and reliability are critical components of good signals. The applicability of signaling theory to philanthropy and socially responsible organizations has been demonstrated in several contexts. Busenitz et al. (2005), Sanders and Boivie (2004), and Connelly et al. (2011) analyze the reliability of the signals sent by firms to their investors. Firms tend to adapt the strength of their signals to circumstances, such as the presence of competitors (Karamanos, 2003), and the environment of the receiver (Gulati & Higgins, 2003; Srivasta, 2001).

We argue that signaling theory can explain the performance of social or hybrid organizations such as MFOs. Social or hybrid organizations combine a mission focused on serving their communities with a business orientation (Jay, 2013). Hybrids compete fiercely for donations and strong social performance is a credible signal that attracts the attention of potential donors concerned about social responsibility (Barber et al., 2021). As a result, signaling social performance can help to secure funding. However, in order to assess the effectiveness of their actions, socially concerned donors need to measure the social performance of the organizations they support (Dacin et al., 2010; Cornée et al., 2016). For external stakeholders such as donors, asymmetric information makes it difficult to assess social performance (Heinrich, 2002; Gibbons, 2005, Cozarenco & Szafarz, 2020). Kent & Dacin

(2013) mention several problems, including the cost of collecting relevant data in remote areas and the lack of motivation of donors.

In Markowitz's (1952) model of portfolio management, the optimal diversification strategy for risk-averse investors is to maximize their expected returns at their higher acceptable level of risk. Under the assumptions of the Capital Asset Pricing Model (CAPM), the risky component of any optimal portfolio mimics the composition of the market portfolio, and therefore includes all risky assets available in the investment universe. This theoretical framework is the primary rationale for passive index investing. In contrast, an investor who wishes to gain some control over a company will overweight their portfolio with that stock to increase ownership (Schleifer & Vishny, 1986). How each investor addresses this diversification/control trade-off depends on multiple parameters, including regulatory constraints that may limit predatory benefits of controls, such as large firms controlling each other and creating vicious monopolistic cycles (Schmaltz, 2018; Levy & Szafarz, 2017).

In charitable giving, donors seek to maximize their social impact. As a result, the trade-off between diversification and control takes a slightly different shape. While diversification remains an effective risk-reduction tool for increasing impact, the reputation/signaling effect suggests that less involvement does not necessarily imply less expected impact. In a setting where all recipients share the same business activity and seek similar outcomes, as is the case in the microfinance sector, maximum diversification has no drawback in terms of control, provided that signaling acts as a perfect substitute for the amount donated. If this is the case, then observed social performance should depend more on the presence of donors than on the amounts donated.

We argue that, in microfinance, visible donor involvement is the most effective signal of good social performance to outsiders. The microfinance industry faces severe information asymmetries due to multiple and unintuitive measures of poverty reduction. Some donors get



around this issue by partnering with and closely monitoring the organizations they support.<sup>3</sup> Being an insider provides access to privileged information.<sup>4</sup> As a result, the continued involvement of existing donors sends a credible signal to the donor community and thus contributes to the reputation of their grantees (Lee, 2001; Connelly et al., 2011). Recipient organizations will therefore strive to deliver the social performance expected by their donors in order to maintain their support. Microfinance managers are constantly balancing between their competing social and financial objectives (Dacin et al., 2010; Tchakoute-Tchuigoua & Soumaré, 2019). In MFOs with donor involvement, the willingness to preserve the implicit reputational signal will push managers to place more emphasis on the social bottom line. The presence of donors, especially those involved in governance bodies, plays a crucial role in increasing the social impact of poverty reduction (Ghosh & van Tassel, 2013). A good reputation is a valuable resource that can be used to build or strengthen a competitive advantage (Nason & Wiklund, 2018; Tchakoute-Tchuigoua et al., 2020). In sum, MFOs that receive grants have an incentive to meet the performance expectations of their existing donors. Thus, the presence of donors should be important for social performance. Accordingly, we hypothesize that social performance is positively associated with the presence of donors.

*Hypothesis 1a: There is a positive relationship between the presence of donors and the social performance of social enterprises.*

In contrast, the amount they give may affect financial sustainability, but its association with social performance is likely to be limited. Although larger donations are obviously better for expanding social outreach, the amounts are typically private information held by both the donor and the beneficiary, while the act of giving is typically made public by the actors involved. Both donor and receiver organizations tend to publish their lists of recipients/benefactors rather

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<sup>3</sup> Similarly, prestigious outsiders sitting in the board provide legitimacy to firms going public (Certo, 2003; Connelly et al., 2014).

<sup>4</sup> For their own accountability, donation providers typically rely on outcome-based systems and contractual arrangements and intermediary evaluations (Hartarska, 2005). The total amount of donation is divided into tranches, and each disbursement is conditional on positive appreciations on past performance indicators, including social outcomes (Balkenhol & Hudon, 2011).

than the amounts involved. By their very nature, unreported amounts of giving cannot send a signal. Moreover, one could argue that there is still a monetary channel to social impact. However, because the management decision-making process that is linking donations to social performance can be complex and indirect, there is no guarantee that every dollar donated will ultimately result in additional social performance. In many situations, especially with pro-social MFOs, the donated money is simply necessary to ensure the organization's survival or to maintain its operations. Thus, the signaling framework we adopted leads us to hypothesize that the monetary association may not be in evidence:

*Hypothesis 1b: There is no relationship between the amount of donations and the social performance of social enterprises.*

Our next hypothesis addresses the long-term effects of donations. Specifically, we ask whether the donation effect persists after funding dries up. We apply imprinting theory to help us understand the consequences of funding on the long-term practices of MFO organizations. Imprinting theory operates at multiple levels. To begin, imprinting logic suggests that there is a period in the life of the organization when it is susceptible to the influence external stakeholders and comes to reflect their environmental influence. The imprinting effect of the founders holds for social enterprises (Battilana et al., 2015) and as does the imprinting effect of prior organizations with which they engaged (Higgins, 2005). Donor presence can create a set of organizational imprints that shape the managerial styles of MFO decision-makers. The creation of imprints does not require direct interaction rather a sustained exposure to an environment (Bourdieu & Wacquant, 1992). This donor presence alone may be sufficient for imprinting to take hold such that top decision-makers align their priorities with those of the donors.

Investors, donors, or other alliance partners can shape the development of an organization's goals, routines, and performance outcomes (Milanov & Fernhaber, 2009). Imprinting shapes the substantive (that is operational) and later dynamic (that is adaptive) capabilities that the organization needs to develop in order to achieve and maintain its goals

in a changing environment (Khavul et al., 2010). Moreover, imprinting persists over time even when the environment changes (Marquis & Tilczik, 2013). In fact, substantive capabilities, in general, and those formed through imprinting can persist over time and this persistence of the effect depends on internal processes set in motion during the nascent period when donors are likely to be first present (Ellis et al., 2017). Although path dependence and inertia have been proposed as possible explanations for the long-lasting effects of imprinting, more recently scholars have suggested that imprinting should be viewed as an active rather than a passive process (Ellis et al., 2017). That is, the effects of imprinting through donor presence may span generations of leaders in the organizations through the transfer of norms and knowledge from the generation of leaders who received the donation to subsequent generations.

In addition, if donor presence can imprint substantive capabilities on MFOs, it may have a similar effect on adaptation to change after the donor funding dries up. Thus, while the effect of imprinting on substantive capabilities may account for the continuation in the short-term of organizational priorities with respect to social performance, dynamic capabilities developed during the imprinting period of a donor's presence would account for the multiperiod persistence of social performance after donations cease. This argument relies on learning from donors, but again, the literature suggests that such learning need not be direct but can be vicarious through the observations that MFOs make about the interaction of donors with proximal others (Gioia & Manz, 1985). This captures a further pathway of donor imprinting on the organization; imprinting that is indirect and transmits through the experience of others. Thus, effect of donors on social outcomes is not limited to the moment of their involvement but, we contend, has long-lasting effects on the life of the supported organization.

Finally, consider the situation in which donors divest financially from an MFO for one or more periods. To begin, if the monetary effect accounted for compliance with social performance goals while the donor was invested in the MFO, then we would expect to see

not only an effect from the size of the donation (which we ruled out above) but also a precipitous turn away from social performance goals. Building on the hypotheses above, we offer that it is the signaling effect that provides the explanation of how imprinting allows the social performance goals to persist. Imprinting from donor presence embeds organizational norms and templates which become anchored in the substantive and dynamic capabilities of the MFO. When donors cease to finance the MFO, they may be signaling one of several scenarios (a) the organization is developed to the point where neither financial donations nor its reputation effect add further value to the development of the organization's capability portfolio, (b) the donor is testing whether the organization will stay the course before investing again; that, whether the imprinting has had authentic grounding, and (c) the donor is shifting to an in-kind donation method which does not involve financial presence but maintains its signaling and norm or strategy setting requirements. We contend that in each of these scenarios, MFOs have a strong incentive to persist with the social performance goals imprinted during the donation period. Divergence from this strategy may create inferences about negative performance on the part of the MFO or poor diversification choice on the part of the donor. In our framework, the imprinting effect is based, among other arguments, on reputational benefits that MFOs receive from their former donors who provide evidence of their social impact.<sup>5</sup>

*Hypothesis 2 (Imprinting): The positive relationship between donor presence and social performance of MFOs persists when donations dry up.*

## **DATA AND EMPIRICAL STRATEGY**

The Microfinance Information Exchange (MixMarket) database is commonly used in the microfinance literature (Gyapong & Afrifa, 2019; Cull et al., 2018; Ahlin et al., 2011; Hermes et al., 2011). The version we use includes 2,799 MFOs operating in 121 countries over the

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<sup>5</sup> A similar argument has led Morduch (2007) to advocate for so-called smart subsidies that are limited to the start-up phase, in order to avoid the dangers of dependency on over-subsidization.

period 1995-2015. Of these MFOs, 30% are NGOs, 23% are cooperatives, 8% are banks, and 29% are non-bank financial institutions.<sup>6</sup> The remaining 10% have different statuses, such as state banks or regional rural banks. The dataset includes general information and audited financial statements.

To test hypotheses 1 and 2, our baseline model examines the impact of both the *presence* of subsidies and their *level*. The *presence* variable is captured by a dummy variable that equals one if the MFO receives subsidies at any point during the observed sample period. The *level* variable, measured only for subsidized institutions, is the amount received on an annual basis, converted into USD for comparability and divided by total assets. These two variables are taken from the income statements. As a robustness check, we replace the *level* of donations from the income statement with balance sheet donations (donated equity in USD as a percentage of total equity), which focuses on the accumulation of historical donations as opposed to annual recurring donations (Hudon and Traça, 2011).

The microfinance literature shows that donors measure the impact of social performance using two main indicators: the percentage of female clients and the average loan size (Cull et al., 2009; Mersland & Strøm, 2010; D'Espallier et al., 2013 and 2017). The percentage of female clients is a useful criterion because globally, women are on average poorer than men worldwide, a fact referred to as the "feminization of poverty" (Pearce, 1978). The average loan size captures the clientele targeted by MFO because poorer borrowers typically request smaller loans (Cull et al., 2018). Therefore, we use these two indicators of social performance typically scrutinized by the donors: the percentage of female clients (%FEM) and the average loan size (ALS). ALS is scaled by GNI per capita.<sup>7</sup>

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<sup>6</sup> Non-banking financial institution is an intermediate status between unregulated NGO and fully-fledged bank.

<sup>7</sup> The demand for social performance is accompanied by a decline in financial support for hybrid organizations, particularly MFOs. There are at least two reasons for this unfavorable trend. First, the financial crisis has led many countries to reduce their development aid budgets. The second reason is specific to the microfinance sector, which has been criticized for its lack of proven impact. Major donors have reduced their contributions following the publication of mixed evidence suggesting low poverty reduction (Banerjee & Duflo, 2011).

Table 1 shows the descriptive statistics.<sup>8</sup> Due to an unbalanced panel and missing observations for several variables, the number of observations is not equal for all variables. The median MFO has been in operation for 10 years and manages a total outstanding loan portfolio of USD 2.4 million; 59% of MFOs offer deposit accounts in addition to loans; and 69% are regulated. Most MFOs rely heavily on donations. Only 32% of the MFOs report no subsidies in their income statement for the entire sample period. The average annual level of donations is USD 72,342 or 3.25% of total assets. Balance sheet figures show that only 31% report no donated equity, and the average amount of donated equity as a percentage of total equity is 19.4% and 26.7% for all observations and non-zero observations, respectively. Turning to the social performance variables, we observe that ALS (scaled by GNI per capita) is 74%, the average loan size is USD 1,114 and the percentage of female clients is 64% on average, confirming that microfinance is focused on female borrowers.

**< Insert Table 1 >**

To assess the impact of donations on social performance, we will run random-effect (RE) regressions where the social performance indicators are regressed on the presence/level of donations and other MFO characteristics. Thus, our baseline equations can be written as:

$$SP_{i,t} = \alpha + \beta_1 DON_{i,t} + \gamma' X_{i,t} + \mu_i + \vartheta_r + \varepsilon_{i,t} \quad (1)$$

where  $SP_{i,t}$  captures the social performance of the MFO, proxied by either  $ALS_{i,t}$  or  $\%FEM_{i,t}$ .  $DON_{i,t}$  captures the presence/amount of donations. Importantly, we test the effect of the amount of donations *conditional on* receiving donations. Donations are measured by the reported donations in the income statement relative to assets. The presence of donations is a dummy variable that takes the value 1 if donations are positive.  $X_{i,t}$  is a vector of control variables, including the size of the MFO (natural logarithm of total assets), age (number of years of operation as an MFO), risk (share of portfolio at risk, i.e. with 30 days arrears), legal status (NGO dummy), regulatory status (REGULATED dummy), and the business model of taking

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<sup>8</sup> Table A.1 in the Appendix displays a correlation matrix presenting all pairwise univariate correlations between the continuous variables used throughout this study.

deposits in addition to lending (TAKE DEPOSITS dummy). These are standard control variables in the microfinance literature (Cull et al. 2009; Cull et al., 2018; Mersland et al., 2018).

The *Size* accounts for scale effects (Harris et al., 2015). The *Age* measures the experience of MFOs (Cull et al., 2018). The legal status accounts for the diversity of legal frameworks used by MFOs (Hermes and Hudon, 2018); regulatory status provides information on the fact that MFOs are regulated (D’Espallier et al., 2017) and the last control variable accounts for the fact that some MFOs offer savings products (Cozarenco et al., 2016). Note that there are missing observations for several variables. The number of observations varies across the estimated equations.

The variable  $\mu_i$  captures the unobserved firm-specific heterogeneity estimated using random effects (RE) estimation to account for time-invariant MFI-specific variation in the dependent variable. The variable  $\vartheta_r$  represents regional effects to account for regional differences in our global sample without the severe loss of degrees of freedom associated with country-level dummies. We also experiment with the inclusion of time dummies and compute robust standard errors that account for heteroskedasticity and autocorrelation, i.e., the Huber-White correction. Equation (1) assesses how the presence/amount of donations affects social performance while controlling for both observed and unobserved MFO characteristics as well as time and regional variation.

We perform several robustness checks to assess the validity of our results. A first concern is potential endogeneity resulting from reverse causality. Our goal is to test for the signaling effect whereby the presence of donors positively affects social performance, but conversely, MFOs with higher social performance are more likely to attract donations. To address this endogeneity concern arising from related dependent variables in the two single-equation regressions, we use Hausman-Taylor (HT) regressions as a robustness check. This instrumental

variable (IV) approach fits RE-modeling when some covariates are correlated with unobserved institution-specific characteristics.<sup>9</sup>

In our framework, the two performance measures (percentage of female borrowers and average loan size) are likely to be jointly determined, since women are on average poorer than men and take smaller loans. Therefore, we expect to find a relationship between the two measures of social performance. To allow for this possibility, we also estimate our model through a system of equations in which the parameters are estimated jointly using the seemingly unrelated regressions (SUR) procedure (Zellner, 1963). This specification allows the two error terms to be correlated.

Finally, we will test for the imprinting effect in Hypothesis 2 by exploiting the time variation in MFO subsidy patterns. We will derive evidence on the persistence of the signals provided by the presence of donors. Specifically, we will conduct two additional investigations. In the first, we will distinguish between two types of transitions: a subsidized period after an initial donation injection, and an unsubsidized period after a subsidized one; and then use RE and SUR-estimations to explore the links between transitions and social performance. In the second, we will assess the persistence of the signal generated by the presence of donors by examining the interactions of this presence with a counting variable that equals zero until the first donation injection, then becomes 1 and increases by 1 for each subsequent subsidized year. These original methods can be used in other contexts to test the strength and persistence of specific signals.

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<sup>9</sup> We obtained comparable results by using 2SLS regressions where the endogenous variable (presence/level of donations) is instrumented by the net official development assistance as a percentage of GNI per capita, where GNI is measured in PPP-adjusted dollars, and the level of foreign direct investments expressed as percentages of domestic GDP. Despite the proven relevance of these instruments, we missed evidence that these variables are unrelated to our social performance constructs. In line with previous studies (Wry and Zhao, 2018; Xu et al. (2016), we cannot reject the hypothesis of weak instruments, neither on technical grounds, nor on conceptual grounds. This evidence suggests that causality between donations and social performance likely runs in both directions simultaneously. Yet our theoretical hypotheses framed in terms of relationships can be tested reliably.



## RESULTS

Table 2 presents the results of our baseline regression model (1), which regresses both social performance measures on the presence of donors and on the amount of donations. When we assess the impact of the amount of donations conditional on receiving donations (columns 3 and 4), the corresponding regressions are run on the restricted sample of MFOs that received donations in the specified sample period. As a result, the number of MFO-time observations differs across specifications. The results show that, all else equal, the MFOs that do not receive donations during the sample period serve significantly fewer women, to the tune of about 6 percentage points. However, we find no statistical evidence that, conditional on receiving donations, the amount of donations is related to the proportion of women served, in line with theoretical predictions.<sup>10</sup>

We find similar results for the second social indicator, average loan size. MFOs that receive donations have lower loan sizes, especially when controlling for region and time fixed effects. There is no significant relationship between the amount of donations and the size of the loans confirming that there is no relationship between the amount of donations and social performance, conditional on having donations. Of course, amounts are important for the financial management of the social enterprise. However, when it comes to motivating donors with social impact, the MFOs pay more attention to the presence of donors than to the amount of their donations. Regardless of the methodology used, the estimations carried out in the sample of MFOs receiving donations show that the coefficient of the level of donations is close to zero and statistically insignificant. In sum, donor involvement has a consistently positive impact on our first indicator of social performance (percentage of female borrowers), while the level of subsidization is unrelated to this performance.

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<sup>10</sup> Even though our model specifications include time and region fixed effects, thus controlling for remaining unobserved heterogeneity both time-invariant and across sample-years, we cannot rule out potential bias from other omitted variables, such as the cost of capital.

Taken together, the results validate Hypothesis 1a and Hypothesis 1b, which state that the donor presence is positively associated with social performance while the amount of donations is not.

**< Insert Table 2 >**

Table 3 duplicates the empirical exercise with SUR where both measures of the social performance are jointly regressed on the presence of donors (columns 1-2) and on the amount of donation (columns 3-4) using the procedure developed by Zellner (1963). The table reports the Breusch-Pagan independence statistic, which assesses the relevance of the joint modeling by testing whether the residuals from the separate specifications are indeed correlated within the system. In all specifications, the Breusch-Pagan independence statistic is significant at the 1% level, indicating that the share of women and the average loan size are simultaneously determined. System estimation yields results close to those of single equation modeling: Donor involvement is associated with more female clients and smaller loans, all else equal, confirming the link between donor presence and social performance.

As with the donor-amount analysis, the system approach yields a counterintuitive result regarding the share of female borrowers: conditional on the existence of donations, a higher level of donations seems to worsen this indicator of social performance. Importantly, no similar effect is found for average loan size, which is the most common proxy for poverty reduction used by donors. While the observed anomaly deserves further investigation in future work, for now we simply highlight that a negative impact of the level of donations on social performance strengthens the validation of our theoretical hypotheses on the signaling effect. In summary, the bivariate exercise supports the theory that donor involvement improves social performance while the amount of donations does not (Hypotheses 1a and 1b).

**< Insert Table 3 >**

Table 4 presents the estimation results of several robustness checks. Columns 1 and 4 present Hausman-Taylor estimations for the analysis of the amount of donations on the share of female clients and the loan size, respectively. The results again show no relationship between

the amount of donations and social performance, conditional on the presence of donations. In the remaining columns we include *lagged* donations and *squared* donations as additional regressors to account for possible lagged and/or non-linear effects of subsidization. Neither the lagged nor the squared terms are significant at conventional levels of significance.<sup>11</sup>

**< Insert Table 4 >**

In Table 5, we repeat the empirical exercise with an alternative measure of the amount of donations: balance sheet donations (donated equity) instead of income statement donations. Donated part of equity adds up the historical donations received by the MFO's equity account, as opposed to the annual donations used previously. Consistent with the results obtained for income statement donations, the figures show that MFOs with donated equity have higher social performance in that they have significantly more female clients and make smaller loans than their unsubsidized counterparts (columns 1 and 2). Conditional on having donated equity, we again find no evidence that the level of donated equity is associated with increased social performance (columns 3 through 6). If anything, the analysis suggests that higher levels of donated equity would be linked to lower social performance in terms of loan size, all else equal. Once again, the empirical analysis confirms the baseline results.<sup>12</sup>

**< Insert Table 5 >**

We then turn to further analyses. In Table 6 we examine whether the ownership structure of the MFO affects our results by interacting the presence of donors with a dummy that equals one if the MFO is a nongovernmental organization (NGO). Columns 1 and 2 report RE regressions and columns 3 and 4 report system regressions. The results show that, although the significance levels of the interaction term are mostly low, the presence of donors affects the social performance of NGOs to a lesser extent than that of non-NGO counterparts. While we

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<sup>11</sup> The only exception is the relationship between lagged donations and the percentage of women, which shows that higher lagged donations are associated with a higher percentage of women at the 10% significance level.

<sup>12</sup> In a related, unreported robustness test we ran a Heckman selection model, in which the probability of receiving a donation is estimated as a first-stage selection equation that is then implemented in a second-stage outcome equation to estimate the impact of the amount of the donation on social performance. This Heckman selection model mimics well our baseline model, which is also a conditional model that examines the impact of donation size for those MFOs that actually receive a donation. Comparable results are obtained.

cannot conclude that the positive relationship between donor presence and social performance disappears entirely for NGOs, it seems that the signaling effect is less necessary or valuable for the subset of NGOs. This may be because NGOs are already more embedded in pro-social communities.

**< Insert Table 6 >**

To conclude the empirics, we report in Table 7 the analysis of the imprinting effects formalized in Hypothesis 2. To examine transitions into and out of subsidized periods, we introduce two dummy variables: The first identifies each subsidized period that follows an initial injection of donor funds, and the second corresponds to each unsubsidized period that follows a subsidized period. Columns 1 to 4 report on impact of these dummies on social performance. The results show that the percentage of female clients increases significantly when the MFO becomes subsidized after an initial injection of funds (column 1), and that MFOs tend to offer smaller loans under these circumstances (column 3). Furthermore, the results show that the improved social performance observed during subsidized periods is not reversed in a subsequent unsubsidized period (columns 2 and 4). Our results suggest that the donation-linked signal persists even after donations cease to flow into the MFO, thus confirming Hypothesis 2.

To further explore the intensity of the imprinting effect, we construct a switch variable that equals one after the initial subsidy and increases steadily by one in each subsequent subsidized year. Columns 5 to 8 report on the effects of the switching variable and its interaction with the subsidy dummy. The idea is to check whether the signaling effect found in the baseline regressions tapers off over time, a movement that would be captured by the sign of the interaction term being opposite to the level effect on both social performance constructs. The results show that the interaction term is insignificant in the RE models, suggesting that the social performance of subsidized MFOs does not taper off. When the same analysis is conducted using the system approach, the results confirm that the social performance of subsidized MFOs does not taper off but is rather strengthens over time.

To sum up, the empirical results based on the time dimension confirm the results we previously obtained earlier when relying mainly on the cross-sectional dimension. Improved social performance is indeed observed in the periods following an initial subsidy and does not return to the pre-subsidy situation when the subsidies dry up. Moreover, social performance does not erode over time. Our results underscore the remarkable persistence of social outcomes induced by donor presence. The persistence of donor-related social performance suggests that the design of smart donation strategies is appropriate for the microfinance industry. According to Armendáriz and Morduch (2010), smart subsidies maximize social benefits while keeping market distortions in check.

< Insert Table 7 >

## **DISCUSSION AND CONCLUSION**

Donors typically seek to maximize their social impact. Therefore, identifying the channels through which donors influence the social performance of their grantees is key to strategically optimizing impact. Our findings in the previous section first confirm that the presence of donors has a positive relationship with the social performance of the organizations they support, thereby strengthening mission alignment and counteracting the common trend of mission drift associated with the increasing commercialization of social enterprises. Our findings also suggest that the connection between donors and social performance does not depend on the amount of money given, but only on the presence of donors, confirming the theoretical implications of signaling theory. The presence of donors conveys reputational information to the donor community and the public. In contrast, the amount of money given, while important to grantees, is less visible and therefore of little use as a signaling device. These findings are consistent with previous evidence that donor support, however small, acts as a disciplining device (Labie et al., 2017).

We complement our results on signaling theory with further evidence on the imprinting effect of past donor presence. Our results support the predictions of imprinting theory and

suggest that the donor presence has a long-lasting effect on social performance that remains active even after donations have dried up. Overall, our findings suggest that donor involvement has a strong and decisive impact on the social performance of social enterprises.

Our work suggests recommendations for donors who wish to maximize their social impact. From the perspective of donors who are asked to make grants to multiple organizations, our results suggest that social impact is maximized by diversifying contributions across organizations rather than concentrating them on a handful of beneficiaries since the fact of being involved as a donor has more impact than the amount given. If this is the case, the social impact of a collection of (possibly) small donations to social enterprises would far exceed the impact of the same total amount given to a single beneficiary. The recommendation to donors is therefore to support as many organizations as possible, provided that they are aligned with the desired social performance.<sup>13</sup> This message challenges the common mantra that effective social enterprises should strive for financial self-sustainability and be free of donor money and influence. In contrast, our findings are consistent with the presence of pro-social donors being preferable to complete autonomy. However, imprinting theory suggests that a temporary involvement may be sufficient to sustain a long-term social impact.

Further theoretical research could further rationalize the imprinting effect. For example, past donations may help the MFO to reduce its overall cost of capital by leveraging other financial resources at a preferential rate through the mediated effect of improved social performance. Testing this hypothesis would require reliable data on the cost of capital, which can be difficult to obtain.

Our paper finds no evidence to support the hypothesis that, conditional on having a donation, the amount of donations positively affects social performance in terms of female clients and loan size. Future research, however, could further investigate the impact of donations on MFO behavior by looking at other social metrics or by examining the relationship

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<sup>13</sup> However, monitoring the social performance of a large portfolio of beneficiaries may create additional costs, suggesting a potential trade-off between social and financial performance (Reichert, 2018; Wry & Zhao, 2018).

in specific segments of the subsidy distribution.<sup>14</sup> Similarly, our analysis focuses on a single type of donation, namely grants. Promising developments could examine other forms of subsidies, such as preferential loans and subsidized equity (Cull et al., 2009; Hudon et al., 2021), which are commonly used to finance social enterprises. Both our theoretical framework and our empirical design are adaptable to such an extension. Moreover, they allow measuring the efficiency of subsidization techniques by comparing their impact on social performance (D'Espallier et al., 2017; Cornée et al., 2022). This extension is attractive because one of the most challenging issues in social finance today is to compare the social impact of "pure" donors with that of social investors, who have a hybrid agenda of financial and social goals.

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<sup>14</sup> For example, "over-subsidization" could occur at some point, potentially leading to lower social performance.

## References

- Ahlin, C., Lin, J., & Maio, M. (2011). Where does microfinance flourish? Microfinance institution performance in macroeconomic context. *Journal of Development Economics*, 95(2): 105-120.
- Armendáriz, B., & Morduch, J. (2010). *The Economics of Microfinance*. MIT Press, Boston.
- Armendáriz, B., & Szafarz, A. (2011). On mission drift in microfinance institutions, in: B. Armendáriz & Labie, M. Eds., *The Handbook of Microfinance*, London-Singapore: World Scientific Publishing, 341-366.
- Augustine, D. (2012). Good practice in corporate governance: Transparency, trust, and performance in the microfinance industry. *Business & Society*, 51(4), 659-676.
- Balkenhol, B., & Hudon, M. (2011). Efficiency. In B. Armendáriz & Labie, M. Eds., *The Handbook of Microfinance*, London-Singapore: World Scientific Publishing, 383-396.
- Banerjee, A.V., & Duflo, E. (2011). *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. Public Affairs, New York.
- Barber, B., Morse, A. & Yasuda, A. (2021). Impact investing. *Journal of Financial Economics*, 139(1): 162-185.
- Battilana, J. (2018). Cracking the organizational challenge of pursuing joint social and financial goals: Social enterprise as a laboratory to understand hybrid organizing. *M@n@gement*, 214: 1278-1305.
- Battilana, J. & Dorado, S. (2010). Building sustainable hybrid organizations: The case of commercial microfinance organizations. *Academy of Management Journal*, 53(6): 1419-1440.
- Battilana, J., Lee, M., Walker, J., & Dorsey, C. (2012). In search of the hybrid ideal. *Stanford Social Innovation Review*, 10(3): 50–55.
- Battilana, J., & Lee, M. (2014). Advancing research on hybrid organizing. Insights from the study of social enterprises. *Academy of Management Annals*, 8(1): 397-441.
- Battilana, J., Sengul, M., Pache, A.C., & Model, J. (2015). Harnessing productive tensions in hybrid organizations: The case of work integration social enterprises. *Academy of Management Journal*, 58(6): 1658-1685.
- Bekkers, R., & Wiepking, P. (2007). Generosity and philanthropy: A literature review. Available at SSRN 1015507.
- Bekkers, R., & Wiepking, P. (2011). A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. *Nonprofit and Voluntary Sector Quarterly*, 40(5), 924-973.



- Bergh, D. D., Connelly, B.L., Ketchen, D.J., & Shannon, L.M. (2014). Signalling theory and equilibrium in strategic management research: An assessment and a research agenda. *Journal of Management Studies*, 518: 1334-1360.
- Bourdieu, P., & Wacquant, L. (1992). *Réponses* (Vol. 4). Paris: Seuil.
- Busenitz, L. W., Fiet, J.O., & Moesel, D.D. (2005). Signaling in venture capitalist–new venture team funding decisions: Does it indicate long-term venture outcomes? *Entrepreneurship: Theory and Practice*, 29: 1-12.
- Carter, S.M. (2006). The interaction of top management group, stakeholder, and situational factors on certain corporate reputation management activities. *Journal of Management Studies*, 435: 1145-1176
- Certo, S.T. (2003). 'Influencing initial public offering investors with prestige: signaling with board structures. *Academy of Management Review*, 28: 432–46.
- Chen, X.P., Yao, X., & Kotha, S. (2009). Entrepreneur passion and preparedness in business plan presentations: a persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 521: 199-214
- Cobb, J.A., Wry, T., & Zhao, E. Y. (2016). Funding financial inclusion: Institutional logics and the contextual contingency of funding for microfinance organizations. *Academy of Management Journal*, 596: 2103-2131.
- Connelly, B. L., Certo, S.T., Ireland, R.D., & Reutzel, C.R. (2011). Signaling theory: A review and assessment. *Journal of Management*, 371: 39-67.
- Cornée, S., Jegers, M., & Szafarz, A. (2022), Feasible Institutions of Social Finance: A Taxonomy. *Journal of Institutional and Theoretical Economics*, forthcoming.
- Cornée, S., Kalmi, P., & Szafarz, A. (2016), Selectivity and transparency in social banking: Evidence from Europe. *Journal of Economic Issues*, 50: 494-502.
- Cozarenco, A., & Szafarz, A. (2020), The regulation of prosocial lending: Are loan ceilings effective? *Journal of Banking & Finance*, 121, 105979.
- Cozarenco, A., Hudon, M., & Szafarz, A. (2016). What type of microfinance institutions supply savings products?. *Economics Letters*, 140, 57-59.
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2018). The microfinance business model: Enduring subsidy and modest profit. *World Bank Economic Review*, 32(2), 221-244.
- Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2009). Microfinance meets the market. *Journal of Economic Perspectives*, 231: 167-92.
- Dacin, P.A., Dacin, M.T., & Matear, M. (2010). Social entrepreneurship: Why we don't need a new theory and how we move forward from here. *Academy of Management Perspectives*, 243: 37-57.

- D'Espallier, B., Hudon, M., Khavul, S., & Szafarz, A. (2021). Donors talk: the signaling and imprinting effects of giving to social enterprises. *Academy of Management Proceedings*, 1: 16014.
- D'Espallier, B., Goedecke, J., Hudon, M. & Mersland, R. (2017), From NGOs to banks: Does institutional transformation alter the business model of microfinance institutions?, *World Development*, 89, 19–33.
- D'Espallier, B., Hudon, M., & Szafarz, A. (2013). Unsubsidized microfinance institutions. *Economics Letters*, 1202: 174-176.
- D'Espallier, B., Hudon, M., & Szafarz, A. (2017). Aid volatility and social performance in microfinance. *Nonprofit and Voluntary Sector Quarterly*, 461: 116-140.
- Drori, I., Manos, R., Santacreu-Vasut, E., & Shoham, A. (2020). How does the global microfinance industry determine its targeting strategy across cultures with differing gender values? *Journal of World Business*, 55(5): 100985.
- Ebrahim, A., Battilana, J. & Mair, J. (2014). The governance of social enterprises: Mission drift and accountability challenges in hybrid organizations. *Research in Organizational Behavior*, 34: 81–100.
- Ebrahim, A., & Rangan, V.K. (2014). What impact? A framework for Measuring the Scale & Scope of Social Performance. *California Management Review*, 56(3): 118–141.
- Eikenberry, A.M. & Kluver, J.D. (2004). The marketization of the nonprofit sector: Civil society at risk? *Public Administration Review*, 64(2): 132–140.
- Elitzur, R., & Gaviols, A. (2003). Contracting, signaling, and moral hazard: A model of entrepreneurs, “angels,” and venture capitalists. *Journal of Business Venturing*, 18: 709-725.
- Ellis, S., Aharonson, B. S., Drori, I., & Shapira, Z. (2017). Imprinting through inheritance: A multi-genealogical study of entrepreneurial proclivity. *Academy of Management Journal*, 602: 500-522.
- Fombrun, C., & Shanley, M. (1990). What's in a name? Reputation building and corporate strategy. *Academy of Management Journal*, 332: 233-258.
- Galema, R., Lensink, R., & Mersland, R. (2012). Do powerful CEOs determine microfinance performance? *Journal of Management Studies*, 494: 718-742.
- Gangloff, K. A., Connelly, B. L., & Shook, C. L. (2016). Of scapegoats and signals: Investor reactions to CEO succession in the aftermath of wrongdoing. *Journal of Management*, 426: 1614-1634.
- Gibbons R. (2005). Incentives between firms and within. *Management Science*, 51(1): 2-17.
- Gioia, D. A., & Manz, C. C. (1985). Linking cognition and behavior: A script processing

- interpretation of vicarious learning. *Academy of Management Review*, 10(3): 527-539.
- Gomulya, D., & Mishina, Y. (2017). Signaler credibility, signal susceptibility, and relative reliance on signals: How stakeholders change their evaluative processes after violation of expectations and rehabilitative efforts. *Academy of Management Journal*, 60(2), 554-583.
- Grimes, M., Williams, T.A., & Zhao, E.Y. (2019). Anchors aweigh: The sources, variety, and challenges of mission drift. *Academy of Management Review*, 44(4): 819-845.
- Gulati, R., & Higgins, M.C. (2003). Which ties matter when? The contingent effects of interorganizational partnerships on IPO success. *Strategic Management Journal*, 24: 127-144.
- Gupta, A. K., Govindarajan, V., & Malhotra, A. (1999). Feedback-seeking behavior within multinational corporations. *Strategic Management Journal*, 20: 205-222.
- Gyapong, E., & Afrifa, G. A. (2019). National Culture and Women Managers: Evidence from microfinance institutions around the world. *Business & Society*, 0007650319876101.
- Hartarska, V. (2005). Governance and performance of microfinance institutions in Central and Eastern Europe and the newly independent states. *World Development*, 33(10): 1627-1643.
- Heinrich C. J. (2002). Outcomes-based performance management in the public sector: implications for government accountability and effectiveness. *Public Administration Review* 62(6): 712-725.
- Hermes, C., & Hudon, M. (2018). Determinants of the performance of microfinance institutions: A systematic review, *Journal of Economic Surveys*, 32(5): 1483-1513.
- Hermes, N., Lensink, R., & Meesters, A. (2011). Outreach and efficiency of microfinance institutions. *World Development*, 39(6): 938-948.
- Hicks, D. L., & Maldonado, B. (2020). Do foreign aid donors reward recipients for improving gender outcomes? *Applied Economics Letters*, 27(1): 46-51.
- Higgins, M. C. (2005). *Career imprints: Creating leaders across an industry* (Vol. 16). John Wiley & Sons.
- Hudon, M., & Traca, D. (2011). On the efficiency effects of subsidies in microfinance: An empirical inquiry. *World Development*, 39(6): 966-973.
- Hudon, M., Reichert, P., & Szafarz A. (2021). Crowding-in without crowding-out: Subsidy design as a strategic device to foster commercialization. *Perspectives on Public Management and Governance*, 4(3), 291-308.
- Hutton, J.G., Goodman, M.B., Alexander, J.B., & Genest, C.M. (2001). Reputation management: the new face of corporate public relations? *Public Relations Review*, 27(3): 247-261.

- Jay, J. (2013). Navigating paradox as a mechanism of change and innovation in hybrid organizations. *Academy of Management Journal*, 56(1): 137-159.
- Johnson, R.A. & Greening, D.W. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. *Academy of Management Journal*, 42(5): 564-576.
- Jourdan, J., & Kivleniece, I. (2017). Too much of a good thing? The dual effect of public sponsorship on organizational performance. *Academy of Management Journal*, 60(1): 55-77.
- Karamanos, A.G. (2003). Complexity, identity and the value of knowledge-intensive exchanges. *Journal of Management Studies*, 40: 1871-1890.
- Khavul, S. (2010). Microfinance: creating opportunities for the poor? *Academy of Management Perspectives*, 24(3): 58-72.
- Khavul, S., Peterson, M., Mullens, D., & Rasheed, A. A. (2010). Going global with innovations from emerging economies: Investment in customer support capabilities pays off. *Journal of International Marketing*, 18: 22-42.
- Kelman, S. (2015). Public Management Needs Help! *Academy of Management Journal*, 48(6): 967-969.
- Kent, D., & Dacin, M.T. (2013). Bankers at the gate: Microfinance and the high cost of borrowed logics. *Journal of Business Venturing*, 28(6): 759-773.
- Labie, M., Laureti, C., & Szafarz, A. (2017). Discipline and flexibility: A behavioral perspective on microfinance product design. *Oxford Development Studies*, 45(3): 321-337.
- Lee, P. (2001). What's in a name .com? The effects of ".com" name changes on stock prices and trading activity. *Strategic Management Journal*, 22: 793-804.
- Lester, R. H., Certo, S. T., Dalton, C. M., Dalton, D. R., & Cannella, A. A. (2006). Initial public offering investor valuations: An examination of top management team prestige and environmental uncertainty. *Journal of Small Business Management*, 44: 1-26.
- Levy, M., & Szafarz, A. (2017), Cross-ownership: A device for management entrenchment? *Review of Finance*, 21(4): 1675-1699.
- Mair, J., Battilana, J., & Cardenas, J. (2012). Organizing for society: A typology of social entrepreneuring models. *Journal of Business Ethics*, 111(3): 353-373.
- Marquis, C. & Tilczik, A. (2013). Imprinting: Toward a multilevel theory. *Academy of Management Annals*, 7(1): 193-243.
- Markowitz, H. (1952). Portfolio selection. *Journal of Finance*, 7(1): 77-91.
- Markowitz, H. (1959). *Portfolio Selection, Efficient Diversification of Investments*. J. Wiley.

- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26(1): 117-127.
- Mersland, R., & Strøm, R. Ø. (2010). Microfinance mission drift? *World Development*, 38(1): 28-36.
- Mersland, R., & Strøm, R.Ø. Eds. (2015). *Microfinance Institutions: Financial and Social Performance*, Palgrave MacMillan, London.
- Mersland, R., Nyarko, S.A., & Szafarz, A. (2019). Do social enterprises walk the talk? Assessing microfinance performances with mission statements. *Journal of Business Venturing Insights*, 11, e00117.
- Milanov, H., & Fernhaber, S.A. (2009). The impact of early imprinting on the evolution of new venture networks. *Journal of Business Venturing*, 24(1): 46-61.
- Molecke, G., & Pinkse, J. (2017). Accountability for social impact: A bricolage perspective on impact measurement in social enterprises. *Journal of Business Venturing*, 32(5), 550-568.
- Monne, J., Louche, C., & Villa, C. (2016). Rational herding toward the poor: Evidence from location decisions of microfinance institutions within Pakistan. *World Development*, 84, 266-281.
- Morduch, J. (2007). Smart subsidies. In Balkenhol B. Ed., *Microfinance and Public Policy* Palgrave Macmillan, London, pp. 72-85.
- Nason, R., & Wiklund, J. 2018. An assessment of resource-based theorizing on firm growth and suggestions for the future. *Journal of Management*, 44(1): 32-60.
- Pozzebón, M., Christopoulos, T.P., & Lavoie, F. (2019). The Transferability of Financial Inclusion Models: A Process-Based Approach. *Business & Society*, 58(4), 841-882.
- Reichert P. (2018). A meta-analysis examining the nature of trade-offs in microfinance, *Oxford Development Studies*, 46(3): 430-452.
- Sanders, W.G., & Boivie, S. (2004). Sorting things out: Valuation of new firms in uncertain markets. *Strategic Management Journal*, 25: 167-186.
- Shymko, Y., & Roulet, T.J. (2017). When does Medici hurt da Vinci? Mitigating the signaling effect of extraneous stakeholder relationships in the field of cultural production. *Academy of Management Journal*, 60(4): 1307-1338.
- Schmalz, M.C. (2018). Common-ownership concentration and corporate conduct. *Annual Review of Financial Economics*, 10: 413-448.
- Scott, W.R. (1977). Effectiveness of organizational effectiveness studies. In S. P. Goodman & J. Pennings Eds., *New Perspectives on Organizational Effectiveness*, San Francisco, CA: Jossey-Bass, pp. 63–95.
- Shleifer, A. & Vishny, R.W. (1986). Large shareholders and corporate control. *Journal of*

- Political Economy*, 94: 461-488.
- Siegel, D.S. (2009). Green management matters only if it yields more green: An economic/strategic perspective. *Academy of Management Perspectives*, 5-16.
- Soursourian, M. & Dashi, E. (2017). Current trends in cross-border funding for microfinance. CGAP brief; CGAP, Washington, DC.
- Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review*, 923: 434-459.
- Srivastava, J. (2001). The role of inferences in sequential bargaining with one-sided incomplete information: Some experimental evidence. *Organizational Behavior and Human Decision Processes*, 85: 166-187.
- Stinchcombe, A. (1965), Social structure and organizations. In: March, J. Ed., *Handbook of Organizations*, Rand McNally & Co, Chicago, IL 1965, pp. 142–193.
- Tchakoute-Tchuigoua, H., & Soumaré, I. (2019). The effect of loan approval decentralization on microfinance institutions' outreach and loan portfolio quality. *Journal of Business Research*, 94: 1-17.
- Tchakoute-Tchuigoua, H., Soumaré, I., & Hessou, H. T. (2020). Lending and business cycle: Evidence from microfinance institutions. *Journal of Business Research*, 119: 1-12.
- Tyebjee, T. & Bruno, A. (1984). A model of venture capitalist investment activity. *Management Science*, 30: 1051–1066.
- Wang, H., & Qian, C. (2011). Corporate philanthropy and corporate financial performance: The roles of stakeholder response and political access. *Academy of Management Journal*, 546: 1159-1181.
- White, A.H. (1989). Patterns of Giving. In Richard Magat Ed., *Philanthropic Giving*. Oxford: Oxford University Press, pp. 65-71.
- Wry, T. & York, J.G. (2017). An identity-based approach to social enterprise. *Academy of Management Review*, 423: 437-460.
- Wry, T., & Zhao, E. (2018). Taking tradeoffs seriously: Examining the contextually contingent relationship between social outreach intensity and financial sustainability in global microfinance. *Organization Science*, 293: 507-528.
- Xu, S., Copestake, J., & Peng, X. (2016). Microfinance institutions' mission drift in macroeconomic context. *Journal of International Development*, 28(7): 1123-1137.
- Zellner, A. (1963). Estimators for seemingly unrelated regression equations: Some exact finite sample results. *Journal of the American Statistical Association*, 58: 977-992.
- Zhang, Y., & Wiersema, M.F. (2009). Stock market reaction to CEO certification: The signaling role of CEO background. *Strategic Management Journal*, 307: 693-710.

Zhao, E., & Wry, T. (2016). Not all inequality is equal: Decomposing the societal logic of patriarchy to understand microfinance lending to women. *Academy of Management Journal*, 59: 1994-2020.

## List of Tables

**Table 1. Summary statistics**

<b>Variable</b>	<b>Definition</b>	<b>#obs</b>	<b>Mean</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<i>MFO characteristics</i>						
TA	total assets (thousand USD)	11,041	24,300	3,875	157.19	699,000
Size	natural logarithm of TA	11,041	15.34	15.17	11.97	20.37
TLP	gross loan portfolio (thousand USD)	13,023	16,700	2,418	1517	541,000
Equity	total equity (thousand USD)	11,400	4,718	1,078	197	121,000
Age	number of years in operation	14,381	12.09	10	0	106
Par30	portfolio at risk 30 days in arrears	9,909	0.053	0.0292	0	0.5891
NGO	dummy 1 if the MFO is an NGO	14,627	0.33	0	0	1
Take deposits	dummy 1 if the MFO takes deposits	10,626	0.59	1	0	1
Regulated	dummy 1 if the MFO is regulated	14,083	0.69	1	0	1
<i>Subsidization</i>						
Donations	income statement donations (thousand USD)	12,385	72.342	0	0	1,943
Donations /total assets	donations as a percentage of total assets	9,925	0.0325	0	0	0.995
Donor presence	dummy 1 if the MFO has income statement donations over sample period	14,311	0.677	1	0	1
Donated equity	balance sheet donated equity (thousand USD)	8,411	690.78	19.334	0	15,900
Donated equity /equity	balance sheet donated equity as a percentage of total equity	5,415	0.194	0.018	0	1
Has donated equity	dummy 1 if the MFO has donated equity over sample period	12,395	0.687	1	0	1
<i>Social performance</i>						
Average loan	Average loan size (USD)	11,610	1,114	461.47	17.24	15,655
ALS	Average loan size scaled by per capita GNI	11,564	0.747	0.314	0.0048	41.87
% FEM	Percentage of female borrowers	10,353	0.644	0.64	0	1



**Table 2. Baseline regression model**

Dependent variable Specification	% FEM				ALS			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Donor presence	0.039***	0.066***			-0.121°	-0.242***		
Donations /total assets			-0.009	-0.002			0.107	0.079
<i>Controls</i>								
Size	-0.003	-0.003	-0.007°	-0.005	0.043***	0.082***	0.070***	0.089***
Age	-0.003***	-0.004***	-0.001	-0.001°	-0.013***	0.001	-0.020***	-0.003
Par30	-0.203***	-0.189***	-0.247***	-0.220***	0.152	0.230	-0.270	-0.237
NGO	0.178***	0.137***	0.159***	0.113***	-0.331***	-0.230***	-0.305***	-0.302***
Take deposits	0.020**	0.011	0.028**	0.018°	-0.002	-0.009	0.034*	0.028
Regulated	-0.023°	-0.022°	-0.033°	-0.028°	0.303***	0.150**	0.208**	0.095
<i>region fixed effects</i>	no	yes	no	yes	no	yes	no	yes
<i>time fixed effects</i>	no	yes	no	yes	no	yes	no	yes
<i>observations</i>	<b>all</b>	<b>all</b>	<b>donation-takers</b>	<b>donation-takers</b>	<b>all</b>	<b>all</b>	<b>donation-takers</b>	<b>donation-takers</b>
N	5,314	5,314	3,492	3,492	5,802	5,802	3,682	3,682
Number of MFOs	1,438	1,438	873	873	1,492	1,492	891	891
Wald chi <sup>2</sup>	258.09***	2,195.68***	147.11***	379.76***	153.57***	-	72.51***	-
R <sup>2</sup>	0.13	0.25	0.12	0.26	0.05	0.10	0.06	0.11

°, \*, \*\*, and \*\*\* indicate statistical significance at the 20%, 10%, 5% and 1%-level, respectively

**Table 3. Simultaneous equation modeling**

<b>Dependent variable Specification</b>	<b>% FEM (1)</b>	<b>ALS (2)</b>	<b>% FEM (3)</b>	<b>ALS (4)</b>
Donor presence	0.075***	-0.228***		
Donations /total assets			-0.137***	-0.175
<b>Controls</b>				
Size	-0.013***	0.097***	-0.022***	0.096***
Age	-0.003***	-0.001	-0.001	-0.001
Par30	-0.571***	0.909***	-0.595***	0.708***
NGO	0.112***	-0.124***	0.099***	-0.173***
Take deposits	0.009	0.242***	0.025***	0.190***
Regulated	-0.013	0.042	-0.015	0.047
<i>region fixed effects</i>	yes	yes	yes	yes
<i>time fixed effects</i>	yes	yes	yes	yes
Chi <sup>2</sup>	1,948***	689.37***	1,311***	558.94***
R <sup>2</sup>	0.27	0.12	0.27	0.14
<b>Method</b>	<b>Simultaneous-equation modeling</b>		<b>Simultaneous-equation modeling</b>	
<b>Sample</b>	<i>All</i>		<i>Donation-takers</i>	
<b>N</b>	5,296		3,482	
<b>Breusch-Pagan</b>	194.04***		253.61***	
<b>Joint F-stat donations</b>	61.79***		5.39***	

*\*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5% and 1%-level, respectively.*

**Table 4. Robustness checks: HT regressions, non-linearities and lagged effects**

Dependent variable Specification	%FEM			ALS		
	(1)	(2)	(3)	(4)	(5)	(6)
Donations /total assets	0.016	0.047		0.038	0.154	
Squared donations/total assets		-0.089			-0.137	
Lagged donations /total assets			0.051*			-0.060
<i>Controls</i>						
Size	0.002	-0.005	-0.006	0.085***	0.089***	0.095***
Age	-0.002	-0.001	-0.001	-0.002	-0.003	-0.004
Par30	-0.195***	-0.220***	-0.218***	-0.227	-0.237	-0.233
NGO	0.112***	0.113***	0.128***	-0.273***	-0.302***	-0.277***
Take deposits	0.008	0.018	0.010	0.036	0.028	0.034
Regulated	-0.024	-0.028	-0.018	0.090	0.095	0.083
<i>region fixed effects</i>	yes	yes	yes	yes	yes	yes
<i>time fixed effects</i>	yes	yes	yes	yes	yes	yes
<i>Observations</i>						
N	3,492	3,492	3,332	3,682	3,682	3,505
Number of MFOs	873	873	810	891	891	828
Wald chi <sup>2</sup>	168.55***	-	-	130.24***	-	-
R <sup>2</sup>	-	0.26	0.28	-	0.11	0.13
<b>Method</b>	<b>Hausman-Taylor</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Hausman-Taylor</b>	<b>Random effects</b>	<b>Random effects</b>

\*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5% and 1%-level, respectively.

**Table 5. Balance sheet donations**

<b>Dependent variable Specification</b>	<b>% FEM (1)</b>	<b>ALS (2)</b>	<b>% FEM (3)</b>	<b>% FEM (4)</b>	<b>ALS (5)</b>	<b>ALS (6)</b>
Has donated equity	0.019**	-0.110***				
Donated equity / equity			0.007	0.007	0.074*	0.079**
<i>Controls</i>						
Size	-0.012***	0.100***	-0.007	-0.006	0.077***	0.075***
Age	-0.003***	0.001	-0.001	-0.001	-0.003	-0.002
Par30	-0.597***	1.090***	-0.201***	-0.193***	-0.162	-0.149
NGO	0.121***	-0.144***	0.117***	0.113***	-0.411***	-0.345***
Take deposits	0.005	0.259***	0.011	0.007	0.001	0.007
Regulated	-0.019**	0.032	-0.019	-0.018	0.021	0.043
<i>region fixed effects</i>	yes	yes	yes	yes	yes	yes
<i>time fixed effects</i>	yes	yes	yes	yes	yes	yes
<i>observations</i>		<b>all</b>	<b>donation-takers</b>	<b>donation-takers</b>	<b>donation-takers</b>	<b>donation-takers</b>
N		5,108	3,219	3,219	3,395	3,395
Breusch-Pagan		204.31***				
Joint F-stat donations		7.09***				
Wald chi <sup>2</sup> /F-stat	87.03***	31.91***	1,296***	251.28***	-	121.43***
R <sup>2</sup>	0.26	0.12	0.24	-	0.10	-
<b>Method</b>	<b>Simultaneous-equation modeling</b>		<b>Random Effects</b>	<b>Hausman-Taylor</b>	<b>Random effects</b>	<b>Hausman-Taylor</b>

\*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5% and 1%-level, respectively

**Table 6. NGO interaction and signaling**

<b>Dependent variable</b>	<b>% FEM</b>	<b>ALS</b>	<b>% FEM</b>	<b>ALS</b>
<b>Specification</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
Donor presence	0.075***	-0.275***	0.082***	-0.254***
Donor presence * NGO	-0.039°	0.144°	-0.034**	0.113°
<i>Controls</i>				
Size	-0.003	0.081***	-0.013***	0.096***
Age	-0.004***	0.001	-0.003***	-0.001
Par30	-0.189***	0.229	-0.570***	0.906***
NGO	0.166***	-0.335**	0.140***	-0.216***
Take deposits	0.011	-0.010	0.011°	0.239***
Regulated	-0.022°	0.152**	-0.013°	0.042
<i>region fixed effects</i>	yes	yes	yes	yes
<i>time fixed effects</i>	yes	yes	yes	yes
N	5,314	5,802	5,296	
Number of MFOs	1,438	1,492		
Wald chi <sup>2</sup>	2,209***	-	1,953***	691.67***
R <sup>2</sup>	0.25	0.10	0.27	0.12
Joint F-stat			32.17***	
Breusch-Pagan			193.19***	
<b>Method</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Simultaneous-equation modeling</b>	

°, \*, \*\*, and \*\*\* indicate statistical significance at the 20%, 10%, 5% and 1%-level, respectively.

**Table 7. Signal strength over time: subsidized periods and switch dummy**

<b>Dependent variable</b>	<b>% FEM</b>	<b>% FEM</b>	<b>ALS</b>	<b>ALS</b>	<b>% FEM</b>	<b>ALS</b>	<b>% FEM</b>	<b>ALS</b>
<b>Specification</b>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Subsidized period after initial injection	0.021***		-0.049°					
Unsubsidized period after subsidized period		0.010**		-0.021				
Donor presence					0.066***	-0.214**	0.036***	-0.189***
Donor presence * SWITCH					0.001	-0.011	0.013***	-0.019***
<i>Controls</i>								
Size	-0.004	-0.001	0.040***	0.037***	-0.003	0.085***	-0.018***	0.112***
Age	-0.004***	-0.004***	-0.005**	-0.008***	-0.004***	0.001	-0.004***	0.001
Par30	-0.182***	-0.197***	0.267	0.159	-0.240***	0.245	-0.565***	0.968***
NGO	0.145***	0.153***	-0.268***	-0.293***	0.131***	-0.217***	0.098***	-0.095**
Take deposits	0.021*	0.010	-0.005	0.006	0.011	0.004	0.012°	0.233***
Regulated	-0.028*	-0.028*	0.240***	0.229***	-0.022°	0.149**	-0.017**	0.046
region fixed effects	yes	yes	yes	yes	yes	yes	yes	Yes
time fixed effects	no	no	no	no	yes	yes	yes	Yes
N	4,111	5,288	4,534	5,774	4,867	5,334		4,849
Number of MFOs	1,403	1,468	1,463	1,524	1,421	1,477		-
Wald chi <sup>2</sup>	532.69***	627.16***	165.90***	163.58***	1,976***	-	1,875***	643.80***
R <sup>2</sup>	0.24	0.24	0.09	0.08	0.26	0.11	0.28	0.12
Breusch-Pagan								163.67***
Joint F-stat donations								52.20***
<b>Method</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Random effects</b>	<b>Simultaneous-equation modeling</b>	

°, \* , \*\* and \*\*\* indicate statistical significance at the 20%, 10%, 5% and 1%-level respectively

## Appendix

Table A.1. Correlation matrix

	TA	TLP	Equity	Age	Par30	Donations/TA	Don equity/equity	ALS	%FEM
TA	1								
TLP	0.97	1							
Equity	0.83	0.83	1						
Age	0.14	0.16	0.15	1					
Par30	-0.04	-0.04	-0.04	0.07	1				
Donations /total assets	-0.10	-0.10	-0.11	-0.15	-0.02	1			
Donated equity /equity	-0.18	-0.18	-0.15	-0.13	-0.02	0.27	1		
ALS	0.09	0.06	0.06	0.00	0.01	-0.05	-0.07	1	
%FEM	-0.12	-0.11	-0.13	-0.01	-0.16	0.07	0.09	-0.28	1